



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEFK8212

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
JOHN ABBOTT
304-558-2544

VENDOR

RFQ COPY
TYPE NAME/ADDRESS HERE

Danhill Construction Company
 PO Box 685
 Gauley Bridge, WV 25085

SHIP TO

DIV ENGINEERING & FACILITIES
NATIONAL GUARD ARMORY
COMBINED SUPPORT MAINT. SHOP
ROUTE 62 NORTH
PT. PLEASANT, WV
25550-9999 341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/10/2008				

BID OPENING DATE: **05/15/2008** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		285-54		\$116,150.00
<p>LIGHTING FIXTURES, INDOOR</p> <p>CONTRACT TO PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPLACE THE LIGHT FIXTURES AT THE WEST VIRGINIA ARMY NATIONAL GUARD, SUPPORT MAINTENANCE SHOP, PT. PLEASANT, WV, PER THE SPECIFICATIONS.</p> <p>MANDATORY ON-SITE PRE-BID: WVANG, PT. PLEASANT RSMS RT. 62, NORTH PT. PLEASANT, WV 25550</p> <p>DATE & TIME: 4/23/2008; 10:00 AM</p> <p>EXHIBIT 5</p> <p>NOTICE TO PROCEED: THIS CONTRACT IS TO BE PERFORMED WITHIN 45 CALENDAR DAYS AFTER THE NOTICE TO PROCEED IS RECEIVED. UNLESS OTHERWISE SPECIFIED, THE FULLY EXECUTED PURCHASE ORDER WILL BE CONSIDERED NOTICE TO PROCEED.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HERE IN.</p> <p>WAGE RATES: THE CONTRACTOR OR SUBCONTRACTOR SHALL PAY</p>						

2008 MAY 27 9:15:03
 PURCHASING DIVISION
 STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE Robert D. Hill TELEPHONE 304-632-1600 DATE 5/23/08

TITLE President FEIN 35-0648261 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications.

SIGNED BID TO:

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130



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ADDRESS CORRESPONDENCE TO ATTENTION OF
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 304-558-2544**

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 PO Box 685
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04/10/2008				
BID OPENING DATE: 05/15/2008		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UQP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>THE HIGHER OF THE U.S. DEPARTMENT OF LABOR MINIMUM WAGE RATES AS ESTABLISHED FOR MASON COUNTY, PURSUANT TO WEST VIRGINIA CODE 21-5A, ET, SEQ. (PREVAILING WAGE RATES APPLY TO THIS PROJECT)</p> <p>ARBITRATION: ANY REFERENCES MADE TO ARBITRATION OR INTEREST FOR PAYMENTS DUE (EXCEPT FOR ANY INTEREST REQUIRED BY STATE LAW) CONTAINED IN THIS CONTRACT OR IN ANY AMERICAN INSTITUTE OF ARCHITECTS DOCUMENTS PERTAINING TO THIS CONTRACT ARE HEREBY DELETED.</p> <p>WORKERS' COMPENSATION: VENDOR IS REQUIRED TO PROVIDE A CERTIFICATE FROM WORKERS' COMPENSATION IF SUCCESSFUL.</p> <p>ALL OF THE ITEMS CHECKED BELOW WILL BE A REQUIREMENT OF THIS CONTRACT:</p> <p><input checked="" type="checkbox"/> (XX) INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF COMMERCIAL GENERAL LIABILITY INSURANCE PRIOR TO ISSUANCE OF CONTRACT. UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS, THE MINIMUM AMOUNT OF INSURANCE COVERAGE REQUIRED IS \$250,000.</p> <p><input type="checkbox"/> () BUILDERS RISK INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF BUILDERS RISK - ALL RISK INSURANCE IN AN AMOUNT EQUAL TO 100% OF THE AMOUNT OF THE CONTRACT.</p> <p><input checked="" type="checkbox"/> (XX) BONDS: FIVE PERCENT (5%) OF THE TOTAL AMOUNT OF THE BID PAYABLE TO THE STATE OF WEST VIRGINIA, SHALL BE SUBMITTED WITH EACH BID AS A BID BOND. THE SUCCESSFUL BIDDER SHALL ALSO FURNISH A PERFORMANCE BOND AND LABOR/MATERIAL BOND FOR 100% OF THE AMOUNT OF THE CONTRACT. BONDS MAY BE PROVIDED IN THE FORM OF A CERTIFIED CHECK, IRREVOCABLE LETTER OF CREDIT, OR BOND FURNISHED BY A SOLVENT SURETY COMPANY AUTHORIZED TO DO BUSINESS IN THE STATE OF WEST VIRGINIA. A LETTER OF CREDIT SUBMITTED</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D. Hill</i>	TELEPHONE 304-632-1600	DATE 5/23/08
TITLE President	FERN 55-0648251	ADDRESS CHANGES TO BE NOTED ABOVE

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MATERIAL

RFQ COPY
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Danhill Construction Company
 PO Box 685
 Gauley Bridge, WV 25085

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<p>IN LIEU OF A PERFORMANCE AND LABOR & MATERIAL BOND WILL ONLY BE ALLOWED FOR PROJECTS UNDER \$100,000. PERSONAL OR BUSINESS CHECKS ARE NOT ACCEPTABLE IN LIEU OF THE 5% BID BOND, PERFORMANCE BOND, OR LABOR AND MATERIAL BOND.</p> <p>() MAINTENANCE BOND: A TWO (2) YEAR MAINTENANCE BOND COVERING THE ROOFING SYSTEM WILL BE A REQUIREMENT OF THE SUCCESSFUL VENDOR.</p> <p>REV. 11/00</p>						
<p>EXHIBIT 7</p> <p>DOMESTIC ALUMINUM, GLASS & STEEL IN PUBLIC WORKS PROJECTS</p> <p>IN ACCORDANCE WITH WEST VIRGINIA CODE 5-19-1 ET., SEQ., EVERY CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, ALTERATION, REPAIR, IMPROVEMENT OR MAINTENANCE OF PUBLIC WORKS, WHERE THE COST IS MORE THAN \$50,000 AND, IN THE CASE OF STEEL ONLY, WHERE THE COST OF STEEL IS MORE THAN \$50,000 OR WHERE MORE THAN 10,000 POUNDS OF STEEL ARE REQUIRED, THE STATE WILL ACCEPT ONLY ALUMINUM GLASS, OR STEEL PRODUCTS PRODUCED IN THE UNITED STATES. IN ADDITION, ITEMS OF MACHINERY OR EQUIPMENT PURCHASED FOR USE AT THE SITE OF PUBLIC WORKS SHALL BE MADE OF DOMESTIC ALUMINUM, GLASS OR STEEL, UNLESS THE COST OF THE PRODUCT IS LESS THAN \$50,000 OR LESS THAN 10,000 POUNDS OF STEEL ARE USED IN PUBLIC WORKS PROJECTS.</p> <p>FOREIGN MADE ALUMINUM, GLASS OR STEEL PRODUCTS MAY BE ACCEPTED ONLY IF THE COST OF DOMESTIC PRODUCTS IS FOUND TO BE UNREASONABLE. SUCH COST IS UNREASONABLE IF IT IS 20% OR MORE HIGHER THAN THE BID PRICE FOR FOREIGN MADE</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D Hill</i>	TELEPHONE 304-622-1600	DATE 5/23/08
TITLE President	FEN 55-0648251	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>PRODUCTS. IF THE DOMESTIC ALUMINUM, GLASS OR STEEL PRODUCTS TO BE SUPPLIED OR PRODUCED IN A "SUBSTANTIAL LABOR SURPLUS AREA", AS DEFINED BY THE UNITED STATES DEPARTMENT OF LABOR, FOREIGN PRODUCTS MAY BE SUPPLIED ONLY IF DOMESTIC PRODUCTS ARE 30% OR MORE HIGHER IN PRICE THAN THE FOREIGN MADE PRODUCTS.</p> <p>IF, PRIOR TO THE AWARD OF A CONTRACT UNDER THE ABOVE PROVISIONS, THE SPENDING OFFICER OF THE SPENDING UNIT DETERMINES THAT THERE EXISTS A BID FOR LIKE FOREIGN ALUMINUM, GLASS OR STEEL THAT IS REASONABLE AND LOWER THAN THE LOWEST BID DOMESTIC PRODUCTS, THE SPENDING OFFICE MAY REQUEST, IN WRITING, A REEVALUATION AND REDUCTION IN THE LOWEST BID FOR SUCH DOMESTIC PRODUCTS. ALL VENDORS MUST INDICATE IN THEIR BID IF THEY ARE SUPPLYING FOREIGN ALUMINUM, GLASS OR STEEL.</p> <p>REV. 3/88</p> <p>EXHIBIT 9</p> <p>NOTICE FOR ISSUANCE & ACKNOWLEDGEMENT OF CONSTRUCTION PROJECT ADDENDA</p> <p>THE ARCHITECT/ENGINEER AND/OR AGENCY SHALL BE REQUIRED TO ABIDE BY THE FOLLOWING SCHEDULE IN ISSUING CONSTRUCTION PROJECT ADDENDA FOR STATE AGENCIES:</p> <p>(1) THE ARCHITECT/ENGINEER SHALL PREPARE THE ADDENDUM AND A LIST OF ALL PARTIES THAT HAVE PROCURED DRAWINGS AND SPECIFICATIONS FOR THE PROJECT. THE ADDENDUM AND LIST SHALL BE FORWARDED TO THE BUYER IN THE STATE PURCHASING DIVISION. THE ARCHITECT/ENGINEER SHALL ALSO SEND A COPY OF THE ADDENDUM TO THE STATE AGENCY FOR WHICH THE CONTRACT IS ISSUED.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D. Hill</i>	TELEPHONE <i>304-632-1600</i>	DATE <i>3/23/08</i>
TITLE <i>President</i>	FEIN <i>55-0648251</i>	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>(2) THE BUYER SHALL SEND THE ADDENDUM TO ALL INTERESTED PARTIES AND, IF NECESSARY, EXTEND THE BID OPENING DATE. ANY ADDENDUM SHOULD BE RECEIVED BY THE BUYER WITHIN FOURTEEN (14) DAYS PRIOR TO THE BID OPENING DATE.</p> <p>(3) ALL ADDENDA SHOULD BE FORMALLY ACKNOWLEDGED BY ALL BIDDERS AND SUBMITTED TO THE STATE PURCHASING DIVISION. THE SAME RULES AND REGULATIONS THAT APPLY TO THE ORIGINAL BIDDING DOCUMENT SHALL ALSO APPLY TO AN ADDENDUM DOCUMENT. THE ONLY EXCEPTION MAY BE FOR AN ADDENDUM THAT IS ISSUED FOR THE SOLE PURPOSE OF CHANGING A BID OPENING TIME AND/OR DATE.</p> <p>REV. 11/96</p> <p>EXHIBIT 10</p> <p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NOS.:</p> <p>NO. 1 4/27/2008</p> <p>NO. 2</p> <p>NO. 3</p> <p>NO. 4</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D. Hill</i>	TELEPHONE 304-632-1600	DATE 5/23/08
TITLE President	FEIN 55-0648251	ADDRESS CHANGES TO BE NOTED ABOVE

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	NO. 5				
<p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF THE BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p><i>Robert D. Hill</i>SIGNATURE <i>Danhill Construction Company</i>COMPANY <i>5/23/08</i>DATE</p> <p>REV. 11/96</p> <p>CONTRACTORS LICENSE</p> <p>WEST VIRGINIA STATE CODE 21-11-2 REQUIRES THAT ALL PERSONS DESIRING TO PERFORM CONTRACTING WORK IN THIS STATE MUST BE LICENSED. THE WEST VIRGINIA CONTRACTORS LICENSING BOARD IS EMPOWERED TO ISSUE THE CONTRACTORS LICENSE. APPLICATIONS FOR A CONTRACTORS LICENSE MAY B MADE BY CONTACTING THE WEST VIRGINIA DIVISION OF LABOR CAPITOL COMPLEX, BUILDING 3, ROOM 319, CHARLESTON, WV 25305. TELEPHONE: (304) 558-7890.</p> <p>WEST VIRGINIA STATE CODE 21-11-11 REQUIRES ANY PROSPECTIVE BIDDER TO INCLUDE THE CONTRACTORS</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D. Hill</i>	TELEPHONE <i>304-632-1600</i>	DATE <i>5/23/08</i>
TITLE <i>President</i>	FEIN <i>55-01648251</i>	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>LICENSE NUMBER ON THEIR BID.</p> <p>BIDDER TO COMPLETE:</p> <p>CONTRACTORS NAME: <i>Danhill Construction Company</i></p> <p>CONTRACTORS LICENSE NO.: <i>W.V. 001196</i></p> <p>THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FURNISH A COPY OF THEIR CONTRACTORS LICENSE PRIOR TO ISSUANCE OF A PURCHASE ORDER/CONTRACT</p> <p>APPLICABLE LAW</p> <p>THE WEST VIRGINIA STATE CODE, PURCHASING DIVISION RULES AND REGULATIONS, AND THE INFORMATION PROVIDED IN THE "REQUEST FOR QUOTATION" ISSUED BY THE PURCHASING DIVISION IS THE SOLE AUTHORITY GOVERNING THIS PROCUREMENT.</p> <p>ANY INFORMATION PROVIDED IN SPECIFICATION MANUALS, OR ANY OTHER SOURCE, VERBAL OR WRITTEN, WHICH CONTRADICTS OR ALTERS THE INFORMATION PROVIDED FROM THE SOURCES AS DESCRIBED IN THE ABOVE PARAGRAPH IS VOID AND OF NO EFFECT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>REV. 1/2005</p> <p>NOTICE</p>						

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SIGNATURE <i>Robert D. Hill</i>	TELEPHONE <i>304-632-1600</i>	DATE <i>5/23/08</i>
TITLE <i>President</i>	FEBN <i>55-0648251</i>	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: JOHN ABBOTT</p> <p>REQ. NO.: DEFK8212</p> <p>BID OPENING DATE: 04/23/2008</p> <p>BID OPENING TIME: 1:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>304-632-1501</p> <p>PLEASE PRINT OR TYPE NAME OF PERSON TO CONTACT CONCERNING THIS QUOTE:</p> <p>Robert D Hill or Witt Jennings</p>						

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SIGNATURE Robert D. Hill TELEPHONE 304-632-1600 DATE 5/23/08
 TITLE President FEIN 55-0648251 ADDRESS CHANGES TO BE NOTED ABOVE

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***** THIS IS THE END OF RFQ DEFK8212 ***** TOTAL:						\$ 116,150.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Robert D. Hill	304-632-1600	5/23/08
TITLE	FERN	ADDRESS CHANGES TO BE NOTED ABOVE
President	55-0648251	

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1.3 **Specifications:**

A list of the type of new fixtures and location are part of the enclosed documents. Existing conduit, wiring, nipples can be used in the installation of the new fixtures. Should other material, not in place, be required to install the new fixtures, this must be supplied by the contractor. The new lights in the high bay area shall extend down approximately 3'-0" from the ceiling. All new fixtures shall be lamped. The new fixtures shall be Lithonia or an approved equal. If fixtures other than Lithonia are proposed, submittals and lighting analysis of the fixtures must be submitted to the Purchasing Division for approval. The existing fixtures that are removed shall become property of the Agency. The contractor will be provided with an area to store existing fixtures within the facility. The work is to be done from 7:30 a.m. to 4:00 p.m. The hourly labor must be the West Virginia Division of Labor, Prevailing Wage Rate for Mason Co. Installation of fixtures must be completed in a professional workmanship manner.

In addition to the new fixtures in the Paint Spray Area, the existing fixtures shall be re-lamed and the lenses shall be cleaned. Should any boxes (square or octagon) be needed in the Paint Spray Area, these shall be explosion proof. See EXHIBIT B for quantity, description of lighting fixtures and a general layout of the areas in which the fixtures will be installed.

1.4 **Inquiries:**

A mandatory pre-bid date of 4-23-08 at 10:00am has been established. This meeting shall take place at the Pt. Pleasant RSMS Facility. Contractors must attend the pre-bid conference in order to quote the project; Agency reserves the right to accept or reject any proposal (bids). The facility is located North on Route 62, two to three miles from Pt. Pleasant. The mailing address is Pt. Pleasant Facility (RSMS), Rt. 1, Box 333A, Pt. Pleasant, W.V. 25550., Questions regarding the project should be directed to Joe McClung @ (304) 561-6548, fax no. is (304) 561-6344.

The deadline for written inquiries is 4/28/2008; 12:00 Noon. All inquiries of specification clarification must be addressed to:

John Abbott, Senior Buyer
 Purchasing Division
 2019 Washington Street, East
 P.O. Box 50130
 Charleston, WV 25305-0130
 Fax: (304) 558-2455

THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4 (F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.

Line No.	Date: 3-27-08	Exhibit B	Type of Fixture	Quantity	Manufacturer	Description of Lighting Fixtures	Prepared By: Joe McClung, DEF
1			A	14	Lithonia Lighting	TMS8 3 32 SBL WD MVOLT 1/41/2 GEB10IS	Line Comment
2			B	6	Lithonia Lighting	2LB 2 32 MVOLT GEB10IS	
3			C	2	Lithonia Lighting	WS 2 32 A12 MVOLT GEB10IS	
4			D	35	Lithonia Lighting	TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS	
5			DEM	6	Lithonia Lighting	TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS EL55	
6			D/DEM	41	Lithonia Lighting	MSHBAC36	
7			D/DEM	41	Lithonia Lighting	MSHBACF36	
8			E	39	Lithonia Lighting	LB 2 32 MVOLT GEB10IS	
9			F	21	Lithonia Lighting	LB 3 32 MVOLT 13 GEB10IS	
10			G	2	Lithonia Lighting	TWS 42TRT-PE 120	
11			H	23	Lithonia Lighting	TWH400M LPI PE 120	
12			J	6	Lithonia Lighting	TWR1 175M LPI PE 120	
13			K	20	Lithonia Lighting	FSB 654L WGI	
14			K	20	Lithonia Lighting	THSDHB 120	
15			K	20	Lithonia Lighting	THSDSK 120	
16			M	12	Lithonia Lighting	TMS5HB 3 54T5HO SBL WD MVOLT 1/41/2 GEB10PS	
17			MEM	3	Lithonia Lighting	TMS5HB 3 54T5HO SBL WD MVOLT 1/41/2 GEB10PS EL55	
18			M/MEM	15	Lithonia Lighting	MSHBAC36	
19			M/MEM	15	Lithonia Lighting	MSHBACF36	
20			N	3	Lithonia Lighting	HS2 6 54T5H 6	
21			EX/EM	2	Lithonia Lighting	LHQM S W 1 R 120/277	
22			EX/EMR	7	Lithonia Lighting	LHQM S 1 R 120/277 HO	
23			EX	1	Lithonia Lighting	LQM S W 3 R 120/277 EL N M6	
24			EXR	1	Lithonia Lighting	LHQM S W 1 R 120/277 RO	
25			RH	7	Lithonia Lighting	ELA NX HO606	
26			P	6	Lithonia Lighting	VR4 2/26TRT MVOLT LP1	

Job: Pt. Pleasant Facility (RSME) Lighting Project

Location: Pt. Pleasant, WV

Contractor shall provide the following list of lighting fixtures or approved equal.

POINT PLANT MEMORY

C.S.M.S #

C.S.M.S REQUIRT

50/50/20 REFLECTANCE

DESIGN TO SFR

TYPE D

TYPE D TRUSS HB & SHTHO SURF W/ 4VOLT GEOLIPS

8' FIX W/ 4 SHTHO LAMP

TYPE H F50 65% WOI

TYPE H

12' CEILING

30'

30'

30'

30'

20'

12'

12'

7'

200'

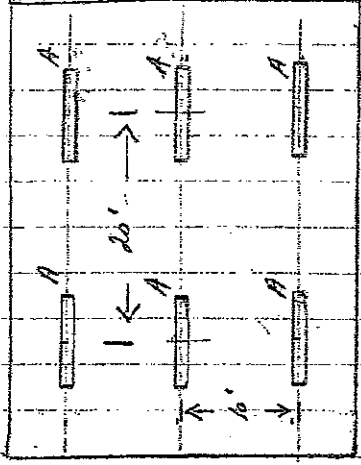
REPLACE EXISTING BY NEW RAY FRET CASE WITH 20 TYPES & F50 65% WOI / TRUSS HB / TRUSS & LAMP IS NO HIGH RAY

25' HIG H.T.

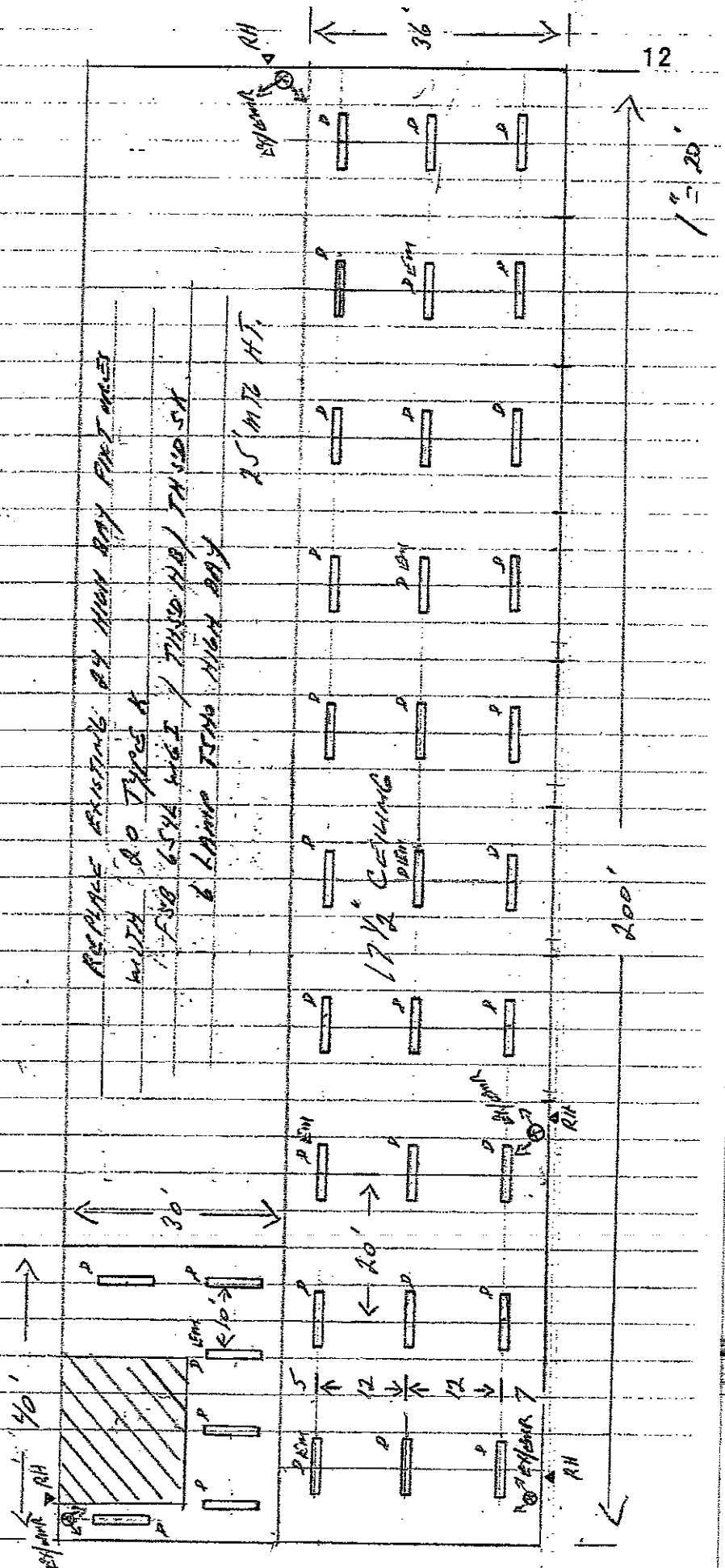
17 1/2' CEILING

12

20'



70'
STORAGE AREA ABOVE
REQUIRE SHOP



POINT PLEASANT ANNEX

17 1/2 MTB HT.

50/50/20 REFERENCE

TYPE 10 TMS 5 HB 2 SYTS HO SOL W/ 4 MVLT 6-8010 PS
8' FIX. W/ 4- SYTS HO LAMP

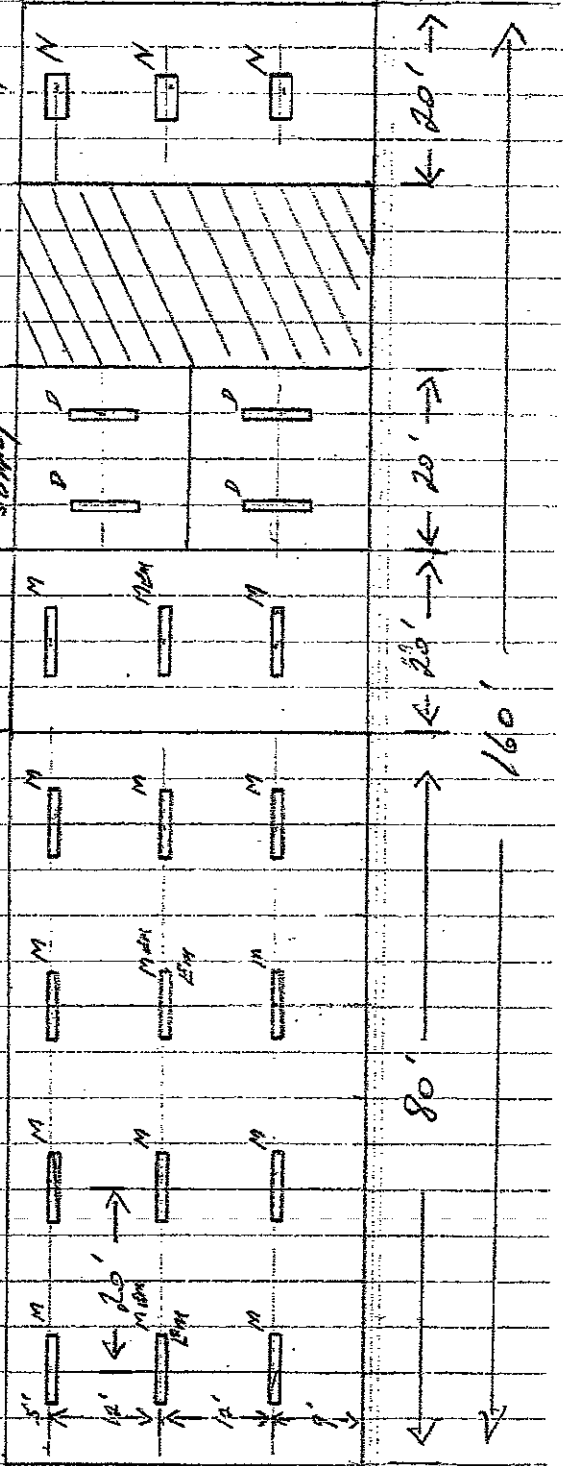
TYPE 11 TMS 5 HB 3 SYTS HO SOL MVLT 1/4 Y2 6-8010 PS
8' FIX. W/ 6- SYTS HO LAMP

N HSR 6 SYTS 6 PARALLEL

Along TRANNS
BODY STOP

BEING CLASS II

TYPED



38'

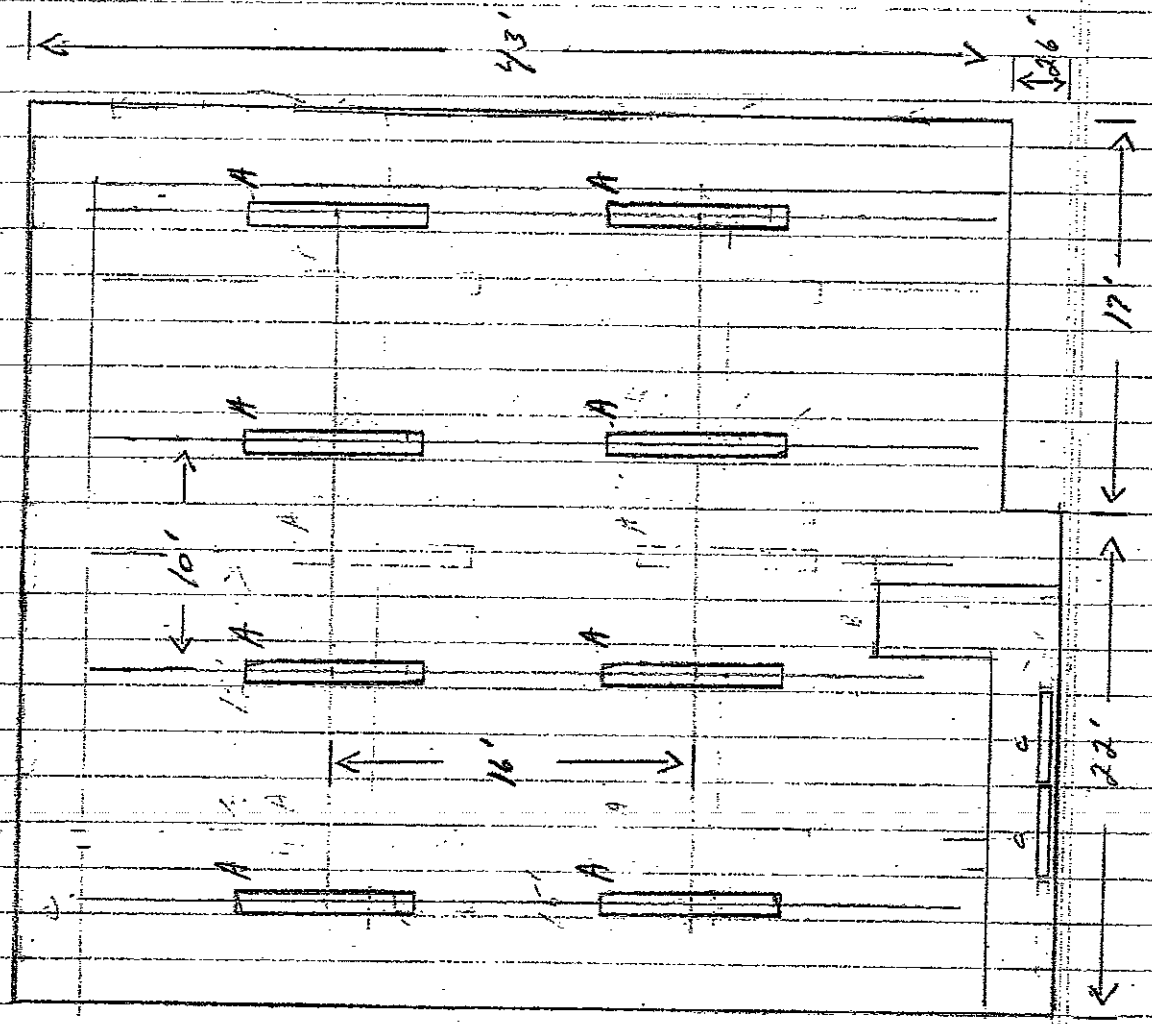
1" = 20'

POINT PRESENT MURRAY
 SUTANZER/INTERMATION
 11A REQUIRED SHOP
 10' CEILING
 TYPE C 6' MTB HT.

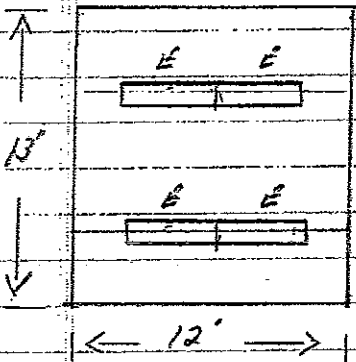
TYPE CATALOG NO.
 A TYPOR 332 SBL W/D M VOLT
 C W/S 2 32 M VOLT GEORIS

80/50/10 REFLECTANCE

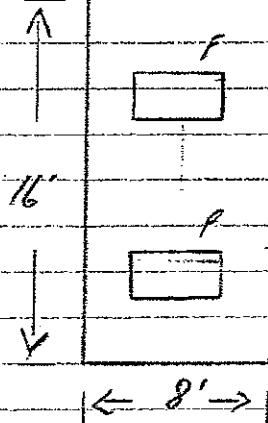
1/8" SCALE



01A SUPPLY OFFICE



#3 OFFICE



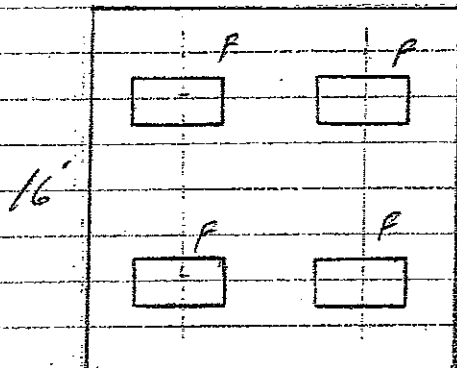
4C TYPE B MENS

4' 2LB 232 MVOLT GEORIS

4B FEMALE 1-TYPE B

4A FEMALE 1-TYPE B

8 PROP. CONTROL ✓



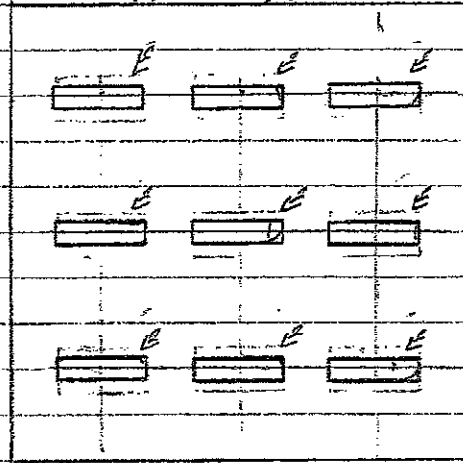
HALLWAYS

TYPE E

12- LB 232 MVOLT GEORIS

20

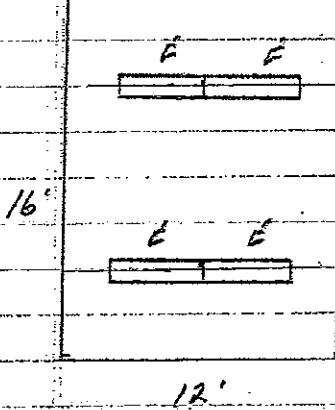
10B BREAK ROOM



13A SMALL ARMS

9- SUPPLY OFFICE

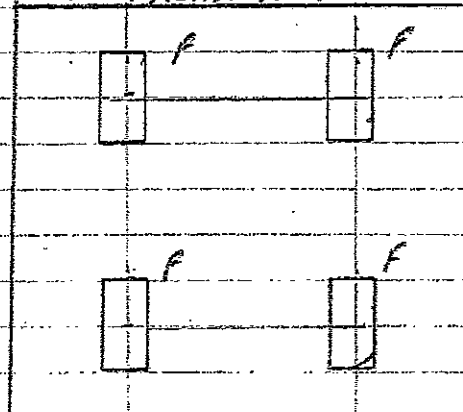
12- SUPPLY OFFICE



12'

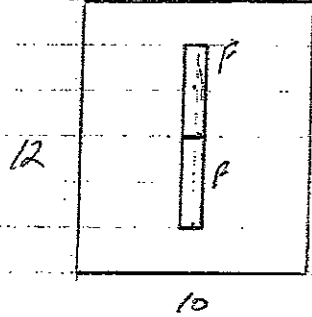
20

10A BREAK ROOM

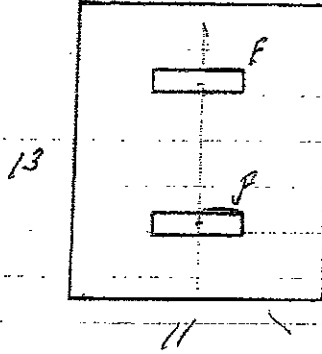


18

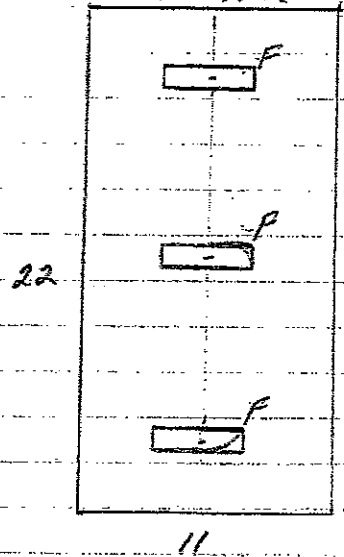
SUN. OFFICE
Copy Room
01A



01A FEMALE
Locker



01A MALE
Locker



EMERGENCY/EXITS

EXR 1- LHM SWIR 120/277 RD

RH 2- EVA NX H0606

EX/EMR 2- LHM SWIR 120/277 HO

EX/EM 2- LHM SWIR 120/277

EX 1- LHM SWIR 120/277 CH

WALL PACKS

G 2 TWS 42TRT MOUNT ENTRANCE

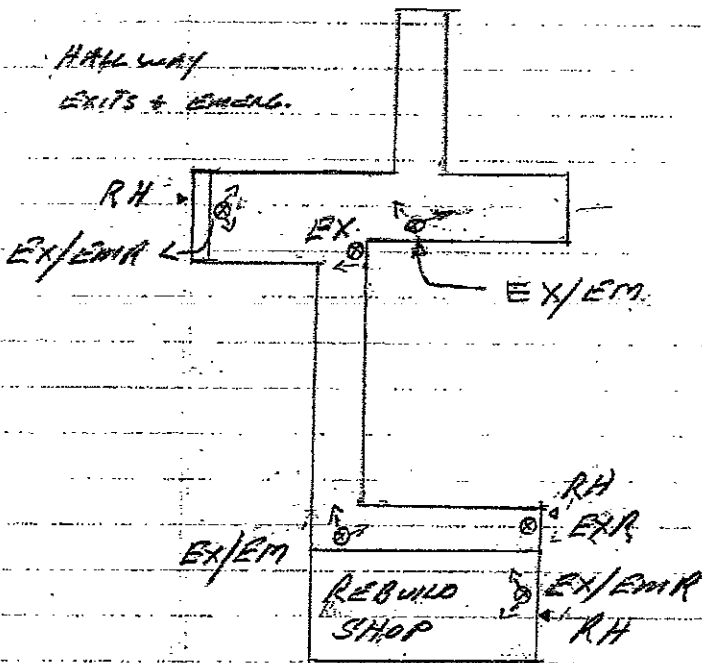
H 23 TWS 400M TB 5 IN FRONT OF BLOB

J 6 TWS 175M TB 3 IN FRONT OF BLOB

2 END OF BLOB

1 BACK OF BLOB

HALLWAY
EXITS & EMERG.





FEATURES & SPECIFICATIONS

INTENDED USE — The MS8 is ideal for low to medium mounting heights where energy efficiency and a shielded or an open optical system is required for high light levels and excellent color. The enhanced performance of the MS8 provides improved vertical and horizontal illumination in aisle or warehouse applications. The MS8 is ideal for retail, warehouse, manufacturing or any application where a high lumen package in a compact fixture design is required.

ATTRIBUTES — Clean and unassuming appearance with shielding provides a decorative approach that provides a powerful lighting package with high light levels.

CONSTRUCTION — Channel and louvers are formed from cold-rolled, 20-gauge steel. Fixture is asbestos-free. Compact sockets feature rotating collars and enclosed contacts. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

Designed for simple installation and servicing, louver assembly hinges remain attached and hinge down to provide easy access into the optical system. Convenient access plate is located on the back of the channel for easy access to the wiring compartment.

FINISH — High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM — Available to meet individual lighting application requirements with variety of optical systems and lamp configurations. The Narrow Distribution (ND) includes a Miro4™ parabolic reflector system to provide high vertical and good horizontal illumination. Ideal for aisle or rack lighting. The Wide Distribution (WD) is ideal for general area lighting at higher mounting heights or where widespread distribution is preferred. Both distributions are available with white straight blade louver for additional shielding and brightness control. Optional upright component softens ceiling appearance and reduces the "cavern effect".

ELECTRICAL SYSTEM — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed and CSA certified. A+ sound rated electronic ballast, AWN, TFN or THHN wire used throughout, rated for required temperatures.

INSTALLATION — A variety of mounting arrangements are available including tong hangers, aircraft cables and stems. Suitable for mounting in continuous row or individual mounting. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

LISTING — UL listed, CSA optional; (consult factory).

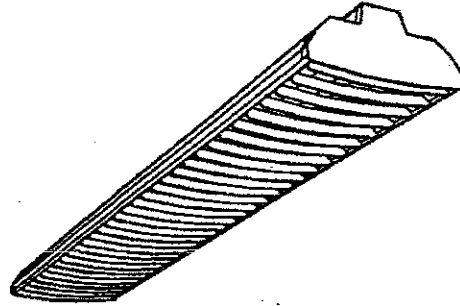
WARRANTY — Guaranteed for one year against mechanical defects in manufacture.

Catalog Number	
TMS8 3 32 SBL WD MVOLT 1/41/2 GEB10IS	
Notes	Type
POINT PLEASANT ARMORY	A

T8 Direct Louver

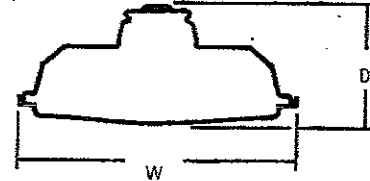
MS8

4' or 8' Lengths
2 or 3 Lamps



Specifications

Length:	48" (1219)
	96" (2438)
Width:	9-3/4" (248)
Depth:	4-1/4" (108)
Weight:	27.8 lbs (12.6 kg)



All dimensions are inches (millimeters). Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: MS8 3 32 SBL WD MVOLT 1/3 GEB10IS

Series	Lamp type	Configuration	Distribution	Voltage	Options
MS8 10% up-light	32 32W T8 (48")	(blank) No louver	ND Narrow	120	1/3 One 3-lamp ballast
MS8ST Solid top		SBL White straight blade louver assembly	WD Wide	277	1/4 One 4-lamp ballast
For tandem double-length unit, add prefix T. Example: TMS8	Number of lamps 2 3 Not included.			347 MVOLT*	GEB T8 instant start electronic ballast, <20% THD
					GEB10IS T8 instant start electronic ballast, <10% THD
					GEB10RS T8 rapid start electronic ballast, <10% THD
					EL Emergency battery pack (nominal 300 lumens)
					GLR Internal fast-blow fuse
					CSA Listed and labeled to comply to Canadian standards
					NOM Listed and labeled to comply with Mexican standards
					1/2 One 2-Lamp Ballast

Accessories

Order as separate catalog number.

MSHBAC_	Adjustable aircraft cable system (specify 36, 72 or 120 inches).
MSHBACF_	Adjustable aircraft cable system with power feed (specify length as 36, 72 or 120 inches).
SQ_	Swivel-stem hanger (specify lengths in 2" increments).
HC36	Chain hangers (1 pair, 36" long).
THM55HB	Tong hangers.
WGMS8Z	4' wire guard, zinc coated.

NOTES:

1 MVOLT120-277 only.

Fluorescent

Sheet #: MS8

WRAP-355

MS8 T8 Direct Louver

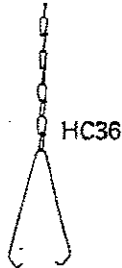
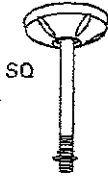
MOUNTING DATA

For unit or row installation, surface or stem mounting.

Unit Installation — Minimum of two hangers required.

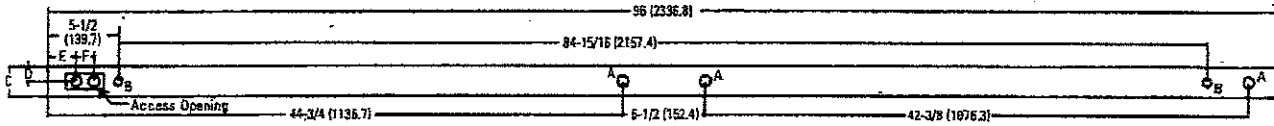
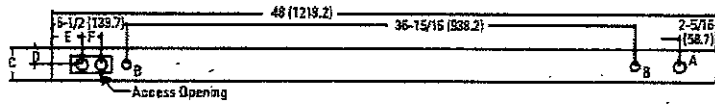
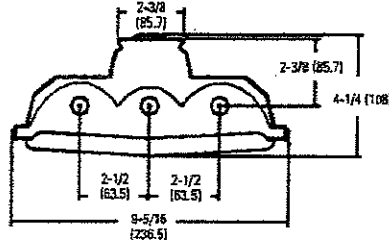
Row Installation — One hanger per channel plus one per row required.

Hanging devices illustrated below.



- A = 7/8" (22) KO
- B = 11/16" (18) KO
- C = 2-3/8" (60)
- D = 1-3/16" (30)
- E = 2-5/16" (59)
- F = 1-3/8" (35)

DIMENSIONS



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

MS8ST 3 32T8 SBL WD

Report LTL 10408

Lumens per lamp - 2850 - Lum. eff. - 81.3%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	90	90	90
1	89	85	81	86	83	80	79	77	74
2	81	74	68	78	72	67	69	65	61
3	73	65	58	71	64	57	61	56	52
4	67	57	50	65	56	50	54	49	44
5	62	51	44	60	50	44	49	43	38
6	57	46	39	56	45	39	44	38	33
7	53	42	35	51	41	34	40	34	29
8	49	38	31	48	38	31	37	31	26
9	46	35	28	45	35	28	34	28	24
10	43	32	26	42	32	26	31	25	21

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1915	22.4	27.5
0-40	3141	35.7	45.2
0-60	5554	65.0	79.9
0-90	1491	18.4	20.1
90-180	0	0.0	0.0
0-180	6955	81.3	100.0



Lithonia Lighting
 Industrial
 One Lithonia Way, Conyers, GA 30012
 Phone: 800-858-7763 Fax: 770-981-8141
 www.lithonia.com

FEATURES

- Low-profile wraparound is suitable for offices, schools and corridors. Matches CB in appearance.
- Acrylic, prismatic diffuser with sonic-welded injection-molded luminous ends.
- White enamel endplates — optional appliques available.
- Linear side prisms control brightness, pyramidal bottom prisms minimize lamp image.
- Continuous, interlocking diffuser support prevents accidental opening and simplifies maintenance.
- For surface or stem mounting (2' and 4' only), individual or row installation. Snap-in aligners permit row mounting without tools.
- Available in tandem-wired lengths.
- High-gloss, baked white enamel finish.
- Guaranteed for one year against mechanical defects in manufacture.

SPECIFICATIONS

BALLAST — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed, CSA-certified ballast is standard. Sound rated A. Standard combinations are CBM approved and conform to UL 935.

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout. Rated for required temperatures.

MATERIALS — Metal parts are die-formed from code gauge steel. Diffuser is 100% acrylic. No asbestos is used in this product.

FINISH — Five-stage, iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards (see Options).

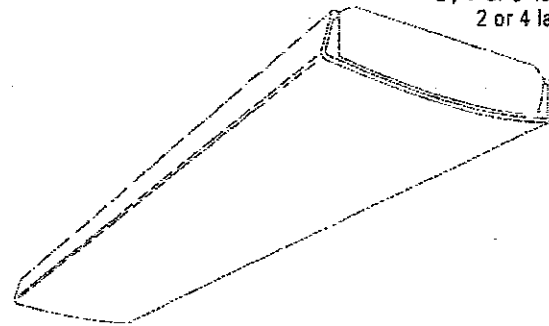
Catalog Number	Type
2LB 2 32 MVOLT GEB10IS	B 19
POINT PLEASANT ARMORY	

Low-Profile Wraparound

LB

Wide Body

2', 4' or 8' length
2 or 4 lamps



ENERGY

- Luminaire Efficacy Rating (LER) and Annual Energy Cost:
Four-lamp LER.FW = 71. Annual Energy Cost = \$3.38.
Based on 32W T8 lamp, 2850 lumens, and energy-saving electronic ballast. Ballast factor = .88, input watts = 108.
Calculated in accordance with NEMA standard LE-5.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

LB 4 32

Report LTL 5614 - Lumens per lamp = 2900

S/MH (along) 1.2 (across) 1.3

Coefficient of Utilization

Ceiling Wall	80%			70%			50%			0%
	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	89	89	89	86	86	86	80	80	80	68
1	81	78	75	78	75	73	71	69	67	58
2	75	69	64	72	67	63	63	59	56	50
3	69	62	56	66	60	55	57	52	49	43
4	63	55	49	61	54	48	51	46	42	38
5	58	49	43	56	48	42	45	40	36	33
6	54	44	38	52	43	37	41	36	32	29
7	50	40	34	48	39	33	37	32	28	25
8	46	36	30	44	35	29	33	28	24	22
9	42	32	26	41	31	26	30	25	21	19
10	39	29	23	38	29	23	27	22	19	16

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2376	20.5	27.0
0-40	3914	33.7	44.1
0-60	6499	56.0	73.7
0-90	7883	68.0	89.4
90-180	932	8.0	10.6
0-180	8815	76.0	100.0

LB 4 40

Report LTL 5450 -- Lumens per lamp = 2925

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling Wall	80%			70%			50%			0%
	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	84	84	84	82	82	82	76	76	76	65
1	78	74	72	75	72	70	68	66	64	56
2	71	66	62	69	64	60	60	57	54	48
3	66	59	54	64	57	53	54	50	47	42
4	61	53	47	59	52	46	49	44	41	37
5	56	47	41	54	46	40	44	39	35	32
6	52	43	37	50	42	36	40	35	31	28
7	48	38	32	46	37	32	36	31	27	24
8	44	34	29	42	34	28	32	27	24	21
9	40	31	25	39	30	25	29	24	21	18
10	38	28	23	36	28	22	26	21	18	16

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2337	20.0	27.6
0-40	3856	33.0	45.5
0-60	6362	54.4	75.1
0-90	7624	65.2	90.0
90-180	846	7.2	10.0
0-180	8470	72.4	100.0

LB Low-Profile Wraparound, Wide Body

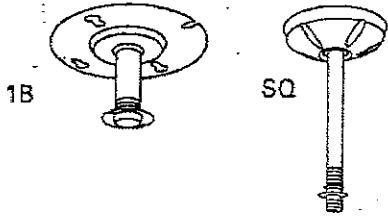
MOUNTING DATA

For unit or row installation, surface or stem mounting. Stem mounting not available on TLB units.

Individual installation — Two single-stem hangers required.

Row installation — One hanger per fixture plus one per row required.

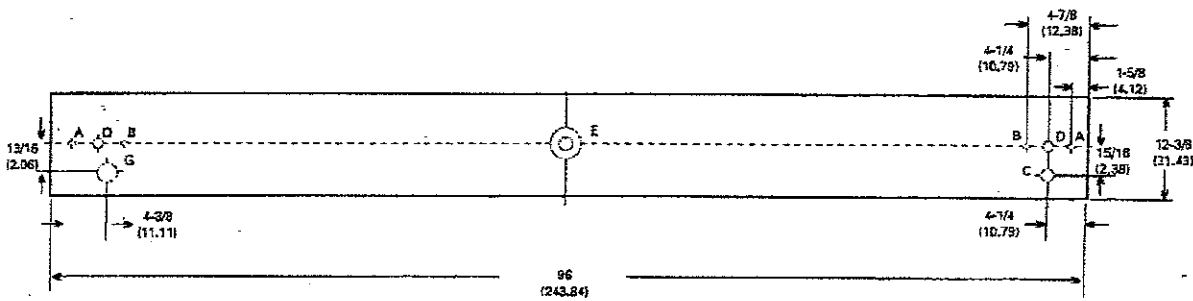
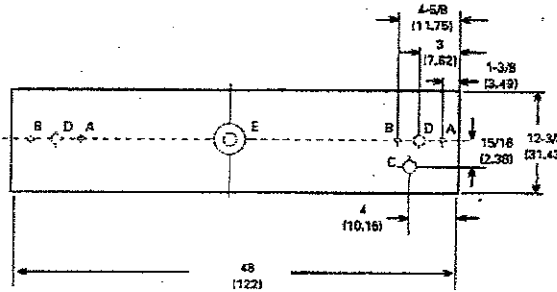
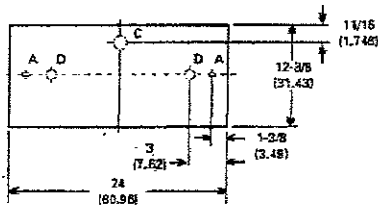
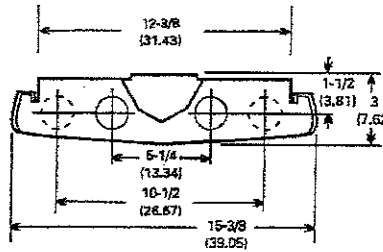
See ACCESSORIES below for hanging devices.



- A = 1/4 x 1/2 (1.635 x 1.27) Oval Hole
- B = 1/4 x 1/2 (1.635 x 1.27) K.O.
- C = 7/8 (2.22) Dia. K.O.
- D = 11/16 (1.74) Dia. K.O.
- E = 2 (5.08) Dia. K.O. and 7/8 (2.22) Dia. K.O.
- G = 1-1/8 (2.85) Dia. K.O.

DIMENSIONS

Inches (centimeters). Subject to change without notice.



ORDERING INFORMATION

Example: LB 4 32 120 GEB

Series	Number of lamps	Lamp Type	Voltage	Options
LB 4 lamps, 15-3/8" wide	2, 4 Not included	17 17W T8 (24")	120, 277, 347 Others available MVOLT	ES Energy-saving ballasts (40W lamps only).
2LB 2 lamps, 15-3/8" wide		20 20W TS T12 (24")		GEB Electronic ballasts, ≤ 20% THD.
For tandem double-length unit, add prefix T. Example: TLB		32 32W T8 (48")		GEB10 Electronic ballast, ≤ 10% THD.
		40 40W T12 (48")		EI Emergency battery pack (nominal 300 lumens "See Life Safety Section").
Accessories				
Order as separate item				
SQ Swivel-stem hanger (specify in 2" increments).				
1B Ceiling-spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).				
LB4W Walnut endplate appliques, one pair.				
LB4T Teak endplate appliques, one pair.				
LB4B Textured, black endplate appliques, one pair.				
				GLR Internal fast-blow fuse.
				GMF Internal slow-blow fuse.
				RIF1 Radio interference filter (1 per fixture).
				LSC Lens safety clips (2 per fixture).
				CSA Listed and labeled to comply with Canadian Standards.
				NOM Listed and labeled to comply with Mexican Standards.
				SSR Specular silver interior finish (95% reflective).
				GEB10IS Electronic Ballast <10% THD; Instant Start

LBW

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LBW.P65

LITHONIA LIGHTING
COMMERCIAL & INDUSTRIAL FLUORESCENT LIGHTING
P.O. BOX A, CONYERS, GEORGIA 30012, TELEPHONE 770-922-9000, FAX 770-860-3108

FEATURES

- Available in 2', 3' and 4' lengths.
- Trim, contemporary design.
- High-gloss white enamel PAF finish standard.
- Welded 20-gauge steel construction.
- Convenience outlet and multilevel switching available.
- Designed for easy installation and maintenance.
- Ideal for stairwells, vanities and lavatories.
- Guaranteed for one year against mechanical defects in manufacture.

SPECIFICATIONS

BALLAST — Thermally-protected, Class P, HPF, non-PCB, UL listed, CSA certified ballast is standard. Sound rated A.

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

MATERIALS — Parts are die-formed from code-gauge steel. Lens is 100% virgin acrylic, #12 pattern.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Standard finish is PAF high-gloss, baked white enamel.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards (see Options).

Specifications subject to change without notice.

ENERGY

- Luminaire Efficacy Rating (LER) and Annual Energy Cost: Two-lamp LER.FW = 54. Annual Energy Cost = \$4.44. Based on 32W T8 lamp, 2850 lumens and energy saving electronic ballast. Ballast factor = .88, input watts = 56.

Calculated in accordance with NEMA standard LE-5.

Type: C

Catalog Number: **WS 2 32 A12 MVOLT GEB10IS**
POINT PLEASANT ARMORY

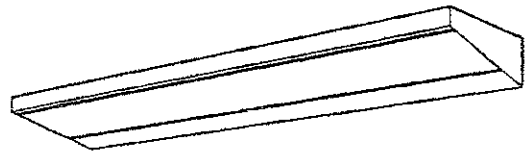
Surface Commercial

WS

Standard Wall Bracket

2', 3' or 4' Lengths

1 or 2 Lamps



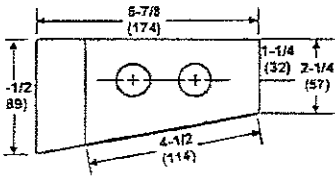
PHOTOMETRICS

Full photometric reports available upon request.

WS Wall Bracket, Standard

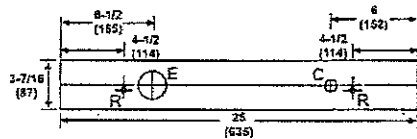
22

MOUNTING DATA



DIMENSIONS

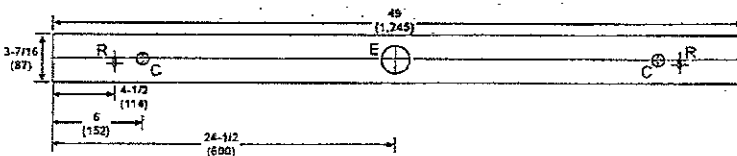
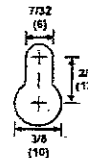
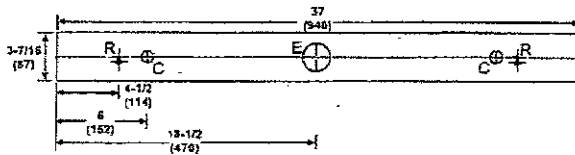
Inches (millimeters). Subject to change without notice.



C = 7/8 (22) Dia. K.O.

E = 2(51) Dia. K.O.

R = Keyhole Slot



ORDERING INFORMATION

Example: WS 2 32 A12 120 GEB

Series	Lamp type	Diffuser type	Voltage	Options
WS Standard Wall Bracket	17 17W T8 (24") 20 20W T12 (24") 25 25W T8 (36") 30 30W T12 (36") 32 32W T8 (48") 40 40W T12 (48")	A12 #12 pattern acrylic A12125 #12 pattern acrylic, .125" thick A19 #19 pattern acrylic, .156" thick Consult Lithonia Lighting sales representative for other shielding options.	120, 277, 347, MVOLT ¹ Others available.	CO Grounded convenience outlet, 120V only (lower right) ² S1 Pull-chain switch; installed bottom left; on/off operation of all lamps only (120V only) ² S4 Pull-chain switch; four position — front only, rear only, all on, all off; installed bottom left (120V only) ² GEB Electronic ballasts, ≤ 20% THD GEB10IS Electronic ballasts, ≤ 10% THD, Instant Start GEB10RS Electronic ballasts, ≤ 10% THD, Rapid Start ES Energy saving ballasts GLR Internal fast-blow fuse EL Emergency battery pack (nominal 300 lumens); see Life Safety section CSA Listed and labeled to comply with Canadian Standards NOM Listed and labeled to comply with Mexican Standards
Number of lamps	1, 2 Not included.			

NOTES:

- 1 MVOLT available with GEB10IS only.
- 2 For optional locations, consult factory.

WS

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ws.p65

LITHONIA LIGHTING
COMMERCIAL & INDUSTRIAL FLUORESCENT LIGHTING
P O BOX 4, CONYERS, GEORGIA 30012, TELEPHONE 770-922-9000, FAX 770-929-8789
www.lithonia.com - IN CANADA: 1100 50TH AVE., LACHINE, QUEBEC H8T 2V3



FEATURES & SPECIFICATIONS

INTENDED USE

Intended for use in retail stores, warehouses and manufacturing applications where high lumen package in a compact fixture is required.

ATTRIBUTES

Product is specifically designed for operation with T5HO lamps.

CONSTRUCTION

Channel and louvers are formed from cold-rolled, 20-gauge steel. No asbestos is used in this product.

End caps include knockouts for through wiring and fixture attachment in row mounting applications. Compact sockets feature rotating collars and enclosed contacts.

Designed for simple servicing, louver assembly hinges remain attached and hinge down providing easy access into the optical system.

FINISH

High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM

The Narrow Distribution (ND) includes a Miro4™ parabolic reflector system to provide high vertical and good horizontal illumination for aisle or rack lighting. The Wide Distribution (WD) is ideal for general area lighting at higher mounting heights or where widespread distribution is preferred. Both distributions are available with white straight blade louver for additional shielding and brightness control. Uplight component softens ceiling appearance to reduce the "cavern effect".

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, A+ sound rated electronic ballast. AWM TFM or THHN wire used throughout, rated for required temperatures. All ballasts are available for use in standard ambient temperatures. Consult factory for elevated ambient temperature applications.

INSTALLATION

A variety of mounting arrangements is available including tong hangers, aircraft cables and stems. Suitable for mounting in continuous row or individual mounting. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

LISTING

UL listed. CSA optional; (consult factory)

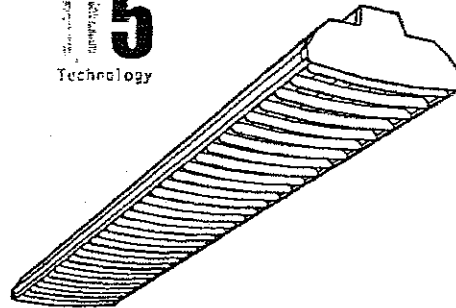
WARRANTY

Guaranteed for one year against mechanical defects in manufacturing.

Catalog Number TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS	
Notes POINT PLEASANT ARMORY	Type D 23

T5 Fluorescent High Bay – Louver

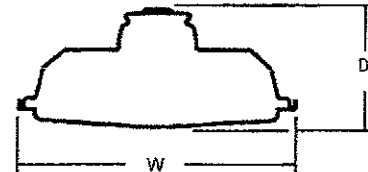
MS5HB



4' or 8' Lengths
2, 3 Lamps

Specifications

Length:	46-1/16" (1170)
	92-1/8" (2340)
Width:	9-3/4" (248)
Depth:	4-1/4" (108)
Weight:	27.8 lbs (12.6 kg)



All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

Example: TMS5HB 3 54T5HO SBL ND MVOLT GEB10PS

Series	Lamp type	Configuration	Distribution	Voltage	Options
MS5HB T5 low-profile direct/indirect	2BT5 28W T5 (46") 54T5HO 54W T5HO (46")	SBL White straight blade louver assembly	ND Narrow WD Wide	MVOLT ² 347 480 ³	1/3 One 3-lamp ballast ³ 1/4 One 4-lamp ballast ³ GEB10PS Electronic program rapid start ballast, <10% THD GLR Internal fast-blow fuse ⁴ GMF Internal slow-blow fuse ⁴ EL55 Emergency battery pack (nominal 390-700 lumens) ⁴ CSA CSA Certified
MS5HBST T5 low-profile solid top ¹					
For tandem double-length unit, add prefix T. Example: TMS5HB	Number of lamps 2, 3 Not included	Accessories Order as separate catalog number. MSHBAC_ Adjustable aircraft cable support (non-feed), (specify length as 36, 72 or 120 inches). MSHBACF_ Aircraft cable feed and support, (specify length as 36, 72 or 120 inches). THMS5HB Tong hanger. SQ_ Swivel stem hanger (specify length in 2" increments) HC36 Chain hanger - 36". WGM55HBZ 4' wire guard, zinc coated.			

Notes

- 1 Available in 2 lamp only.
- 2 MVOLT (120-277 volt).
- 3 F54T5HO only.
- 4 Specify voltage.

Fluorescent

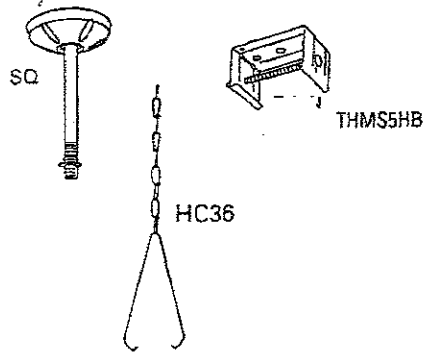
Sheet #: MS5HB-LV

WRAP-353

MS5HB T5 Fluorescent High Bay – Louver

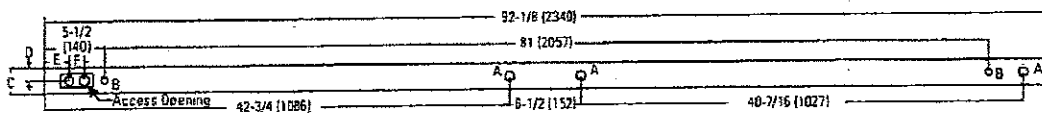
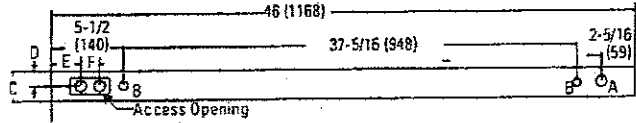
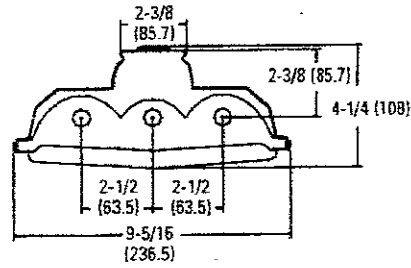
INSTALLATION DATA

For unit or row installation, surface or stem mounting.
 Unit installation — Minimum of two hangers required.
 Row installation — One hanger per channel plus one per row required.
 Hanging devices illustrated below.



DIMENSIONS

- A = 7/8" (22) KD
- B = 1 1/16" (18) KD
- C = 2-3/8" (60)
- D = 1-3/16" (30)
- E = 2-5/16" (59)
- F = 1-3/8" (35)



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

MS5HB 3 54T5HO SBL ND
 Report: LTL10380
 LUMENS PER LAMP: 4450
 Luminaire Efficiency: 93.0%

MS5HB 3 54T5HO SBL WD
 Report: LTL10773
 LUMENS PER LAMP: 4400
 Luminaire Efficiency: 88.3%

MS5HBST 2 54T5HO SBL ND
 Report: LTL10989
 LUMENS PER LAMP: 4400
 Luminaire Efficiency: 98.8%

ROR	Coefficients of Utilization									
	pc	80%			20%			30%		
		70%	50%	30%	50%	30%	10%	50%	30%	10%
0	110	110	110	102	102	102	97	97	97	
1	102	98	95	91	89	86	87	85	83	
2	94	87	82	82	77	74	78	75	72	
3	87	78	71	73	68	64	70	66	62	
4	80	70	63	66	60	56	64	59	55	
5	74	64	56	60	54	50	58	53	49	
6	69	58	51	55	49	44	53	48	44	
7	65	53	46	51	45	40	49	44	40	
8	61	49	42	47	41	36	46	40	36	
9	57	45	38	44	37	33	42	37	33	
10	54	42	35	41	35	31	40	34	30	

ROR	Coefficients of Utilization									
	pc	80%			20%			30%		
		70%	50%	30%	50%	30%	10%	50%	30%	10%
0	103	103	103	94	94	94	88	88	88	
1	94	90	86	82	79	77	77	75	73	
2	86	78	72	72	67	63	67	64	60	
3	78	69	61	63	57	53	59	55	51	
4	71	61	53	56	50	45	53	48	43	
5	65	54	46	50	44	39	47	42	38	
6	60	49	41	45	39	34	43	37	33	
7	56	44	36	41	35	30	39	33	29	
8	52	40	33	37	31	27	36	30	26	
9	49	37	30	34	28	24	33	27	23	
10	46	34	27	32	26	22	30	25	21	

ROR	Coefficients of Utilization									
	pc	80%			20%			30%		
		70%	50%	30%	50%	30%	10%	50%	30%	10%
0	118	118	118	110	110	110	105	105	105	
1	108	103	99	97	94	91	93	91	88	
2	98	91	84	85	80	76	82	78	74	
3	90	80	72	75	69	64	73	67	63	
4	83	71	63	67	60	55	65	59	54	
5	76	64	55	60	53	48	59	52	47	
6	70	57	49	55	47	42	53	47	42	
7	65	52	44	50	43	37	49	42	37	
8	61	48	40	46	39	34	45	38	33	
9	57	44	36	42	35	30	41	35	30	
10	53	41	33	39	32	28	38	32	27	

Zone	Zonal Lumen Summary		
	Lumens	% Lamp	% Fixture
0° - 30°	4702	35.2	37.9
0° - 40°	7005	52.5	56.4
0° - 60°	10383	77.8	83.6
0° - 90°	12005	89.9	96.6
90° - 180°	417	3.1	3.4
0° - 180°	12422	93.0	100.0

Zone	Zonal Lumen Summary		
	Lumens	% Lamp	% Fixture
0° - 30°	2883	21.8	24.7
0° - 40°	4689	35.5	40.2
0° - 60°	8319	63.0	71.3
0° - 90°	10614	80.4	91.0
90° - 180°	1046	7.9	9.0
0° - 180°	11660	88.3	100.0

Zone	Zonal Lumen Summary		
	Lumens	% Lamp	% Fixture
0° - 30°	2599	29.5	29.9
0° - 40°	4162	47.3	47.9
0° - 60°	7064	80.3	81.2
0° - 90°	8696	98.8	100.0
90° - 180°	0	0.0	0.0
0° - 180°	8696	98.8	100.0



Lithonia Lighting
 Acuity Lighting Group, Inc.
 Fluorescent
 One Lithonia Way, Conyers, GA 30012
 Phone: 800-858-7763 Fax: 770-929-8789
 In Canada: 160 avenue Labrosse, Point-Claire, P.Q. H9R 1A1
 www.lithonia.com



FEATURES & SPECIFICATIONS

INTENDED USE

Intended for use in retail stores, warehouses and manufacturing applications where high lumen package in a compact fixture is required.

ATTRIBUTES

Product is specifically designed for operation with T5HO lamps.

CONSTRUCTION

Channel and louvers are formed from cold-rolled, 20-gauge steel. No asbestos is used in this product.

End caps include knockouts for through wiring and fixture attachment in row mounting applications. Compact sockets feature rotating collars and enclosed contacts.

Designed for simple servicing, louver assembly hinges remain attached and hinge down providing easy access into the optical system.

FINISH

High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM

The Narrow Distribution (ND) includes a Miro4™ parabolic reflector system to provide high vertical and good horizontal illumination for aisle or rack lighting. The Wide Distribution (WD) is ideal for general area lighting at higher mounting heights or where widespread distribution is preferred. Both distributions are available with white straight blade louver for additional shielding and brightness control. Uplight component softens ceiling appearance to reduce the "cavern effect".

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, A+ sound rated electronic ballast. AWM TFM or THHN wire used throughout, rated for required temperatures. All ballasts are available for use in standard ambient temperatures. Consult factory for elevated ambient temperature applications.

INSTALLATION

A variety of mounting arrangements is available including tong hangers, aircraft cables and stems. Suitable for mounting in continuous row or individual mounting. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

LISTING

UL listed, CSA optional; (consult factory)

WARRANTY

Guaranteed for one year against mechanical defects in manufacturing.

Catalog Number

TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS EL55

Notes

POINT PLEASANT ARMORY

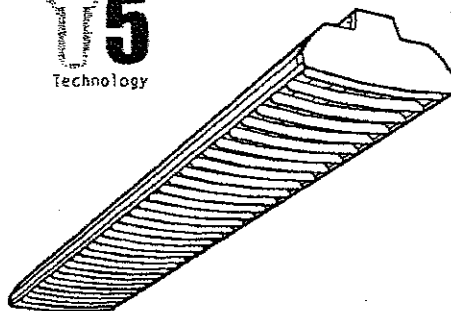
Type

DEM

25

T5 Fluorescent High Bay - Louver

MS5HB



4' or 8' Lengths
2, 3 Lamps

Specifications

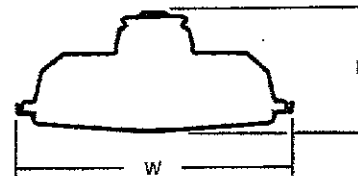
Length: 46-1/16" (1170)

92-1/8" (2340)

Width: 9-3/4" (248)

Depth: 4-1/4" (108)

Weight: 27.8 lbs (12.6 kg)



All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

Example: TMS5HB 3 54T5HO SBL ND MVOLT GEB10PS

SBL					
Series	Lamp type	Configuration	Distribution	Voltage	Options
MS5HB T5 low-profile direct/indirect	28T5 28W T5 (46") 54T5HO 54W T5HO (46")	SBL White straight blade louver assembly	ND Narrow WD Wide	MVOLT ² 347 480 ³	1/3 One 3-lamp ballast ³ 1/4 One 4-lamp ballast ³ GEB10PS Electronic program rapid start ballast, <10% THD GLR Internal fast-blow fuse ⁴ GMF Internal slow-blow fuse ⁴ EL55 Emergency battery pack (nominal 390-700 lumens) ¹ CSA CSA Certified
MS5HBST T5 low-profile solid top ¹					
For tandem double-length unit, add prefix T. Example: TMS5HB	Number of lamps 2, 3 Not included	Accessories Order as separate catalog number.			
		MSHBAC_ Adjustable aircraft cable support (non-feed), (specify length as 36, 72 or 120 inches).			
		MSHBACF_ Aircraft cable feed and support, (specify length as 36, 72 or 120 inches).			
		THMS5HB Tong hanger.			
		SQ_ Swivel stem hanger (specify length in 2" increments)			
		HC36 Chain hanger - 36".			
		WGMS5HBZ 4' wire guard, zinc coated.			

Notes

- 1 Available in 2 lamp only.
- 2 MVOLT (120-277 volt).
- 3 F54T5HO only.
- 4 Specify voltage.

Fluorescent

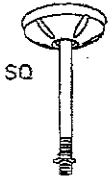
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WRAP-353

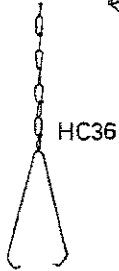
MS5HB T5 Fluorescent High Bay – Louver

MOUNTING DATA

For unit or row installation, surface or stem mounting.
 Unit installation — Minimum of two hangers required.
 Row installation — One hanger per channel plus one per row required.
 Hanging devices illustrated below.



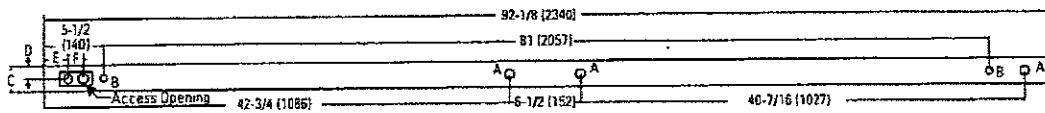
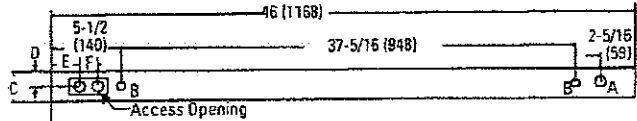
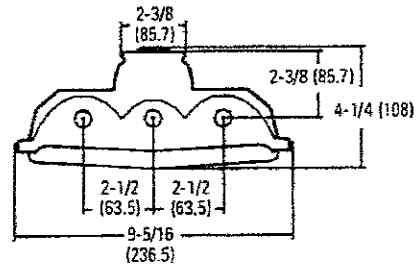
THMS5HB



HC36

DIMENSIONS

- A = 7/8" (22) KO
- B = 1 1/16" (18) KO
- C = 2-3/8" (60)
- D = 1-3/16" (30)
- E = 2-5/16" (59)
- F = 1-3/8" (35)



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request

MS5HB 3 54T5HO SBL ND
 Report: LTL10380
 LUMENS PER LAMP:4450
 Luminaire Efficiency:93.0%

MS5HB 3 54T5HO SBL WD
 Report: LTL10773
 LUMENS PER LAMP:4400
 Luminaire Efficiency:88.3%

MS5HBST 2 54T5HO SBL ND
 Report: LTL10989
 LUMENS PER LAMP:4400
 Luminaire Efficiency:98.8%

ROR	Coefficients of Utilization								
	80%			50%			30%		
	pf	pc	pw	pf	pc	pw	pf	pc	pw
0	110	110	110	102	102	102	97	97	97
1	102	98	95	91	89	86	87	85	83
2	94	87	82	82	77	74	78	75	72
3	87	78	71	73	68	64	70	66	62
4	80	70	63	66	60	56	64	59	55
5	74	64	56	60	54	50	58	53	49
6	69	58	51	55	49	44	53	48	44
7	65	53	46	51	45	40	49	44	40
8	61	49	42	47	41	36	46	40	36
9	57	45	38	44	37	33	42	37	33
10	54	42	35	41	35	31	40	34	30

ROR	Coefficients of Utilization								
	80%			50%			30%		
	pf	pc	pw	pf	pc	pw	pf	pc	pw
0	103	103	103	94	94	94	88	88	88
1	94	90	86	82	79	77	77	75	73
2	86	78	72	72	67	63	67	64	60
3	78	69	61	63	57	53	59	55	51
4	71	61	53	56	50	45	53	48	43
5	65	54	46	50	44	39	47	42	38
6	60	49	41	45	39	34	43	37	33
7	56	44	36	41	35	30	39	33	29
8	52	40	33	37	31	27	36	30	26
9	49	37	30	34	28	24	33	27	23
10	46	34	27	32	26	22	30	25	21

ROR	Coefficients of Utilization								
	80%			50%			30%		
	pf	pc	pw	pf	pc	pw	pf	pc	pw
0	118	118	118	110	110	110	105	105	105
1	108	103	99	97	94	91	93	91	88
2	98	91	84	85	80	76	82	78	74
3	90	80	72	75	69	64	73	67	63
4	83	71	63	67	60	55	65	59	54
5	76	64	55	60	53	48	59	52	47
6	70	57	49	55	47	42	53	47	42
7	65	52	44	50	43	37	49	42	37
8	61	48	40	46	39	34	45	38	33
9	57	44	36	42	35	30	41	35	30
10	53	41	33	39	32	28	38	32	27

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	4702	35.2	37.9
0° - 40°	7005	52.5	56.4
0° - 60°	10383	77.8	83.5
0° - 90°	12005	89.9	96.6
90° - 180°	417	3.1	3.4
0° - 180°	12422	93.0	100.0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	2883	21.8	24.7
0° - 40°	4689	35.5	40.2
0° - 60°	8319	63.0	71.3
0° - 90°	10614	80.4	91.0
90° - 180°	1046	7.9	9.0
0° - 180°	11660	88.3	100.0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	2599	29.5	29.9
0° - 40°	4162	47.3	47.9
0° - 60°	7054	80.3	81.2
0° - 90°	8696	98.8	100.0
90° - 180°	0	0.0	0.0
0° - 180°	8696	98.8	100.0

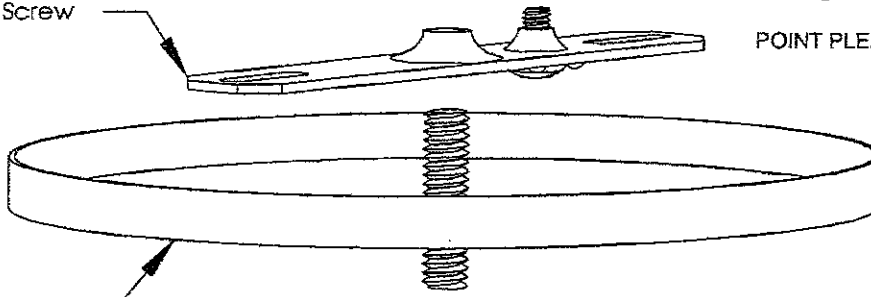


Lithonia Lighting
 Acuity Lighting Group, Inc.
 Fluorescent
 One Lithonia Way, Conyers, GA 30012
 Phone: 800-858-7763 Fax: 770-925-8789
 In Canada: 160 avenue Labrosse, Point-Claire, P.Q. H9R 1A1
 www.lithonia.com

Bracket Bar w/ 1" 1/4-20
Stud & Ground Screw

Type: D/DEM
Catalog Number: MSHBAC36
MSHBACF36
POINT PLEASANT ARMORY

27



Ceiling Canopy
Q5-14-W

Stop Sleeve

CC-1420



1/16" Galv. Cable

Cable Gripper
15Z-GA

Pan Hed Screw
10-32



Cable Length	Griplock P/N	Lithonia P/n	Lithonia CI Code
36"	P-LTH-GA-36-NPF	MSHBAC36	773806
72"	P-LTH-GA-72-NPF	MSHBAC72	773787
120"	P-LTH-GA-120-NPF	MSHBAC120	773788

PROPRIETARY AND CONFIDENTIAL
This drawing and these specifications are the exclusive property of REUTLINGER USA INC. and shall not be divulged, reproduced, copied, or used as the basis for the manufacture or sale of apparatus without the express written authorization of REUTLINGER USA INC.

REF: _____ DATE: 04/04/03

MATERIAL: NA

SCALE: 1:1 FILE: P-LTH-GA-XXX-NPF

GRIPLOCK SYSTEMS
410 Palm Ave. Loft A18, Carpinteria, CA 93013
Phone (805) 566-0064 Fax 9805) 566-0065

GRIPLOCK P/N: P-LTH-GA-XXX-NPF-
CUSTOMER P/N: MSHBACXXX

DESCRIPTION: Lithonia 15Z-GA/CC-1420
Non Powerfeed Cable Assv set

FEATURES

- Low-profile wraparound is suitable for offices, schools and corridors. Matches CB in appearance.
- Acrylic, prismatic diffuser with sonic-welded injection-molded luminous ends.
- White enamel endplates — optional appliques available.
- Linear-side prisms control brightness, pyramidal bottom prisms minimize lamp image.
- Continuous, interlocking diffuser support prevents accidental opening and simplifies maintenance.
- For surface or stem mounting, individual or row installation. Snap-in aligners permit row mounting without tools.
- Available in tandem-wired lengths.
- High-gloss, baked white enamel finish.
- Guaranteed for one year against mechanical defects in manufacture.

SPECIFICATIONS

BALLAST — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed, CSA-certified ballast is standard. Sound rated A. Standard combinations are CBM approved and conform to UL 935.

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

MATERIALS — Metal parts are die-formed from code gauge steel. Diffuser is 100% acrylic. No asbestos is used in this product.

FINISH — Five-stage, iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards (see Options).

Specifications subject to change without notice.

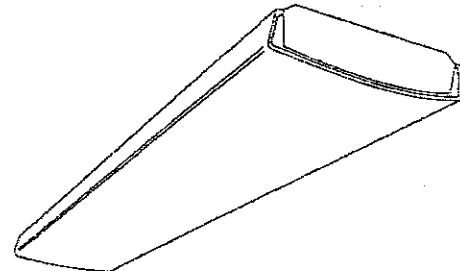
Type: E
Catalog Number: LB 2 32 MVOLT GEB10IS
POINT PLEASANT ARMORY

Low-Profile Wraparound

LB

Narrow Body

2', 4' or 8' length
2 lamps



ENERGY

- Luminaire Efficacy Rating (LER) and Annual Energy Cost:
Two-lamp LER.FW = 62. Annual Energy Cost = \$3.63.
Based on 32W T8 lamp, 2850 lumens, and energy-saving electronic ballast. Ballast factor = .88, input watts = 61.
Calculated in accordance with NEMA Standard LE-5.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

LB 2 32

Report LTL 5047 — Lumens per lamp = 3050

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%			0%
	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	87	87	87	83	83	83	77	77	77	63
1	79	76	72	76	73	70	67	65	63	53
2	73	67	62	69	64	60	60	56	53	45
3	67	60	54	64	57	52	54	49	46	39
4	62	53	47	59	51	46	48	43	40	34
5	57	48	41	54	46	40	43	38	34	30
6	52	43	37	50	42	36	39	34	30	26
7	48	39	32	46	37	32	35	30	26	23
8	44	35	29	43	34	28	32	27	23	20
9	41	31	25	39	30	25	29	24	20	17
10	38	28	23	37	28	22	26	21	18	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1140	18.7	24.9
0-40	1898	31.1	41.4
0-60	3107	50.9	67.8
0-90	3847	63.1	84.0
90-180	735	12.1	16.0
0-180	4582	75.1	100.0

LB 2 40

Report LTL 4321 — Lumens per lamp = 3150

S/MH (along) 1.3 (across) 1.3

Coefficient of Utilization

Ceiling	80%			70%			50%			0%
	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	83	83	83	80	80	80	74	74	74	61
1	76	73	70	73	70	67	65	63	61	51
2	70	64	60	67	62	58	58	54	51	44
3	64	57	52	62	55	50	52	48	44	38
4	59	51	45	57	49	44	46	42	38	33
5	54	46	40	52	44	39	41	37	33	29
6	50	41	35	48	40	34	37	33	29	25
7	46	37	31	44	36	30	34	29	25	22
8	43	33	27	41	32	27	31	26	22	19
9	39	30	24	38	29	24	27	23	19	17
10	37	27	22	35	26	21	25	20	17	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1147	18.2	25.3
0-40	1889	30.0	41.6
0-60	3095	49.1	68.1
0-90	3849	61.1	84.7
90-180	694	11.0	15.3
0-180	4543	72.1	100.0

LB Low-Profile Wraparound, Narrow Body

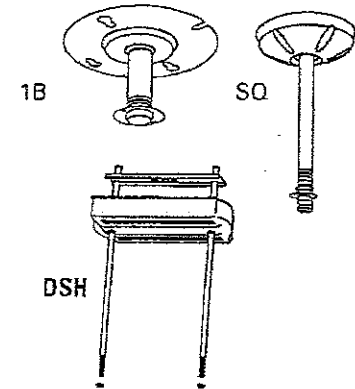
MOUNTING DATA

For unit or row installation, surface or stem mounting. Stem mounting not available on TLB.

Individual installation — One double-stem (4' only) or two single-stem hangers required.

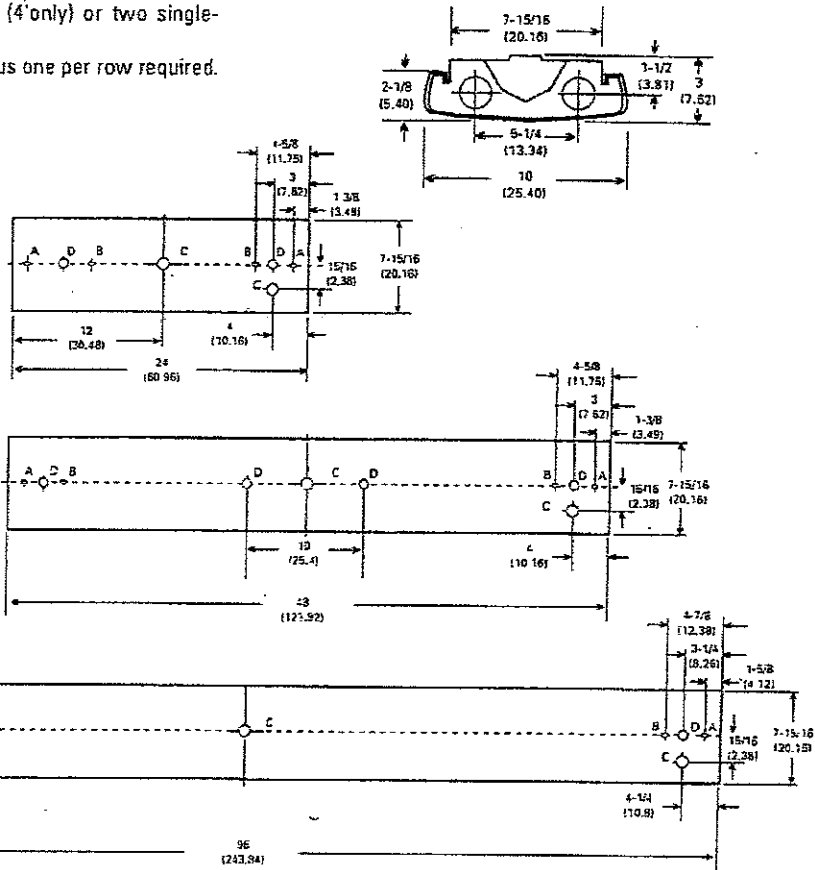
Row installation — One hanger per fixture plus one per row required.

See ACCESSORIES below for hanging devices.



DIMENSIONS

Inches (centimeters). Subject to change without notice.



- A = 1/4 x 1/2 (.635 x 1.27) Oval Hole
- B = 1/4 x 1/2 (.635 x 1.27) K.O.
- C = 7/8 (2.22) Dia. K.O.
- D = 11/16 (1.74) Dia. K.O.
- E = 2 (5.08) Dia. K.O. and 7/8 (2.22) Dia. K.O.
- G = 1-1/8 (2.85) Dia. K.O.

ORDERING INFORMATION

Example: LB 2 32 120 GEB

LB	2			
Series	Number of lamps	Lamp Type	Voltage	Options
LB 2 lamps, 10" wide For tandem, double-length unit, add prefix T. Example: TLB	2 Not included	17 17W T8 (24") 20 20W T8 T12 (24") 32 32W T8 (48") 40 40W T12 (48")	120, 277, 347 MVOLT	ES Energy-saving ballasts (40W lamps only). GEB Electronic ballasts, ≤ 20% THD. GEB10IS Electronic ballast(s) ≤ 10% THD, Instant start EL Emergency battery pack (nominal 300 lumens See Life Safety Section). GLR Internal fast-blow fuse. GMF Internal slow-blow fuse. RIF1 Radio interference filter (1 per fixture). LSC Lens safety clips (2 per fixture). CSA Listed and labeled to comply with Canadian Standards NOM Listed and labeled to comply with Mexican Standards. SSR Specular silver interior finish (95% reflective).
Accessories				
Order as separate item				
SQ Swivel-stem hanger (specify in 2" increments).				
1B Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).				
DSH24 Double stem hanger for 4' fixtures, 24" stems.				
LB2W Walnut endplate appliques, one pair.				
LB2T Teak endplate appliques, one pair.				
LB2B Textured, black endplate appliques, one pair.				

LB N



FEATURES

- Low-profile wraparound suitable for offices, schools and corridors. Matches CB in appearance.
- Acrylic, prismatic diffuser with sonic-welded injection-molded luminous ends.
- White enamel endplates — optional appliques available.
- Linear-side prisms control brightness, pyramidal bottom prisms minimize lamp image.
- Continuous, interlocking diffuser support prevents accidental opening and simplifies maintenance.
- For surface or stem mounting, individual or row installation. Snap-in aligners permit row mounting without tools.
- Available in tandem-wired lengths.
- High-gloss, baked white enamel finish.
- Guaranteed for one year against mechanical defects in manufacture.

SPECIFICATIONS

BALLAST — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed, CSA-certified ballast is standard. Sound rated A. Standard combinations are CBM approved and conform to UL 935.

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

MATERIALS — Metal parts are die-formed from code gauge steel. Diffuser is 100% acrylic. No asbestos is used in this product.

FINISH — Five-stage, iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards (see options).

Specifications subject to change without notice.

Type: F

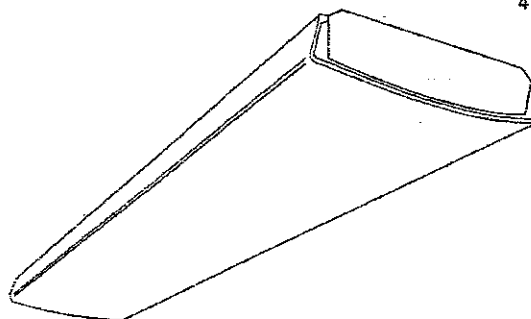
Catalog Number: LB 3 32 MVOLT 1/3 GEB10IS
POINT PLEASANT ARMORY

Low-Profile Wraparound

LB 3

Wide Body

4' or 8' length
3 lamps



ENERGY

- Luminaire Efficacy Rating (LER) and Annual Energy Cost:
Three-lamp LER.FW = 65. Annual Energy Cost = \$3.69.
Based on 32W T8 lamp, 2850 lumens, and energy-saving electronic ballast. Ballast factor = .88, input watts = 87.
Calculated in accordance with NEMA standard LE-5.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

LB 3 32

Report LTL 5638 — Lumens per lamp = 2900

S/MH (along) 1.2 (across) 1.3

Coefficient of Utilization

Ceiling	80%			70%			50%			0%		
	Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%	
0	87	87	87	84	84	84	79	79	79	67		
1	80	77	74	77	74	71	70	67	65	57		
2	74	68	63	71	66	62	62	59	56	49		
3	68	61	55	65	59	54	56	51	48	43		
4	63	54	48	60	53	47	50	45	42	37		
5	57	49	42	55	47	41	45	40	36	32		
6	53	44	37	51	43	37	41	35	32	28		
7	49	39	33	47	38	33	37	32	28	25		
8	45	35	29	44	35	29	33	28	24	22		
9	42	32	26	40	31	25	30	25	21	19		
10	39	29	23	37	28	23	27	22	19	16		

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1786	20.5	27.5
0-40	2935	33.7	45.1
0-60	4808	55.3	73.9
0-90	5835	67.1	89.7
90-180	668	7.7	10.3
0-180	6503	74.8	100.0

LB 3 40

Report LTL 4495 — Lumens per lamp = 3150

S/MH (along) 1.2 (across) 1.3

Coefficient of Utilization

Ceiling	80%			70%			50%			0%		
	Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%	
0	78	78	78	76	76	76	71	71	71	60		
1	72	69	66	70	67	64	63	61	59	51		
2	66	61	57	64	59	56	56	53	50	44		
3	61	55	50	59	53	49	50	46	43	39		
4	56	49	44	54	48	43	45	41	38	34		
5	52	44	38	50	43	37	40	36	33	29		
6	48	39	34	46	38	33	37	32	29	26		
7	44	36	30	43	35	29	33	28	25	22		
8	41	32	26	39	31	26	30	25	22	20		
9	38	29	23	36	28	23	27	22	19	17		
10	35	26	21	34	26	21	24	20	17	15		

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1761	18.6	27.7
0-40	2884	30.5	45.4
0-60	4707	49.8	74.1
0-90	5712	60.4	89.9
90-180	641	6.8	10.1
0-180	6353	67.2	100.0

B 3 Low-Profile Wraparound, Wide Body

MOUNTING DATA

For unit or row installation, surface or stem mounting. Stem mounting not available on TLB units.

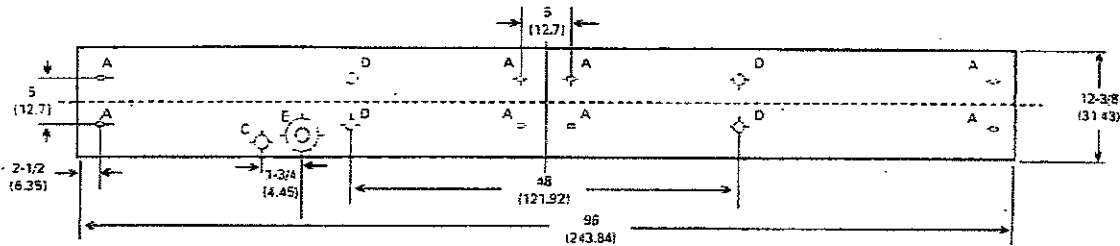
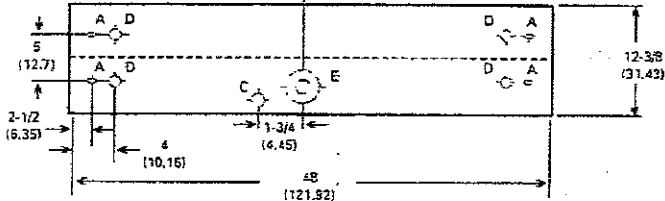
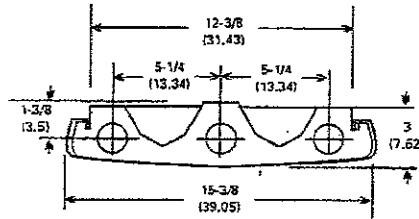
Individual installation — Four single-stem hangers required.

Row installation — Two hangers per fixture plus two per row required.

See ACCESSORIES below for hanging devices.

DIMENSIONS

Inches (centimeters). Subject to change without notice.



- A = 1/4 x 1/2 (.635 x 1.27) hole
- C = 7/8 (2.22) Dia. K.O.
- D = 1 1/16 (1.74) Dia. K.O.
- E = 2 (5.08) Dia. K.O. and 7/8 (2.22) Dia. K.O.

ORDERING INFORMATION

Example: LB 3 32 120 GEB

Series	Number of lamps	Lamp Type	Voltage	Options
LB 3 lamps, 15-3/8" wide For tandem, double-length unit, add prefix T. Example: TLB	3 Not included	32 32W T8 (48") 40 40W T12 (48")	120, 277, 347 MVOLT	ES Energy-saving ballasts (40W lamps only). GEB Electronic ballasts, ≤ 20% THD. GEB10IS Electronic ballast(s) ≤ 10% THD, Instant start EL Emergency battery pack (nominal 300 lumens See Life Safety Section). GLR Internal fast-blow fuse. GMF Internal slow-blow fuse. RIF1 Radio interference filter (1 per fixture). LSC Lens safety clips (2 per fixture). CSA Listed and labeled to comply with Canadian Standards. NDM Listed and labeled to comply with Mexican Standards. SSR Specular silver interior finish (95% reflective). 1/3 One 3-lamp ballast

Accessories

Order as separate item

- SQ Swivel-stem hanger (specify in 2" increments).
- 1B Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).
- LB4W Walnut endplate appliques, one pair.
- LB4T Teak endplate appliques, one pair.
- LB4B Textured, black endplate appliques, one pair.

LITHONIA LIGHTING
COMMERCIAL & INDUSTRIAL FLUORESCENT LIGHTING
P O BOX A, CONYERS, GEORGIA 30012, TELEPHONE 770-922-5000, FAX 770-850-3166

LB 3 W

©1998 Lithonia Lighting 9/98

LB3W.P65

Type: G
 Catalog Number: **TWS 42TRT MVOLT**
 POINT PLEASANT ARMORY

FEATURES & SPECIFICATIONS

INTENDED USE

For entrances, stairwells, corridors and other pedestrian areas.

CONSTRUCTION

Cast aluminum backplate. Gasketing between backplate and front cover prevents the entry of water and contaminants. External hardware includes phillips head and tamper-proof hex-head fasteners.

FINISH

Dark bronze (DDB) or white (DWH) front cover available for all wattages.

OPTICAL SYSTEM

Front cover/refractor is injection-molded, one-piece, UV-stabilized polycarbonate. The optical system is sealed and gasketed to inhibit the entrance of outside contaminants.

ELECTRICAL SYSTEM

The 13W fluorescent uses a 120V electro-magnetic ballast and includes a twin tube fluorescent lamp as standard. The 26/42W fluorescent uses a multi-volt electronic ballast and offers the option of 120-277V operation and also the option of 26W, 32W or 42W triple tube fluorescent lamp (not included).

INSTALLATION

Units are for wall mounting and include two 3/4" knockouts for routing electrical conduit.

LISTING

UL listed for wet locations. Listed and labeled to comply with Canadian Standards.

Small Polycarbonate Wall Pack

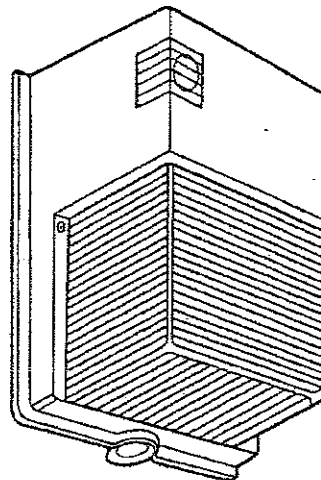
TWS

COMPACT FLUORESCENT

13TT

26TRT, 32TRT, 42TRT

8' to 12' Mounting



Specifications

Height: 11" (27.9cm)
 Width: 6-1/2" (16.5cm)
 Depth: 5-1/4" (13.3cm)
 Weight: 3.3 lbs./1.5 kgs

ORDERING INFORMATION

Example: TWS 13TT 120 PE LPI

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

Series	Wattage/lamp	Voltage	Options
TWS	13TT One 13W twin-tube lamp 26TRT One 26W 4-pin tri-tube lamp ¹ 32TRT One 32W 4-pin tri-tube lamp ¹ 42TRT One 42W 4-pin tri-tube lamp ¹	120 MVOLT ²	Shipped installed in Fixture PE Photoelectric cell as standard(N/A with MVOLT) LPI Lamp included as standard for 13TT only L/LP Less lamp standard for 26/42TRT Architectural Colors (optional) DDB (Standard) DWH White

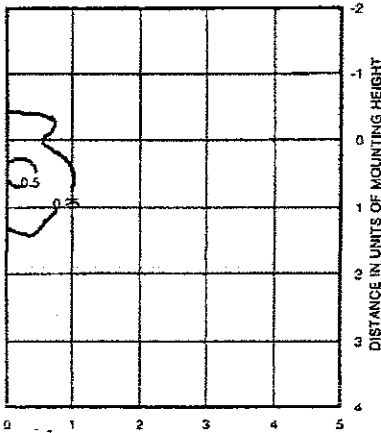
NOTES:

- Ships as 26/42 TRT. Operates 26-42 watt as standard based on lamp choice.
- Not available with 13TT

Accessories

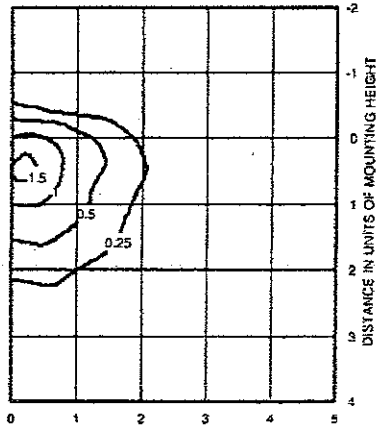
Order as separate catalog number
 RK1 PEB1 Photocell kit (120V only)
 TWSWG Wireguard

TWS 13TT TEST NO: LTL12634
ISOILLUMINANCE PLOT (Footcandle)



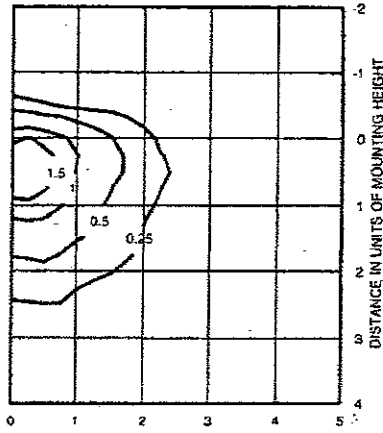
Luminaire Efficiency: 52.2%
13W compact fluorescent twin tube lamp
Footcandle values based on 8' mounting height, 800 rated lumens

TWS 26TRT TEST NO: LTL12664F
ISOILLUMINANCE PLOT (Footcandle)



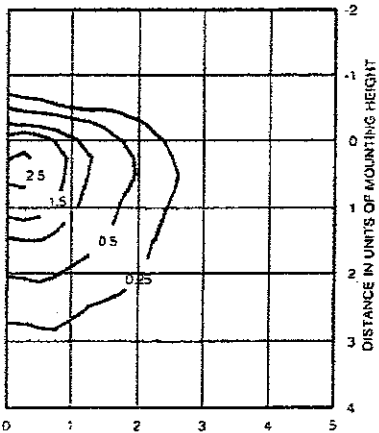
Luminaire Efficiency: 55.2%
26W compact fluorescent triple tube lamp
Footcandle values based on 8' mounting height, 1800 rated lumens

TWS 32TRT TEST NO: LTL12633
ISOILLUMINANCE PLOT (Footcandle)



Luminaire Efficiency: 55.2%
32W compact fluorescent triple tube lamp
Footcandle values based on 8' mounting height, 2400 rated lumens

TWS 42TRT TEST NO: LTL12663P
ISOILLUMINANCE PLOT (Footcandle)



Luminaire Efficiency: 55.2%
42W compact fluorescent triple tube lamp
Footcandle values based on 8' mounting height, 3200 rated lumens

Electrical Characteristics

Wattage/ballast	Primary voltage	Maximum line current (amps)	Input watts	Power factor(%)
Fluorescent 1-13TT	120	.041	17	NPF NPF
Fluorescent 1-26TRT	120 277	.22 .09	26	HPF
Fluorescent 1-32TRT	120 277	.30 .13	36	HPF
Fluorescent 1-42TRT	120 277	.39 .17	47	HPF

Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory data and actual field measurements. Dimensions and specifications on this sheet are based on the most current available data and are subject to change without notice.

Mounting Height Correction Factor
(Multiply the fc level by the correction factor)
10 ft. = 0.64
12 ft. = 0.44



Lithonia Lighting
Acuity Lighting Group, Inc.
Outdoor Lighting
One Lithonia Way, Conyers, GA 30012
Phone: 770-322-9000 Fax: 770-918-1209
In Canada: 180 Ave. LaBrosse, Pointe-Claire, P.Q. H9R 1A1
www.lithonia.com

FEATURES & SPECIFICATIONS

INTENDED USE — Outdoor storage areas, warehouse and factory perimeters and loading docks.

CONSTRUCTION — Rugged, corrosion-resistant, die-cast aluminum. Corrosion-resistant external hardware includes slotted hex-head fasteners.

FINISH — Standard finish is electrostatically-applied, oven-cured, dark bronze (DDB) corrosion-resistant polyester powder paint.

OPTICAL SYSTEM — Reflector is specular anodized aluminum. Refractor is prismatic borosilicate glass which is sealed and gasketed to inhibit the entrance of outside contaminants.

ELECTRICAL SYSTEM — High power factor, constant-wattage autotransformer. Ballast is copper-wound and 100% factory-tested. Meets ANSI standards and is UL listed. Electrical components are mounted in hinged front cover that includes primary and secondary electrical disconnect. (For 50 hertz availability, consult factory).

Porcelain, horizontally-oriented, medium base socket for 100-150W and mogul-base socket for 175W and above, with copper alloy, nickel-plated screw shell and center contact. UL listed 1500W, 600V.

INSTALLATION — Back housing is separated from front housing, eliminating ballast weight and promoting easy handling. Top 3/4" threaded wiring access. Back access through removable 3/4" knockout. Feed-thru wiring can be achieved by using a conduit tee. Mount on any vertical surface. Not recommended in applications where a sprayed stream of water can come in direct contact with glass lens.

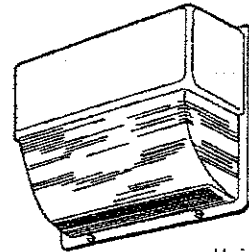
LISTING — UL Listed (standard). CSA or NOM Certified (see Options). UL listed suitable for wet locations. IP65 rated (250 watt and below) or IP54 rated (400 watt) in accordance with IEC Standard 529.

Wall-Paks

TWH

METAL HALIDE

100W, 150W, 175W, 200W, 250W, 320W, 350W, 400W
 8' to 25' Mounting



Height: 15-3/4" (40cm)
 Width: 16-1/4" (42.6cm)
 Depth: 8" (20.3cm)
 Weight: 26-42 lbs. (12-19 kg)

ORDERING INFORMATION

Example: TWH 175M 120 LPI

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

TWH				Options	
Series	Wattage /lamp	Voltage			
TWH		120	Shipped installed in Fixture	NOM	NOM Certified (consult factory)
	100M ^{1,4}	208 ⁵	SF Single fuse (120, 277, 347V) ⁷		Architectural Colors (optional)
	150M ^{2,4}	240 ⁵	DF Double fuse (208, 240, 480V) ⁷	DNA	Natural aluminum
	175M	277	EC Emergency circuit ^{8,9}	DBL	Black
	200M ³	347	QRS Quartz restrike system ^{8,9}	DSB	Steel blue
	250M ²	480 ⁵	CR Enhanced corrosion resistance	JMB	Medium bronze
	320M ³	TB ⁶	CRT Non-stick protective coating ¹⁰	DGC	Charcoal gray
	350M ³	TBV ¹³	PE Photoelectric cell - button type ¹⁷	DTG	Tennis green
	400M ^{2,4}		PER NEMA twist-lock receptacle ¹¹	DBR	Bright red
			LPI Lamp included as standard	DSS	Sandstone
			L/LP Less lamp	DWH	White
			LS Lamp support (mogul socket only)		
			TP Tamper proof latches		
			FS Full shield		
			WG Wireguard ¹² (shipped separately)		
			VG Vandal guard ¹² (shipped separately)		
			SCWA Super SCWA Pulse Start Ballast		
			CSA CSA Certified ¹⁴		

NOTES:

- 1 Not available 480V & TB.
- 2 May be ordered with SCWA.
- 3 Must be ordered with SCWA.
- 4 Requires T-15, ED or BT28 reduced jacket lamp.
- 5 Not available in Canada.
- 6 Optional multi-tap ballast (120, 208, 240, 277V). (120, 277, 347V in Canada).
- 7 Not available with multi-tap ballast.
- 8 Lamp not included.
- 9 Quartz lamp wattage not to exceed ballast wattage rating.
- 10 Black finish only.
- 11 Photo cell not included.
- 12 Requires modification.
- 13 Optional 5-tap ballast (120, 208, 240, 277, 480V)
- 14 Not available with TBV.

Accessories

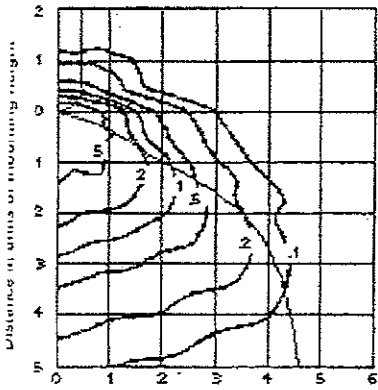
- Order as separate catalog number.
- RK1 PEB1 Photoelectric control kit (120V, button type)
 - RK1 PEB2 Photoelectric control kit (120V, button type)
 - RK1 PEB3 Photoelectric control kit (347V, button type)
 - PE1 NEMA twist-lock photocontrol (120V/208V/240V)
 - PE3 NEMA twist-lock photocontrol (347V)
 - PE4 NEMA twist-lock photocontrol (480V)
 - PE7 NEMA twist-lock photocontrol (277V)

WH₃₅ Metal Halide Wall-Paks

Efficient of Utilization _____
 Initial Footcandles _____

WH 175M Test report no. 94121101

Coefficients of utilization

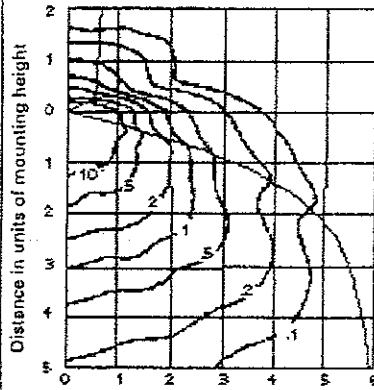


Distance in units of mounting height

175W, metal halide lamp, horizontal lamp orientation, 12' mounting height, 14,000 rated lumens. Total fixture efficiency: 60.6%

TWH 250M Test report no. 95011902

Coefficients of utilization

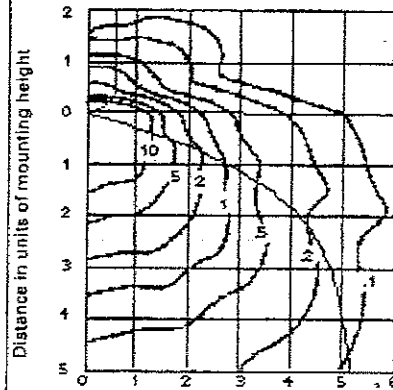


Distance in units of mounting height

250W, metal halide lamp, horizontal lamp orientation, 12' mounting height, 20,500 rated lumens. Total fixture efficiency: 76.9%

TWH 400M Test report no. 94112102

Coefficients of utilization



Distance in units of mounting height

400W, metal halide, E-18 lamp, horizontal lamp orientation, 12' mounting height, 36,000 rated lumens. Total fixture efficiency: 70%

Mounting Height Correction Factor

(Multiply the fc level by the correction factor)

15 ft = .64

20 ft = .36

25 ft = .23

$$\left(\frac{\text{Existing Mounting Height}}{\text{New Mounting Height}} \right)^2 = \text{Correction Factor}$$

Note:

1 Photometric data for other distributions can be accessed from the Lithonia Lighting website. (www.lithonia.com)



An Acuity Brands Company

Lithonia Lighting

Acuity Lighting Group, Inc.

Outdoor Lighting

One Lithonia Way, Conyers, GA 30012

Phone: 770-922-9000 Fax: 770-918-1209

In Canada: 160 avenue Labrosse, Point-Claire, P.O., H9R 1A1

www.lithonia.com

Catalog Number		TWR1 175M TB LPI	
Notes	POINT PLEASANT ARMORY		Type J 36

FEATURES & SPECIFICATIONS

INTENDED USE

Ideal for mounting above entryways and loading docks.

CONSTRUCTION

Rugged, corrosion-resistant die-cast aluminum back housing and hinged door frame. Castings are sealed with a one-piece gasket to inhibit the entrance of external contaminants. Finish is bronze polyester powder paint for lasting durability.

ELECTRICAL SYSTEM

Quad-tap, constant wattage autotransformer. Ballast is copper-wound and 100% factory-tested.

OPTICAL SYSTEM

Refractor is prismatic borosilicate glass. Reflector is die-formed anodized stippled aluminum.

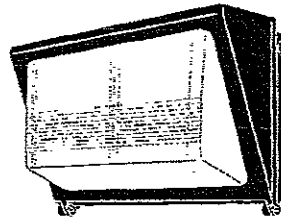
Medium-base lamp included in carton as standard.

INSTALLATION

Housing is configured for mounting directly over a standard 4" outlet box or for surface wiring via any of three convenient 3/4" threaded conduit entry hubs.

LISTING

UL Listed to US and Canadian safety standards (see Options). Suitable for wet locations (25°C maximum ambient temperature).



Wall-Packs

TWR1

70-150W HIGH PRESSURE SODIUM
70-175W METAL HALIDE
2/42W COMPACT FLUORESCENT

Specifications

Height: 9" (22.86 cm)
Width: 13" (33.02 cm)
Depth: 7-3/8" (18.75 cm)
Weight: 18lbs/11.8kg

ORDERING INFORMATION

Example: TWR1 70S TB LPI

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

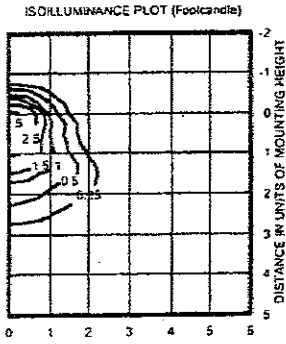
TWR1			LPI		Options	
Series	Wattage/Source	Voltage	Lamp			
TWR1	<u>High Pressure Sodium</u>	120	LPI Lamp included as standard	CSA Listed and labeled to comply with Canadian Standards		
	70S	120/347		PE Photoelectric cell-button type ³		
	100S	TB ²		TWR1WG Wireguard ⁴		
	150S	MVOLT				
	<u>Metal Halide</u>					
	70M					
	100M					
	175M					
	<u>Compact Fluorescent</u>					
	2/42TRT ¹					

NOTES.

- Available with MVOLT only. 120-Volt can be ordered only with PE option.
- Optional multi-tap ballast (120, 208, 240, 277V) (120, 277, 347V in Canada).
- Available with 175M, 120 Volt or 2/42TRT 120 Volt only. Consult factory for wattages/voltages availability.
- Shipped separately.

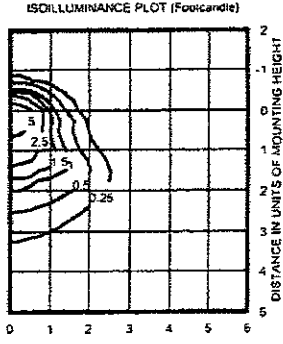
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TWR1 70S TEST NO: LTL10409



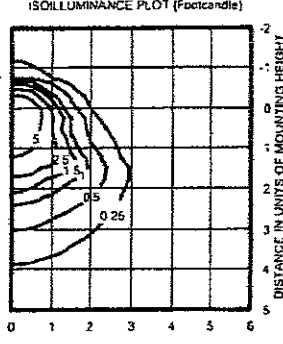
W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 6300 rated lumens
Luminaire Efficiency: 54.6%

TWR1 100S TEST NO: LTL10410



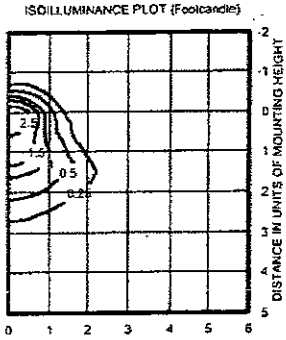
W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 9500 rated lumens
Luminaire Efficiency: 54.6%

TWR1 150S TEST NO: LTL10373



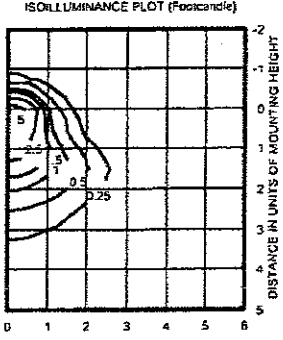
W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 15800 rated lumens
Luminaire Efficiency: 54.6%

TWR1 70M TEST NO: LTL10412



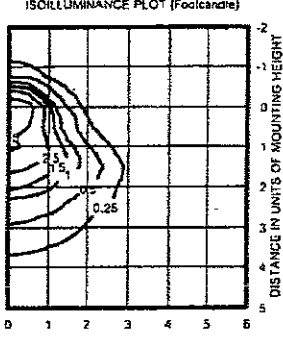
W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 5200 rated lumens
Luminaire Efficiency: 55.0%

TWR1 100M TEST NO: LTL10413



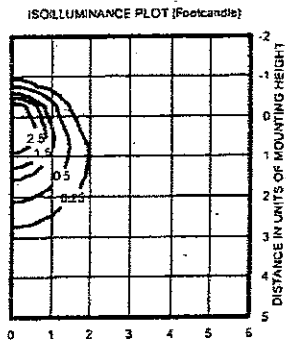
W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 8500 rated lumens.
Luminaire Efficiency: 55.0%

TWR1 175M TEST NO: LTL10374



W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 12800 rated lumens.
Luminaire Efficiency: 55.0%

**TWR1 2/42TRT
MVOLT** TEST NO: LTL13636



W lamp, horizontal lamp orientation
Footcandle values based on 12' mounting height, 3200 rated lumens
Luminaire Efficiency: 48.3%



Lithonia Lighting
Outdoor Lighting
One Lithonia Way, Conyers, GA 30012
Phone: 770-922-9000 Fax: 770-918-1209
www.lithonia.com

FEATURES & SPECIFICATIONS

INTENDED USE—The SPEC-BEAM™ is an ideal one-for-one replacement of common metal halide high bay systems. The unique Cool Running Technology provide trouble free operation in ambient spaces up to 65°C. Applications include warehousing, manufacturing, commercial facilities and retail. The SPEC-BEAM™ performs best at mounting heights from 15' to 40'.

ATTRIBUTES—Designed for optimum performance using highly efficient T5HO lamps. Best in applications requiring a rugged full body assembly with excellent fixture performance. Multiple optical systems allow the right distribution for the right application. Three mounting choices are available. Available in MVOLT, 347 or 480 volt.

CONSTRUCTION—Full fixture body provides strength and rigidity during shipment and installation. Channel, end caps and socket brackets are manufactured from code grade steel, fixture assembly is riveted and screwed together for added strength. Access to ballast and wiring compartment is accessed from below and is completely tool-less.

FINISH—High-gloss white baked enamel, pretreated with five-stage iron phosphate system. Optional polyester powder coat available.

OPTICAL SYSTEM—All distributions included, precision formed, high performance, 95% reflective, segmented optics utilizing Alanod MIRD® 4 specular aluminum warranted for 25 years. Reflector optics are available in a wide variety of distributions and spacing criteria.

Reflectors are available with uplight (recommended) or solid top that includes heat dissipation slots for heat management venting (2-3% uplight typical).

ELECTRICAL SYSTEM—Thermally protected, resetting Class P, HPF, A+ sound rated electronic ballast. AWM, TFM or THHN wire used throughout rated for required temperatures.

Lamps are secured with rotary locking lamp sockets for ease of relamping and to reduce lamps from disconnecting due to vibration or incidental contact.

INSTALLATION—The SPEC-BEAM™ is suitable for suspension by chain, cable or monopoint-mounted with appropriate accessories. Fixture must be suspended mount for ceiling structures.

LISTING—UL Listed, CSA Certified. (UL 1598 and CSA C22.2 No. 250.0-00.) For ambient operation up to 55°C. Suitable for damp locations.

WARRANTY—Ballast Warranty-five years when operated at ambient temperatures up to 55°C, three years when operated at ambient temperatures up to 65°C. Lensed fixtures are warranted for five years when operated at ambient temperatures up to 40°C.

SPEC-BEAM™

FSB

FLUORESCENT HIGH BAY
T5HO Lamps

COOL
TECHNOLOGY



Patent Pending

T5HO
Technology

Specifications

# Lamps:	2 or 3	4	6
Length:	48 (1220)	48 (1220)	48 (1220)
Width:	12 (305)	16 (407)	24 (610)
Depth:	4-1/2 (111)	4-1/2 (111)	4-1/2 (111)
Weight:	16 lbs (7.26 kg)	17 lbs (7.71 kg)	19 lbs (8.62 kg)

All dimensions are inches (millimeters).

Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).

Example: FSB 654L

Series	Distribution	Voltage	Ballast	Options
FSB	Uplight (blank) Narrow 0.9<SC<1.2 KD Medium 1.2<SC<1.4 SD Spread 1.4 <SC<1.8 WD Wide 1.8<SC TD Focus SC<0.9 No uplight NDS Narrow 0.9<SC<1.2² KDS Medium 1.2<SC<1.4² SDS Spread 1.4 <SC<1.8 ² WDS Wide 1.8<SC<SC² TDS Focus SC<0.9 ²	(blank) MVOLT (120V-277V) ³ HVOLT (347V-480V)	(blank) Program start, 1.0 BF	EL14 Emergency battery pack (1400 lumens) ⁵ GLR Internal fast blow fusing ⁵ OCS OnePass installed ⁸ MSIA Occupancy sensor prewired aisle wedge ⁶ MSI360 Occupancy sensor prewired 360° area for 25' ⁶ AL Aluminum construction, PAF PAF Powder coat after fabrication WGI Wireguard, 11 gauge, PAF OUTCTR Wiring leads through center of fixture (For use with monopoint hanger when using hanger as a wiring connection point) BDP Ballast disconnect ⁷
Number of lamps/wattage Lamp installed ¹ 254L 2-Lamp 354L 3-Lamp 454L 4-Lamp 654L 6-Lamp Unlamped 254 2-Lamp 354 3-Lamp 454 4-Lamp 654 6-Lamp	Shielding³ (blank) No shielding A12 Pattern 12 acrylic ⁴ ACL Clear acrylic, 0.125" ⁴ PCL125 Clear polycarbonate, 0.125" ⁴	Ballast configuration (blank) Standard configuration (see chart, back page) 2/3 Two, three-lamp ballasts 2/2 Two, two-lamp ballasts	Lamps installed T5HO (blank) F54T5HO/841 LP830 F54T5HO/830 LP835 F54T5HO/835 LP850 F54T5HO/850 Amalgam T5HO LP830A F54T5HO/830 LP835A F54T5HO/835 LP841A F54T5HO/841 LP850A F54T5HO/850	

NOTES:

- Lamps installed are F54T5HO/841.
- No uplight reflectors; options incorporate heat managing venting above the fixture that produce 2-3% uplight.
- Lamp shielding is provided in door frame.
- A12 not available with WD and WDS distribution.
- UL listed for 25°C only. Consult factory for 6-lamp fixtures.
- Specific voltage. Frequent cycling applications GEB10PS recommended. MSI will be wired to all ballasts on multi-ballast fixtures
- Meets codes that require in fixture disconnect.

Accessories

Order as a separate catalog number.

FSBAC120	Aircraft cable 10' Y hanger (one pair)
FSBAC240	Aircraft cable 20' Y hanger (one pair)
HSD36	Chain hanger, 36"
THSD	Monopoint hanger with top opening
THSDHB	Monopoint-hanger with 3/4" hub
THSDSK	Side covers for Monopoint hanger (For use with Monopoint hanger when using hanger as a wiring connection point)

FSB T5HO Fluorescent High Bay

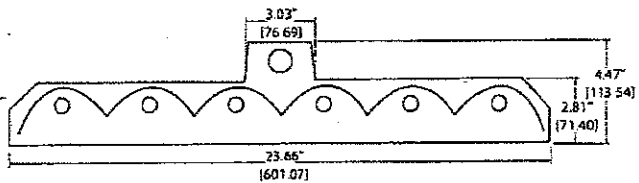
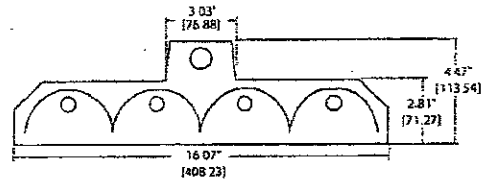
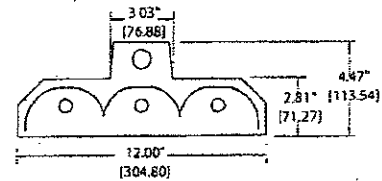
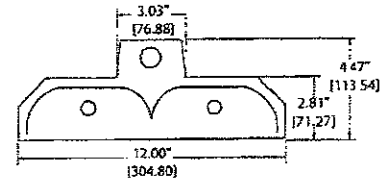
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Availability and Dimensions

Nominal size	Series	Number of lamps	Height	Width
12"x4	FSB 2	2	4.47"	12"
12"x4	FSB 3	3	4.47"	12"
16"x4	FSB 4	4	4.47"	16"
24"x4	FSB 6	6	4.47"	23.6"

DIMENSIONS

All dimensions are in inches (millimeters).



Standard Ballast Configuration

- 2-lamp (1) 2-lamp ballast
- 3-lamp (1) 3-lamp ballast
- 4-lamp (1) 4-lamp ballast
- 6-lamp (1) 4-lamp ballast & (1) 2-lamp ballast

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

FSB 454 WDS
TEST NO. LTL 14950
LUMENS PER LAMP: 4406

FSB 454
TEST NO. LTL 14955
LUMENS PER LAMP: 4400

FSB 654
TEST NO. LTL 14967
LUMENS PER LAMP: 4406

pl pc pw	Coefficients of Utilization								
	20%			50%			30%		
	80%	30%	10%	50%	30%	10%	50%	30%	10%
0	108	108	108	100	100	100	95	95	95
1	95	91	88	88	85	83	84	82	80
2	83	76	71	77	72	68	73	69	66
3	72	64	58	67	61	56	64	59	55
4	63	55	49	59	52	47	57	51	46
5	56	48	41	52	45	40	50	44	39
6	50	41	35	47	40	35	45	39	34
7	45	37	31	42	35	30	41	34	30
8	40	32	27	38	31	26	37	31	26
9	37	29	24	35	28	23	34	27	23
10	34	26	21	32	25	21	31	25	21

pl pc pw	Coefficients of Utilization								
	20%			50%			30%		
	80%	30%	10%	50%	30%	10%	50%	30%	10%
0	110	110	110	99	99	99	92	92	92
1	98	94	91	88	86	83	83	81	79
2	86	80	76	78	74	70	74	70	67
3	77	70	64	70	65	60	66	61	58
4	69	61	55	63	57	52	59	54	50
5	62	54	48	57	51	46	54	49	44
6	56	48	43	52	46	41	49	44	40
7	51	44	38	48	41	37	45	40	36
8	47	40	34	44	38	33	42	36	32
9	43	36	31	41	34	30	39	33	29
10	40	33	29	38	32	28	36	31	27

pl pc pw	Coefficients of Utilization								
	20%			50%			30%		
	80%	30%	10%	50%	30%	10%	50%	30%	10%
0	113	113	113	102	102	102	95	95	95
1	100	96	93	90	88	85	85	83	81
2	88	82	77	80	76	72	75	72	68
3	78	71	65	71	66	61	67	63	59
4	70	62	56	64	58	53	60	56	51
5	63	55	49	58	52	47	55	49	45
6	57	49	43	53	46	41	50	44	40
7	52	44	39	48	42	37	46	40	36
8	48	40	35	45	38	34	42	37	33
9	44	37	32	41	35	31	39	34	30
10	41	34	29	38	32	28	37	31	27

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	3288.8	18.7	20.4
0° - 40°	5209.5	35.3	38.5
0° - 60°	12719.4	72.3	78.8
0° - 90°	15576.3	88.5	96.5
90° - 180°	572.5	3.3	3.5
0° - 180°	16148.8	91.8	100.0

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	5287.2	30.0	31.7
0° - 40°	7953.9	45.2	47.7
0° - 60°	12351.2	70.2	74.0
0° - 90°	14548.9	83.2	87.8
90° - 180°	2043.1	11.6	12.2
0° - 180°	16592.0	94.8	100.0

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	8032.9	30.4	31.3
0° - 40°	12030.4	45.6	46.8
0° - 60°	18791.8	71.2	73.1
0° - 90°	22563.5	85.5	87.8
90° - 180°	3137.9	11.9	12.2
0° - 180°	25701.4	97.4	100.0



An Acuity Brands Company

Lithonia Lighting

Industrial
One Lithonia Way, Conyers, GA 30012
Phone: 770-922-9000 Fax: 770-981-8141
www.lithonia.com



FEATURES & SPECIFICATIONS

INTENDED USE

Intended for use in retail stores, warehouses and manufacturing applications where high lumen package in a compact fixture is required.

ATTRIBUTES

Product is specifically designed for operation with T5HO lamps.

CONSTRUCTION

Channel and louvers are formed from cold-rolled, 20-gauge steel. No asbestos is used in this product.

End caps include knockouts for through wiring and fixture attachment in row mounting applications. Compact sockets feature rotating collars and enclosed contacts.

Designed for simple servicing, louver assembly hinges remain attached and hinge down providing easy access into the optical system.

FINISH

High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM

The Narrow Distribution (ND) includes a Miro4™ parabolic reflector system to provide high vertical and good horizontal illumination for aisle or rack lighting. The Wide Distribution (WD) is ideal for general area lighting at higher mounting heights or where widespread distribution is preferred. Both distributions are available with white straight blade louver for additional shielding and brightness control. Uplight component softens ceiling appearance to reduce the "cavern effect".

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, A+ sound rated electronic ballast. AWM TFM or THHN wire used throughout, rated for required temperatures. All ballasts are available for use in standard ambient temperatures. Consult factory for elevated ambient temperature applications.

INSTALLATION

A variety of mounting arrangements is available including tong hangers, aircraft cables and stems. Suitable for mounting in continuous row or individual mounting. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

LISTING

UL listed. CSA optional; (consult factory)

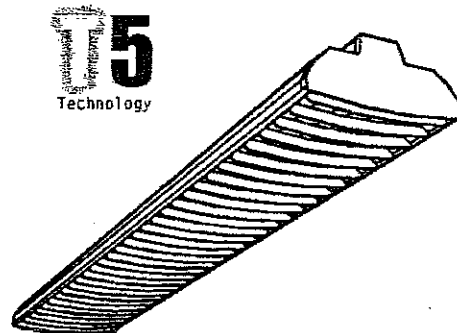
WARRANTY

Guaranteed for one year against mechanical defects in manufacturing.

Catalog Number	
TMS5HB 3 54T5HO SBL WD MVOLT 1/41/2 GEB10PS	
Notes	Type
POINT PLEASANT ARMORY	M

T5 Fluorescent High Bay - Louver

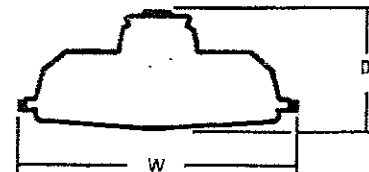
MS5HB



4' or 8' Lengths
2, 3 Lamps

Specifications

Length:	46-1/16" (1170)
	92-1/8" (2340)
Width:	9-3/4" (248)
Depth:	4-1/4" (108)
Weight:	27.8 lbs (12.6 kg)



All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

Example: TMS5HB 3 54T5HO SBL ND MVOLT GEB10PS

SBL		SBL				Options	
Series	Lamp type	Configuration	Distribution	Voltage	Options		
MS5HB T5 low-profile direct/indirect	28T5 28W T5 (46") 54T5HD 54W T5HO (46")	SBL White straight blade louver assembly	ND Narrow WD Wide	MVOLT ² 347 480 ³	1/3 One 3-lamp ballast ⁴ 1/4 One 4-lamp ballast ⁴ GEB10PS Electronic program rapid start ballast, <10% THD	GLR Internal fast-blow fuse ⁴ GMF Internal slow-blow fuse ⁴ EL55 Emergency battery pack (nominal 390-700 lumens) ⁴ CSA CSA Certified	
MS5HBST T5 low-profile solid top ¹					1/2 One 2-Lamp Ballast		
For tandem double-length unit, add prefix T. Example: TMS5HB		Accessories Order as separate catalog number.					
Number of lamps 2, 3 Not included		MSHBAC_ Adjustable aircraft cable support (non-feed), (specify length as 36, 72 or 120 inches).	MSHBACF_ Aircraft cable feed and support, (specify length as 36, 72 or 120 inches).		THMS5HB Tong hanger.		
		SQ_ Swivel stem hanger (specify length in 2" increments)	HC36 Chain hanger - 36".		WGMS5HBZ 4' wire guard, zinc coated.		

Notes

- 1 Available in 2 lamp only.
- 2 MVOLT (120-277 volt).
- 3 F54T5HO only.
- 4 Specify voltage.

Fluorescent

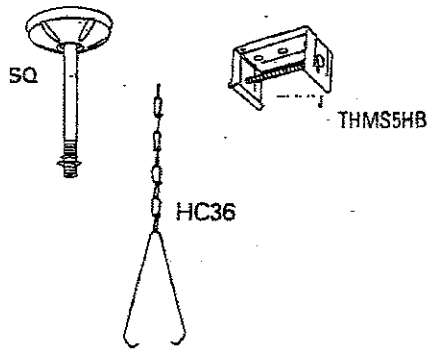
Sheet #: MS5HB-LV

WRAP-353

MS5HB T5 Fluorescent High Bay – Louver

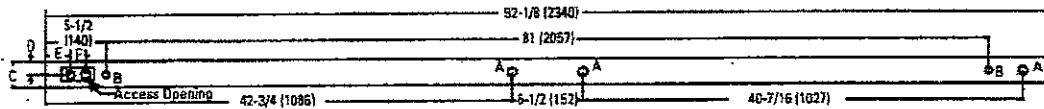
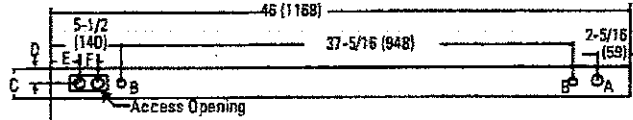
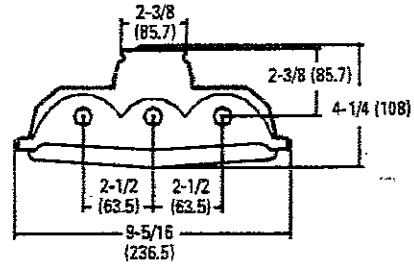
MOUNTING DATA

For unit or row installation, surface or stem mounting.
 Unit installation — Minimum of two hangers required.
 Row installation — One hanger per channel plus one per row required.
 Hanging devices illustrated below.



DIMENSIONS

- A = 7/8" (22) KD
- B = 11/16" (18) KD
- C = 2-3/8" (60)
- D = 1-3/16" (30)
- E = 2-5/16" (59)
- F = 1-3/8" (35)



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

MS5HB 3 54T5HO SBL ND
 Report: LTL10380
 LUMENS PER LAMP#4450
 Luminaire Efficiency: 93.0%

MS5HB 3 54T5HO SBL WD
 Report: LTL10773
 LUMENS PER LAMP#4400
 Luminaire Efficiency: 88.3%

MS5HBST 2 54T5HO SBL ND
 Report: LTL10989
 LUMENS PER LAMP#4400
 Luminaire Efficiency: 98.8%

ROR	Coefficients of Utilization											
	pf	20%					30%					
		pc	80%	50%	10%	50%	30%	10%	50%	30%	10%	
0	110	110	110	102	102	102	97	97	97			
1	102	98	95	91	89	86	87	85	83			
2	94	87	82	82	77	74	78	75	72			
3	87	78	71	73	68	64	70	66	62			
4	80	70	63	66	60	56	64	59	55			
5	74	64	56	60	54	50	58	53	49			
6	69	58	51	55	49	44	53	48	44			
7	65	53	46	51	45	40	49	44	40			
8	61	49	42	47	41	36	46	40	36			
9	57	45	38	44	37	33	42	37	33			
10	54	42	35	41	35	31	40	34	30			

ROR	Coefficients of Utilization											
	pf	20%					30%					
		pc	80%	50%	10%	50%	30%	10%	50%	30%	10%	
0	103	103	103	94	94	94	88	88	88			
1	94	90	86	82	79	77	77	75	73			
2	86	78	72	72	67	63	67	64	60			
3	78	69	61	63	57	53	59	55	51			
4	71	61	53	56	50	45	53	48	43			
5	65	54	46	50	44	39	47	42	38			
6	60	49	41	45	39	34	43	37	33			
7	56	44	36	41	35	30	39	33	29			
8	52	40	33	37	31	27	36	30	26			
9	49	37	30	34	28	24	33	27	23			
10	46	34	27	32	26	22	30	25	21			

ROR	Coefficients of Utilization											
	pf	20%					30%					
		pc	80%	50%	10%	50%	30%	10%	50%	30%	10%	
0	118	118	118	110	110	110	105	105	105			
1	108	103	99	97	94	91	93	91	88			
2	98	91	84	85	80	76	82	78	74			
3	90	80	72	75	69	64	73	67	63			
4	83	71	63	67	60	55	65	59	54			
5	76	64	55	60	53	48	59	52	47			
6	70	57	49	55	47	42	53	47	42			
7	65	52	44	50	43	37	49	42	37			
8	61	48	40	46	39	34	45	38	33			
9	57	44	36	42	35	30	41	35	30			
10	53	41	33	39	32	28	38	32	27			

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	4702	35.2	37.9
0° - 40°	7005	52.5	56.4
0° - 60°	10383	77.8	83.6
0° - 90°	12005	89.9	96.6
90° - 180°	417	3.1	3.4
0° - 180°	12422	93.0	100.0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	2883	21.8	24.7
0° - 40°	4689	35.5	40.2
0° - 60°	8319	63.0	71.3
0° - 90°	10614	80.4	91.0
90° - 180°	1046	7.9	9.0
0° - 180°	11660	88.3	100.0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	2599	29.5	29.9
0° - 40°	4162	47.3	47.9
0° - 60°	7064	80.3	81.2
0° - 90°	8696	98.8	100.0
90° - 180°	0	0.0	0.0
0° - 180°	8696	98.8	100.0



Lithonia Lighting
 Acuity Lighting Group, Inc.
 Fluorescent
 One Lithonia Way, Conyers, GA 30012
 Phone: 800-858-7763 Fax: 770-929-8789
 In Canada: 160 avenue Labrosse, Point-Claire, P.Q. H9R 1A1
 www.lithonia.com



FEATURES & SPECIFICATIONS

INTENDED USE

Intended for use in retail stores, warehouses and manufacturing applications where high lumen package in a compact fixture is required.

ATTRIBUTES

Product is specifically designed for operation with T5HO lamps.

CONSTRUCTION

Channel and louvers are formed from cold-rolled, 20-gauge steel. No asbestos is used in this product.

End caps include knockouts for through wiring and fixture attachment in row mounting applications. Compact sockets feature rotating collars and enclosed contacts.

Designed for simple servicing, louver assembly hinges remain attached and hinge down providing easy access into the optical system.

FINISH

High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM

The Narrow Distribution (ND) includes a Miro4™ parabolic reflector system to provide high vertical and good horizontal illumination for aisle or rack lighting. The Wide Distribution (WD) is ideal for general area lighting at higher mounting heights or where widespread distribution is preferred. Both distributions are available with white straight blade louver for additional shielding and brightness control. Uplight component softens ceiling appearance to reduce the "cavern effect".

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, A+ sound rated electronic ballast. AWM TFM or THHN wire used throughout, rated for required temperatures. All ballasts are available for use in standard ambient temperatures. Consult factory for elevated ambient temperature applications.

INSTALLATION

A variety of mounting arrangements is available including tong hangers, aircraft cables and stems. Suitable for mounting in continuous row or individual mounting. End caps include knockouts for through wiring and fixture attachment in row mounting applications.

LISTING

UL listed. CSA optional; (consult factory)

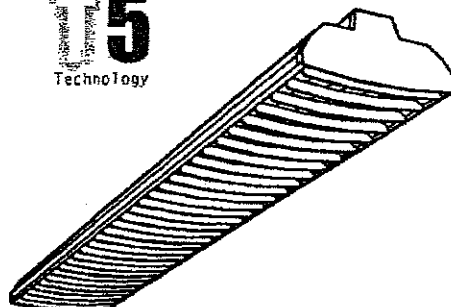
WARRANTY

Guaranteed for one year against mechanical defects in manufacturing.

Catalog Number	
TMS5HB 3 54T5HO SBL WD MVOLT 1/4 1/2 GEB10PS EL55	
Notes	Type
POINT PLEASANT ARMORY	MEM 42

T5 Fluorescent High Bay – Louver

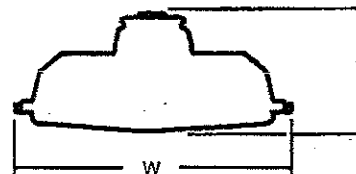
MS5HB



4' or 8' Lengths
2, 3 Lamps

Specifications

Length:	46-1/16" (1170)
	92-1/8" (2340)
Width:	9-3/4" (248)
Depth:	4-1/4" (108)
Weight:	27.8 lbs (12.6 kg)



All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

Example: TMS5HB 3 54T5HO SBL ND MVOLT GEB10PS

Series	Lamp type	Configuration	Distribution	Voltage	Options
MS5HB T5 low-profile direct/indirect	28T5 28W T5 (46") 54T5HO 54W T5HO (46")	SBL White straight blade louver assembly	ND Narrow WD Wide	MVOLT ² 347 480 ³	1/3 One 3-lamp ballast ² 1/4 One 4-lamp ballast ² GEB10PS Electronic program rapid start ballast, <10% THD GLR Internal fast-blow fuse ⁴ GMF Internal slow-blow fuse ⁴ EL55 Emergency battery pack (nominal 390-700 lumens) ⁴ CSA CSA Certified
MSSHBST T5 low-profile solid top ¹					1/2 One 2-Lamp Ballast
For tandem double-length unit, add prefix T. Example: TMS5HB	Number of lamps 2, 3 Not included	Accessories Order as separate catalog number. MSHBAC_ Adjustable aircraft cable support (non-feed), (specify length as 36, 72 or 120 inches). MSHBACF_ Aircraft cable feed and support, (specify length as 36, 72 or 120 inches). THMS5HB Tong hanger. SQ_ Swivel stem hanger (specify length in 2" increments) HC36 Chain hanger - 36". WGM55HBZ 4' wire guard, zinc coated.			

- Notes
- 1 Available in 2 lamp only.
 - 2 MVOLT (220-277 volt).
 - 3 F54T5HO only.
 - 4 Specify voltage.

Fluorescent

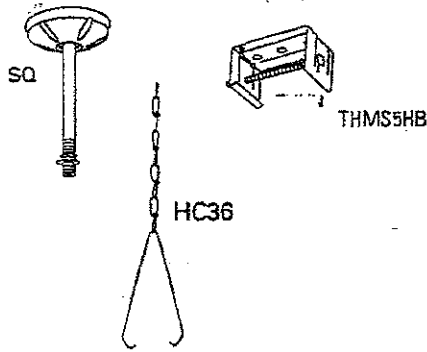
Sheet #: MS5HB-LV

WRAP-353

MS5HB T5 Fluorescent High Bay – Louver

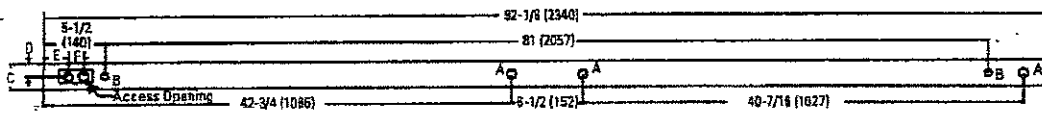
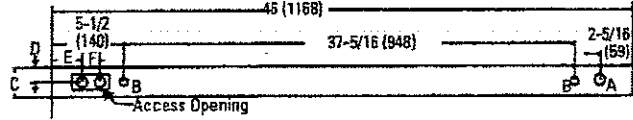
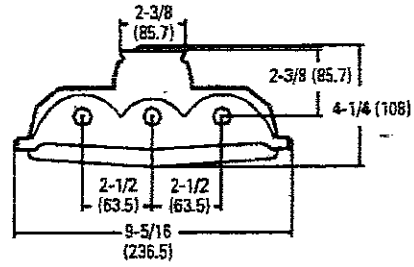
MOUNTING DATA

For unit or row installation, surface or stem mounting.
 Unit installation — Minimum of two hangers required.
 Row installation — One hanger per channel plus one per row required.
 Hanging devices illustrated below.



DIMENSIONS

- A = 7/8" (22) KO
- B = 11/16" (18) KO
- C = 2-3/8" (60)
- D = 1-3/16" (30)
- E = 2-5/16" (59)
- F = 1-3/8" (35)



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

MS5HB 3 54T5HO SBL ND
 Report: LTL10380
 LUMENS PER LAMP 4450
 Luminaire Efficiency: 93.0%

MS5HB 3 54T5HO SBL WD
 Report: LTL10773
 LUMENS PER LAMP 4400
 Luminaire Efficiency: 88.3%

MS5HBST 2 54T5HO SBL ND
 Report: LTL10989
 LUMENS PER LAMP 4400
 Luminaire Efficiency: 98.8%

		Coefficients of Utilization					
		20%		30%			
pc	pw	80%	50%	50%	30%	10%	10%
ROR	0	110	110	110	102	102	97
	1	102	98	95	91	89	86
	2	94	87	82	82	77	74
	3	87	78	71	73	68	64
	4	80	70	63	66	60	56
	5	74	64	56	60	54	50
	6	69	58	51	55	49	44
	7	65	53	46	51	45	40
	8	61	49	42	47	41	36
	9	57	45	38	44	37	33
	10	54	42	35	41	35	30

		Coefficients of Utilization					
		20%		30%			
pc	pw	80%	50%	50%	30%	10%	10%
ROR	0	103	103	103	94	94	88
	1	94	90	86	82	79	77
	2	86	78	72	72	67	63
	3	78	69	61	63	57	53
	4	71	61	53	56	50	45
	5	65	54	46	50	44	39
	6	60	49	41	45	39	34
	7	56	44	36	41	35	30
	8	52	40	33	37	31	27
	9	49	37	30	34	28	24
	10	46	34	27	32	26	22

		Coefficients of Utilization					
		20%		30%			
pc	pw	80%	50%	50%	30%	10%	10%
ROR	0	118	118	118	110	110	105
	1	108	103	99	97	94	91
	2	98	91	84	85	80	76
	3	90	80	72	75	69	64
	4	83	71	63	67	60	55
	5	76	64	55	60	53	48
	6	70	57	49	55	47	42
	7	65	52	44	50	43	37
	8	61	48	40	46	39	34
	9	57	44	36	42	35	30
	10	53	41	33	39	32	27

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	4702	35.2	37.9
0° - 40°	7005	52.5	56.4
0° - 60°	10383	77.8	83.6
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90° - 180°	1046	7.9	9.0
0° - 180°	11660	88.3	100.0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
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0° - 60°	7064	80.3	81.2
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90° - 180°	0	0.0	0.0
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 in Canada: 160 avenue Labrosse, Point-Claire, P.Q. H9R 1A1
 www.lithonia.com

Bracket Bar w/ 1" 1/4-20
Stud & Ground Screw

Type: **M/MEM**
Catalog Number: **MSHBAC36**
MSHBACF36
POINT PLEASANT ARMORY

44

Ceiling Canopy
Q5-14-W

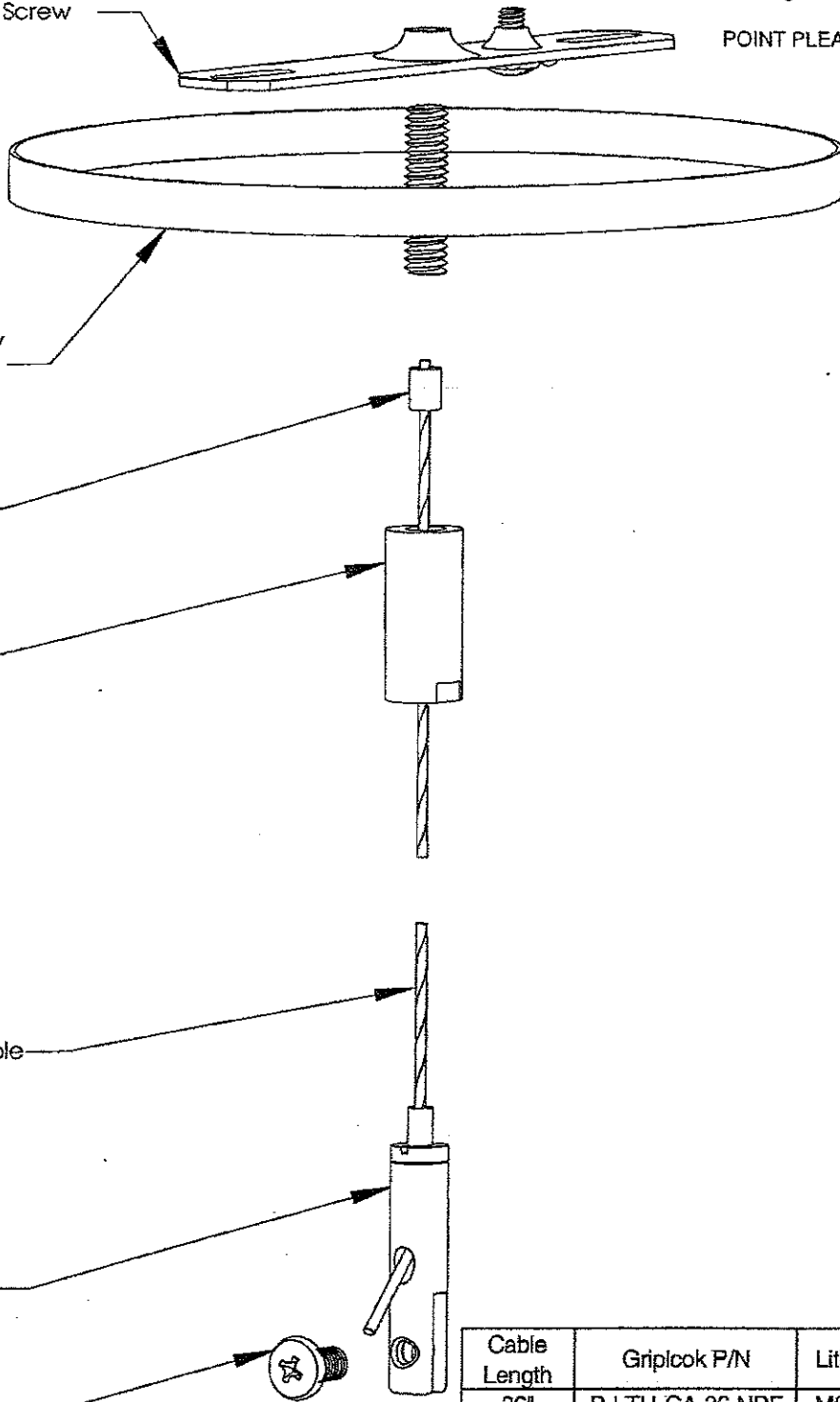
Stop Sleeve

CC-1420

1/16" Galv. Cable

Cable Gripper
15Z-GA

Pan Hed Screw
10-32



Cable Length	Griplock P/N	Lithonia P/n	Lithonia CI Code
36"	P-LTH-GA-36-NPF	MSHBAC36	773806
72"	P-LTH-GA-72-NPF	MSHBAC72	773787
120"	P-LTH-GA-120-NPF	MSHBAC120	773788

PROPRIETARY AND CONFIDENTIAL
This drawing and these specifications are the exclusive property of REUTLINGER USA INC. and shall not be divulged, reproduced, copied, or used as the basis for the manufacture or sale of apparatus without the express written authorization of REUTLINGER USA INC.
REF: DATE: 04/04/03
MATERIAL: NA
SCALE: 1:1 FILE: P-LTH-GA-XXX-NPF

GRIPLOCK SYSTEMS
410 Palm Ave. Loft A18, Carpinteria, CA 93013
Phone (805) 566-0064 Fax 9805) 566-0065

GRIP LOCK

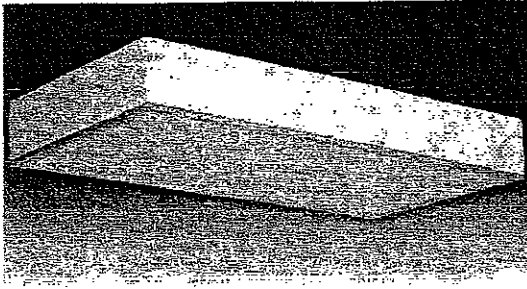
GRIPLOCK P/N: P-LTH-GA-XXX-NPF
CUSTOMER P/N: MSHBACXXX
DESCRIPTION: Lithonia 15Z-GA/CC-1420
Non Powerfeed Cable Assv set



S2 Series

Type: N
Catalog Number: HS2 6 54T5H 6
POINT PLEASANT ARMORY

FLUORESCENT | SURFACE **S**



2x TECHNISEAL® APPLICATIONS:

- UL/CUL Listed Wet Location (Classes 100-100,000; 150 Classes 5-9)
- Cleanroom (Classes 100-100,000; 150 Classes 5-9)
- UL/CUL Hazardous Location (Class I, Division 2; Groups A, B, C & D; Class II, Division 2; Groups F & G)
- NSF Certified Food Processing (Splash Zone, Food Zone)
- Industrial & Commercial
- UL Listed Marine (Inside, Inside Drip-Proof)
- Transit

BENEFITS:

- Luminaires adaptable to your specific needs

FEATURES:

- Available with IP 65 rating, add -IP65 suffix (requires stainless steel lens frame)
- Premium electronic ballast standard
- Available in stainless steel construction
- Every luminaire tested with lamps to assure customer satisfaction
- 5 year limited warranty
- Proudly made in USA

SPECIFICATIONS:

HOUSING:

Constructed of nominal 20GA (.036) zinc coated steel for unmatched corrosion protection. Two welded, tapered, threaded hubs on the ends provide a sealed wireway access. All seams are sealed with a long life acrylic sealant.

Food Zone: All external metal components of stainless steel (S3 option std).

REFLECTOR:

Fabricated of zinc coated steel, painted with a minimum reflectance of 88%.

LENS FRAME:

Exclusively designed, heavy duty, extruded, anodized aluminum with stainless steel captive screws used to hold the lens frame tight to the housing. The frame is supported by two cables while servicing.

Food Zone: All external metal components of stainless steel (S3 option std).

GASKETING:

An extruded, ribbed vinyl gasket seals the lens into the frame; with our exclusive, mechanically held, extruded, silicone gasket used to seal the frame to the housing.

Food Zone: Silicone sealant is used to seal the lens into the frame, with EPDM sealing the frame to the housing.

FINISH:

Painted surfaces are two mil white polyester enamel, special colors available.

LENS:

.140 extruded prismatic acrylic with 50% DR content for durability, smooth side out.

Food Zone: .156 extruded prismatic polycarbonate, smooth side out.

ELECTRICAL:

All ballasts and lampholders are UL Listed.

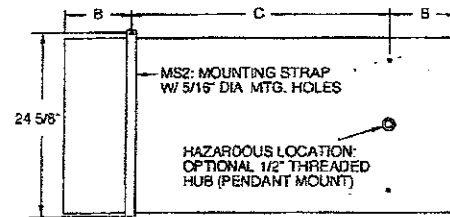
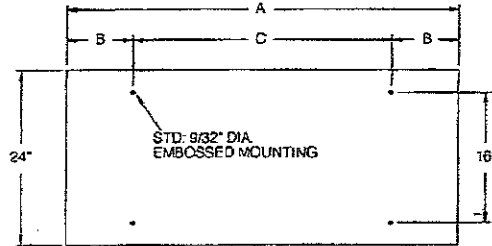
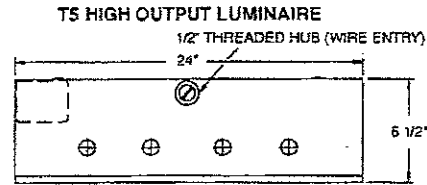
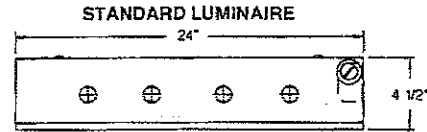
Marine: Utilizes a three gang terminal block for electrical connections.

MOUNTING:

Surface or custom detail available for covered ceiling installations.

TEMPERATURE CODE:

Class I, Div. 2= T5 (100°C); Class II, Div. 2= T5 (100°C)

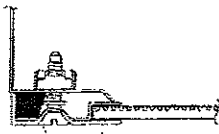


LENGTH	DIMENSIONS IN INCHES		
	A	B	C
2 FT	24	4	16
3 FT	36	10	16
4 FT	48	8	32

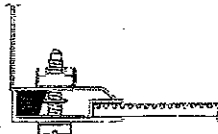
LENS FRAME DETAILS:



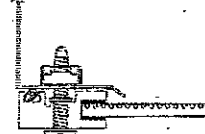
ALUMINUM LENS FRAME DETAIL



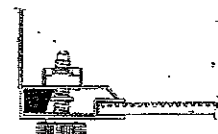
STAINLESS STEEL LENS FRAME DETAIL



HAZ. LOC. STAINLESS STEEL LENS FRAME DETAIL



SPLASH ZONE LENS FRAME DETAIL

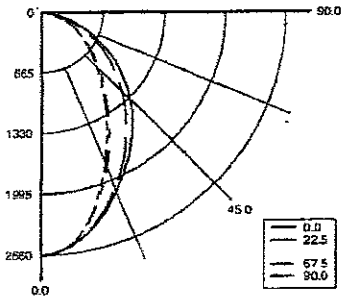


FOOD ZONE LENS FRAME DETAIL

-REV 4/05

PHOTOMETRICS:

Model S22324-R5, 4FT, Specular Reflector and Prismatic Acrylic Lens, 2 32W T8 Lamps, Lamp Lumen Rating = 3050



Coefficients of Utilization, Zonal Cavity Method

Floor Cavity Reflectance: 20%

RC	8			7			5			3			1			0		
RW	7	5	3	1	7	5	3	1	5	3	1	5	3	1	5	3	1	0
R 0	95	95	95	95	92	92	92	92	88	88	88	84	84	84	81	81	81	79
C 1	87	84	81	78	85	82	80	77	79	77	75	76	74	72	73	72	70	69
R 2	80	74	69	65	78	73	68	65	70	66	63	68	64	62	65	63	60	59
3	74	66	60	56	72	65	59	55	63	58	54	60	56	53	58	55	52	51
4	68	59	53	48	66	58	52	48	56	51	47	55	50	46	53	49	46	44
5	63	54	47	42	61	53	46	42	51	46	41	49	45	41	48	44	40	39
6	59	49	42	37	57	48	42	37	47	41	37	45	40	36	44	40	36	35
7	55	44	38	33	53	44	38	33	43	37	33	42	37	33	40	36	33	31
8	51	41	34	30	50	40	34	30	39	34	30	38	33	30	37	33	30	28
9	48	38	32	27	47	37	31	27	36	31	27	36	31	27	35	30	27	26
10	45	35	29	25	44	35	29	25	34	29	25	33	28	25	32	28	25	23

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	1740	28.5	35.8
0-40	2626	43.1	54.1
0-60	4110	67.4	84.6
0-90	4857	79.6	100
90-120	0	0	0
90-130	0	0	0
90-150	0	0	0
90-180	0	0	0
0-180	4857	79.6	100

Total Luminaire Optical Efficiency = 79.6%
Spacing Criterion: 0° = 1.06, 90° = 0.87

2x TECHNISEAL® SURFACE TROFFER ORDERING INFORMATION:

HS2	6	54T5H	6			
SERIES	LAMP QTY	LAMP TYPE	LENS	OPT MATERIAL	OPTIONS	VOLTAGE
S2 Wet Location Cleanroom	2* 3*		2 .125 Clear Acrylic (No Pattern) 3 .125 White Acrylic		EMERGENCY B1 Bodine BDL700 (0-50°C) B2 Bodine BDL500 (0-50°C) N/A < 3FT B3 Bodine BDL900 (0-50°C) B9 Bodine BHD65U (Hazardous Location) N/A < 3FT	120V/60Hz Standard 277V/60Hz 347V/60Hz
HS2* Hazardous	4* Standard		4 .140 Prismatic Acrylic (P12) (base)		BALLASTS D1 Lutron Dimming ECD-10 D2 Electronic Dimming D4 < 10% THD (Consult Factory) D8 Low-Temp Magnetic Ballast (N/A TB) D9 Magnetic Ballast E2 2 Electronic Ballasts E3 3 Electronic Ballasts E4 4 Electronic Ballasts E9 Rapid Start Electronic Ballast	50Hz & Other Voltages Available
SS2 Splash Zone	6* (TS Only)		6 .125 Clear Polycarbonate (No Pattern)		FUSING F1 G1R/HLR Fusing (Fast) F2 G4R/HLR Fusing (Slow)	
FS2 Food Zone	8* (TS Only)		7 .125 White Polycarbonate 8 .156 Prismatic Polycarbonate (P12) 9 .187 Tempered Glass (P62)		LENSING WET/HAZ/MAR H2 .150 Extra Heavy Clear Acrylic H3 .150 Extra Heavy White Acrylic H5 .156 C73 Tempered Glass H6 .187 Clear Tempered Glass J0 Lamp Sleeves (Specify Color) J2 D&D Clear Acrylic Overlay J4 .020 White Acrylic Overlay (Lamp Side) J6 .080 Clear Polycarbonate Overlay	
RS2 Marine Inside			LENSES AVAILABLE FOR FOOD ZONE 6 .125 Clear Polycarbonate (No Pattern) 7 .125 White Polycarbonate 8 .156 Prismatic Polycarbonate (P12) (base) 9 .187 Tempered Glass (P62)		MOUNTING M1 Pendant Mount (Pendants By Others) M2 Mounting Bracket Kit (Surface / Ceiling)	
MS2* Inside Dry-proof			S2 Stainless Steel Housing S3 Stainless Steel Exterior S5 Stainless Steel Lens Frame Only 304 SS Standard, 316 SS and other materials available, consult agent		MISC IP65 IP rated P9 Special Paint Color (Provide Paint Code & Chip) R5 Specular Aluminum Reflector S1 Special Material (Consult Agent) T3 Tamper Resistant (Spinner STD, Others Avail.) V3 No Silicone Sealant Used W4 Inboard Outboard Wiring (Dual Switching) W5 Rear Wire Entry Y1 Nine Lite (Consult Agent) Y5 RFI Suppressors	
40BX F40T5T1 (2FT) N/A 6L	0°					
50BX F50T5T1 (2FT) N/A 6L	0°					
14TS* F14T5 (2FT)	0°					
17* F17T8 (2FT)	0°					
24T5H* F24T5/HO (4FT)	0°					
25* F25T8 (3FT)	0°					
28T5* F28T5 (4FT)	0°					
31U* F31T8/U 1 5/8" (2FT) N/A 4L	0°					
31U6* F31T8/U 6" (2FT) 2L Only	0°					
32* F32T8 (4FT)	0°					
48H F48T12/HO (4FT) N/A 6L	-20°					
54T5H* F54T5/HO (4FT)	0°					

* Lamp Type Available for Hazardous Location.
Other Wattages and Lengths Available, Consult Factory.
NSF Food Processing Note:
Food Zone (F prefix) luminaires come in DIRECT CONTACT with food.
Splash Zone (S prefix) units may become soiled, but are outside the danger of recontamination.

Project Information:
Type: N
Catalog Number: HS2 6 54T5H 6
POINT PLEASANT ARMORY

Information subject to change without notice. Lamps supplied by others.
© 2005 Paramount Industries, Inc. P.O. Box 259 Crosswell, MI 48422

FEATURES

INTENDED USE

Suitable for applications requiring both exit sign and unit equipment. Attractive, less than 10 inches tall, streamlined design is great for above-the-door applications and other tight fits.

CONSTRUCTION

Engineering-grade thermoplastic housing is impact-resistant, scratch-resistant and corrosion-proof. UL94V-0 flame rating. UV-stable white resin resists discoloration from natural and man-made light sources.

Rugged unibody housing snaps together with no additional fasteners. Faceplate and back cover are interchangeable on housing. Positive snap-fit tabs hold faceplate securely, yet pry out easily for lamp compartment access. Universal, directional chevron inserts are easily removed and reinserted.

Two 5.4WT-5 wedge-base krypton lamps with multi-faceted reflector and acrylic lenses provide superior optical control. Unique swivel-and-point arrangement permits full-range adjustment in lamp head direction.

Uniform graphics illumination without shadows or hot spots. Letters 6" high with 3/4" stroke

Special wording available in red or green lettering. Consult factory.

U.S. Patent No. D379,373, 5,526,251, 5,611,163, 5,646,502 and 6,499,866.

Canada Patent No. 80,141, 2,180,495.

LAMP

LED life exceeds 25 years, based on continuous operation. Low energy consumption — only 3.3 watts.

BATTERY

Sealed, maintenance-free lead-calcium battery delivers 90 minutes capacity to emergency lamps. Automatic recharge after 90-minute discharge. Test switch and LED provide visual and manual means of monitoring system operation. Slip-on battery terminals and polarized battery connector simplify installation and maintenance. Optional high-output battery (HO) to power a remote head or exit. See chart on back for details

ELECTRONICS

Custom microchip charger, developed by Lithonia Emergency Systems, provides increased reliability and maximizes battery life. AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Two-rate regulated charger minimizes energy consumption and provides low operating costs. Filtered charger output minimizes charge voltage ripple and extends battery life. Thermal protection senses circuitry temperature and adjusts charge current to prevent overheating and charger failure. Current-

limiting charger circuitry protects printed circuit boards from shorts.

Brownout protection.

INSTALLATION

Top, end or back mounting. Housing snaps to canopy with four positive-locking tabs. Cam locking pin secures housing to canopy

Easily removed mounting knockouts. Conduit entry knockout for 1/2" flexible conduit. J-box pattern on back panel.

LISTING

UL listed. Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards.

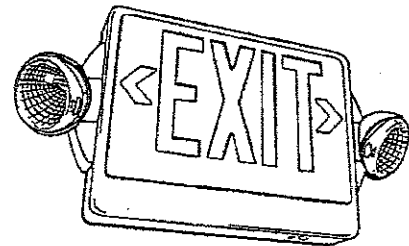
WARRANTY

Three-year total customer satisfaction warranty. LED lamps are guaranteed for three years. See Product Selection Guide for details.

Thermoplastic Exit/Unit Combo

LHQM

LED Lamps



ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers

Example: LHQM S W 1 R 120/277 FI

LHQM		S			120/277								
Family	Face type	Housing color	Number of faces	Letter color	Input voltage	Lamp Heads	Options						
LHQM LED type, two external lamp heads, S16	S Stencil	(blank) Black W White	1 Single face 2 Double face 3 Single face with extra faceplate and color panel	R Red G Green	120/277 Dual voltage	(blank) Krypton, EMLBA00042, rated 6 Vdc, 5.4W H Halogen, EMLBA00010, rated 6 Vdc, 6W	(blank) None	FI Fire alarm flashing interface ¹	FA Flashing emergency operation and intermittent audible alarm (66 times/min.; alarm 75 dB at 100cm)	H Two 6W tungsten halogen lamps ²	N Maintenance-free nickel-cadmium battery	HO High-output lead-calcium battery	RO Less lamp heads
Accessories													
Order as separate items.													
ELA MR24 K0606	Compact MR24 remote head (6W, 6V)												
ELA MR24 H0606	Compact MR24 remote head (6W, 6V halogen)												
ELA NX H0606	NEMA 4X, sealed-beam remote fixture (6V, 6W halogen)												
ELA WGHQM	Winguard (Back mount only)												

NOTES:

- Choice of FI or FA. Not available with both.
- Not available with HO or N.

HQM LED Exit/Unit Combo, Quantum

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SPECIFICATIONS

ELECTRICAL

Primary Circuit

	Rated LED life	Supply voltage	Max. amps	Max. watts
Red LED	25+ years	120 277	.23 23	3.3 3.3
Green LED	25+ years	120 277	.23 23	3.3 3.3

BATTERY

	Voltage	Shelf life ²	Expected life ²	Maintenance	Optimum temperature ⁴
Lead-calcium	6	6 months	5-8 years	none ³	60°-90°F
Li-cad (Ni)	6	3 years	7-9 years	none ³	32°-100°F

Notes:

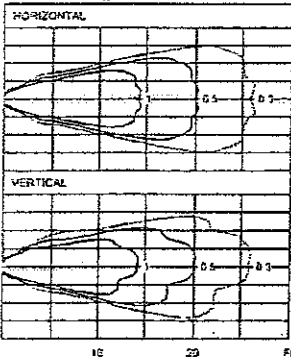
- Based on continuous operation.
- At 77°F.
- Periodic system status test recommended.
- Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity.
- Consult factory for detailed information.

REMOTE OUTPUT CAPACITY

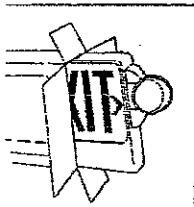
Standard Combo	Combo ni-cad battery (Ni)	Combo halogen lamps (H)	Combo high-output battery (HO)	Combo no heads (RO)	Combo heads (RO) & high-output battery (HO)
NA	NA	NA	12W	11W	23W

PHOTOMETRICS

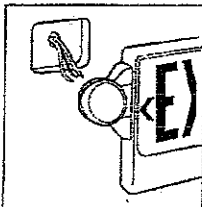
MR24 K0606
6-watts 5.1-watts incandescent



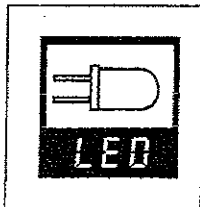
KEY FEATURES



Fully assembled at factory.



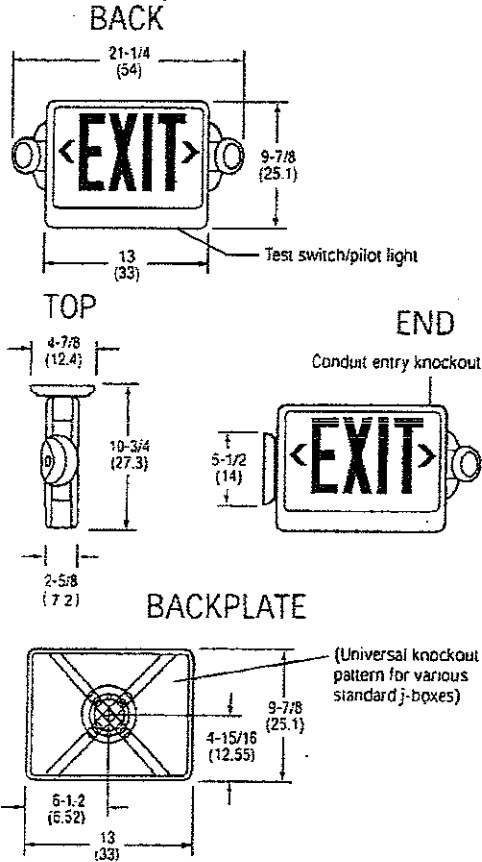
Install only one fixture instead of two



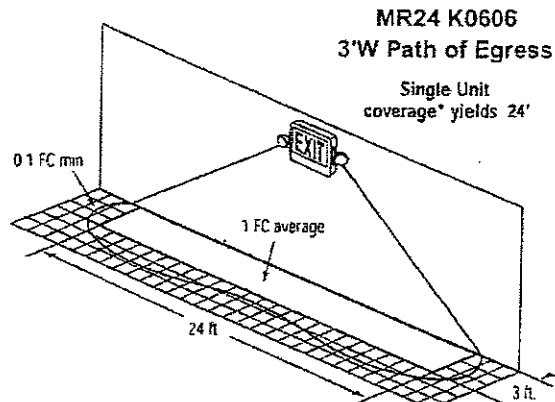
Unique LEDs provide extremely long life and low energy consumption.

MOUNTING

All dimensions are inches (centimeters).
Shipping weight: 7.35 lbs. (3.3 kgs.).



FIXTURE PERFORMANCE



* Meets Life Safety Code standard minimum illuminance of 0.1 FC and average illuminance of 1.0 FC. Assumes open space with no obstructions, mounting height, 7.5' ceiling height, 9', and reflectances: 80/50/20. Analysis based on independently tested photometrics.

LITHONIA LIGHTING®

An Acuity Brands Company

Sheet #: LHQM

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Lithonia Lighting

Acuity Lighting Group, Inc.
Emergency Lighting Systems
One Lithonia Way, Decatur, GA 30035
Phone: 800-334-8694
In Canada: 160 avenue Labrosse, Point-Clair, P.Q. H9R 1A1
www.lithonia.com



FEATURES

INTENDED USE

Suitable for applications requiring both exit sign and unit equipment. Attractive, less than 10 inches tall, streamlined design is great for above-the-door applications and other tight fits. High-capacity version with remote lamps are ideal for outdoor emergency egress lighting.

CONSTRUCTION

Engineering-grade thermoplastic housing is impact-resistant, scratch-resistant and corrosion-proof. UL94V-0 flame rating. UV-stable white resin resists discoloration from natural and man-made light sources.

Rugged unibody housing snaps together with no additional fasteners. Faceplate and back cover are interchangeable on housing. Positive snap-fit tabs hold faceplate securely, yet pry out easily for lamp compartment access. Universal, directional chevron inserts are easily removed and reinserted.

Two 5.4W T-5 wedge-base krypton lamps with multi-faceted reflector and acrylic lenses provide superior optical control. Unique swivel-and-point arrangement permits full-range adjustment in lamp head direction.

Uniform graphics illumination without shadows or hot spots. Letters 6" high with 3/4" stroke.

Special wording available in red or green lettering. Consult factory.

U.S. Patent No. D484,272, 5,526,251, 5,611,163, 5,797,673, 5,954,423, 6,142,648 and 6,848,798. Canada Patent No. 80,141, 2,180,495.

LAMP

LED life exceeds 25 years, based on continuous operation. Low energy consumption — only 3.3 watts.

BATTERY

Sealed, maintenance-free lead-calcium battery delivers 90 minutes capacity to emergency lamps. Automatic recharge after 90-minute discharge. Test switch and LED provide visual and manual means of monitoring system operation. Slip-on battery terminals and polarized battery connector simplify installation and maintenance. Optional high-output battery (HO) to power up to 6-volt, 12-watt remote load. See chart on back for details.

ELECTRONICS

Custom microchip charger, developed by Lithonia Emergency Systems, provides increased reliability and maximizes battery life. AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Two-rate regulated charger minimizes energy consumption and provides low operating costs. Filtered charger output minimizes charge voltage ripple and extends battery life. Thermal protection senses circuitry temperature and

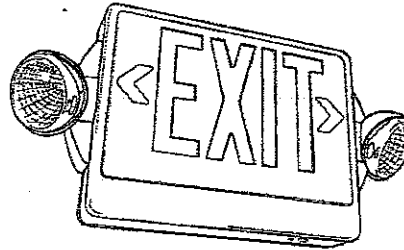
Catalog Number	LHQM S 1 R 120/277 HO	
Notes	POINT PLEASANT ARMORY	Type 48 EX/EMR



Thermoplastic Exit/Unit Combo

LHQM

LED Lamps



adjusts charge current to prevent overheating and charger failure. Current-limiting charger circuitry protects printed circuit boards from shorts.

Brownout protection.

INSTALLATION

Top, end or back mounting. Housing snaps to canopy with four positive-locking tabs. Cam locking pin secures housing to canopy.

Easily removed mounting knockouts. Conduit entry knockout for 1/2" flexible conduit. J-box pattern on back panel.

LISTING

UL listed. Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards.

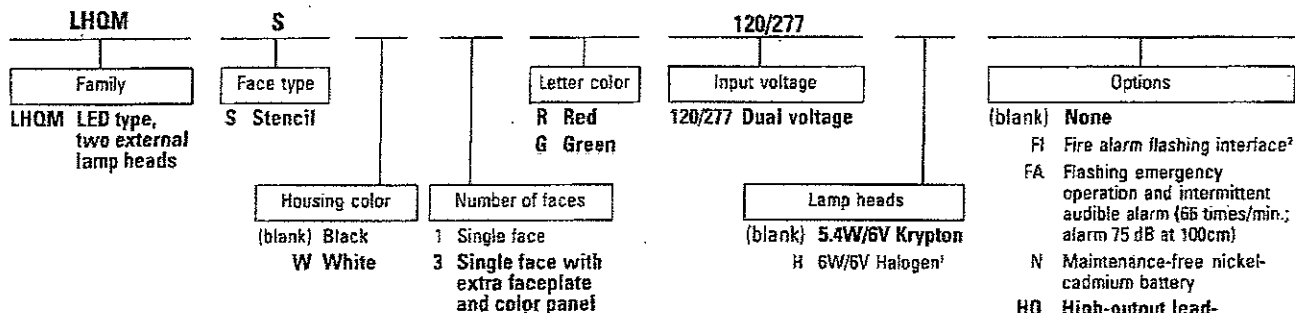
WARRANTY

Five-year total customer satisfaction warranty including LED lamps.

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).

Example: LHQM S W 3 R 120/277



Accessories

Order as separate items.

ELA MR24 K0606	Compact MR24 remote head (6W, 6V)
ELA MR24 H0606	Compact MR24 remote head (6W, 6V halogen)
ELA NX H0606	NEMA 4X, sealed-beam remote fixture (6W, 6V halogen)
ELA WGHQM	Wireguard (back mount only)

NOTES:

- Not available with N or HO options.
- Choice of FI or FA. Not available with both.
- Available with either N or HO option, not both.

LHQM QUANTUM[®] LED Exit/Unit Combo

50 SPECIFICATIONS

ELECTRICAL

Primary Circuit

	Rated LED life	Supply voltage	Max. amps	Max. watts
Red LED	25+ years	120 277	.23 .23	3.3 3.3
Green LED	25+ years	120 277	.23 .23	3.3 3.3

BATTERY

	Voltage	Shelf life ²	Expected life ²	Maintenance	Optimum temperature ⁴
Lead-calcium	6	6 months	5-8 years	none ³	60°-90°F
Ni-cad (N)	6	3 years	7-8 years	none ³	32°-100°F

Notes:

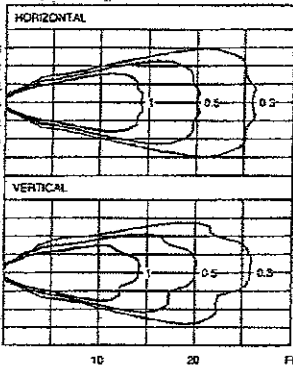
- 1 Based on continuous operation.
- 2 At 77°F.
- 3 Periodic system status test recommended.
- 4 Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity. Consult factory for detailed information.

REMOTE OUTPUT CAPACITY

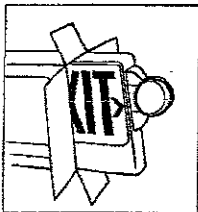
Standard combo	Combo\ ni-cad battery (N)	Combo\ halogen lamps (H)	Combo\ high-output battery (HO)	Combo\ no heads (RO)	Combo\ no heads (RO) & high-output battery (HO)
NA	NA	NA	12W	10.8W	24W

PHOTOMETRICS

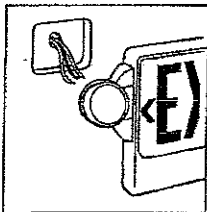
MR24 K0606
9-watt, 5.4-watt krypton



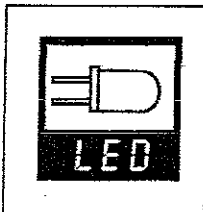
KEY FEATURES



Fully assembled at factory.



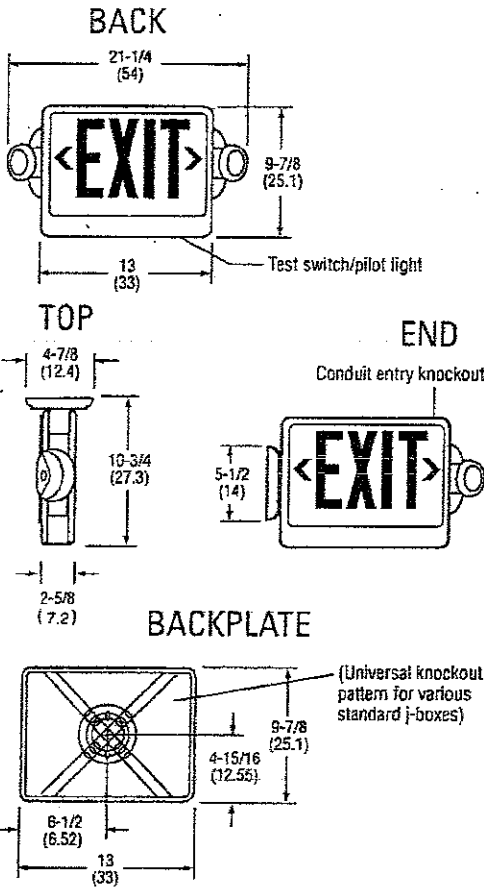
Install only one fixture instead of two.



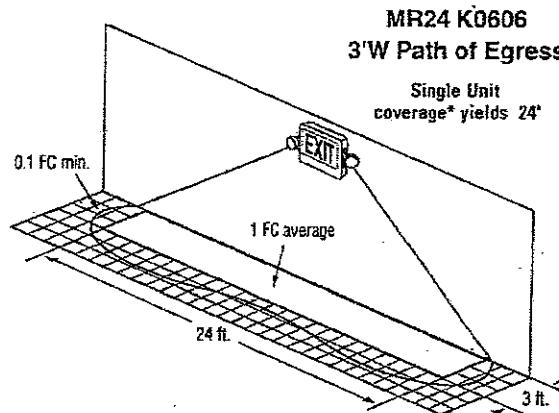
Unique LEDs provide extremely long life and low energy consumption.

MOUNTING

All dimensions are inches (centimeters).
Shipping weight: 7.36 lbs. (3.3 kgs.).



FIXTURE PERFORMANCE



* Meets Life Safety Code standard minimum illuminance of 0.1 FC and average illuminance of 1.0 FC. Assumes open space with no obstructions, mounting height: 7.5', ceiling height: 9', and reflectances: 80/50/20. Analysis based on independently tested photometrics.

LITHONIA LIGHTING[®]

An Acuity Brands Company

Sheet #: LHQM

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Lithonia Lighting
Emergency Lighting Systems
One Lithonia Way, Conyers, GA 30012
Phone: 800-334-8694
www.lithonia.com



Catalog Number		LQM S W 3 R 120/277 EL N
Notes	POINT PLEASANT ARMORY	Type 5 EX

FEATURES & SPECIFICATIONS

INTENDED USE

Ideal for applications requiring attractive, quick-installation exit signs and low energy consumption.

CONSTRUCTION

Engineering-grade thermoplastic housing is impact-resistant, scratch-resistant, and corrosion-proof. UL94V-0 flame rating. UV-stable resin resists discoloration from natural and man-made light sources.

Rugged unibody housing snaps together with no additional mechanical fasteners. Faceplate and back cover are interchangeable on housing. Positive snap-fit tabs hold faceplate securely, yet pry out easily for lamp compartment access.

Universal directional chevron inserts are easily removed and reinserted. Uniform graphics illumination without shadows or hot spots. Reinforced, impact-resistant color panels. Letters 6" high with 3/4" stroke.

U.S. Patent No. 5,526,251, 5,611,163, 5,729,639, 5,954,423, D495,751 and 6,502,044. Canada Patent No. 2,204,218. Other patents pending.

LAMPS

LEDs mounted on printed circuit boards. Expected LED life over 25 years. Low energy consumption—less than one watt. LED lamp operates in normal (AC input) and emergency (DC input) modes.

BATTERY

Sealed, maintenance-free nickel-cadmium battery delivers 90-minute capacity to emergency lamps. Automatic recharge after battery discharge.

Low-voltage disconnect prevents excessively deep discharge that can permanently damage battery. Conveniently located test switch and LED provide visual and manual means of monitoring system operation.

ELECTRONICS

Constant-current series charger minimizes energy consumption and provides low operating costs. Printed circuit boards are 100% quality tested during manufacturing. Current-limiting charger circuitry protects printed circuit boards from shorts.

DIAGNOSTICS (SD option only)

Two-state constant-current charger maximizes battery life and automatically recharges after battery discharge. Low voltage disconnect prevents excessive deep discharge that can permanently damage the battery. AC/LVD reset (line latch) allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Single-point microcomputer control for all electronic features.

Crystal oscillator timing system with watchdog protection for precision accuracy.

Brownout protection is automatically switched to emergency mode when supply voltage drops below 80% of nominal.



Thermoplastic Exits

LQM EL N



LED LAMPS
Emergency Operation
Nickel-Cadmium Battery



Single multi-chromatic LED indicator to display two-state charging, test activation and three-state diagnostic status.

Test switch provides manual activation of 30-second diagnostic testing for on-demand visual inspection. Self-diagnostic (option) testing for five minutes every 30 days and 30 minutes every six months.

Diagnostic evaluation of LED light source, AC to DC transfer, charging and battery condition.

Continuously monitors AC functionality.

INSTALLATION

Universal (top-, end-, or back-) mounting. Easily removed mounting knockouts. J-box pattern on back panel. Housing snaps to canopy with four positive-locking tabs. Cam-locking pin tightly secures housing to canopy.

LISTING

UL listed (standard). NOM Certified (see Options). Meets UL924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards, and State of Minnesota energy-efficient legislation requiring less than 20W consumption.

WARRANTY

Five-year total customer satisfaction warranty, including the LED lamps.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: LQM S-W 3 R 120/277 EL N

LQM				120/277		EL N	
Family	Face type	Housing color	Number of faces	Letter color	Input voltage*	Emergency operation	Options ¹
LQM	S Stencil P Panel ^{1,2}	(blank) Black W White	1 Single face ³ 3 Single face with extra faceplate and color panel	R Red G Green	120/277 Dual voltage	EL N Nickel-cadmium battery	(blank) None F Flashing emergency operation (one flash/sec) ^{1,3,5} FI Fire alarm flashing interface ^{1,5} FA Flashing emergency operation and intermittent audible alarm (one flash/sec) ^{1,5} NOM NOM Certified for Mexico ^{1,5,7} SD Self-diagnostics ¹

NOTES:

- See back of spec sheet for special housing dimensions. Consult factory for compatible accessories.
- Special wording available in red or green. Consult factory.
- Only available with options.
- Some special voltages available. Consult factory.
- Choice of F, FA or FI. Not available with more than one.
- Not available with SD.
- Not available with F, FA or FI options.

Accessories

Order as separate item.

- ELAWGEX Back-mount wireguard
- ELAWGEXT Top-mount wireguard
- ELAWGEXE End-mount wireguard

LQM EL N Emergency LED, Quantum

52 SPECIFICATIONS

ELECTRICAL

Primary Circuit

Type ¹	Rated LED life ²	Supply voltage	Input watts	Max. amps
		120	.71	.05
Red LED	25+ years	277	.92	.06
Green LED	25+ years	120	.86	.05
		277	.70	.06

BATTERY

Nickel-Cadmium

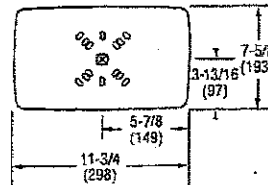
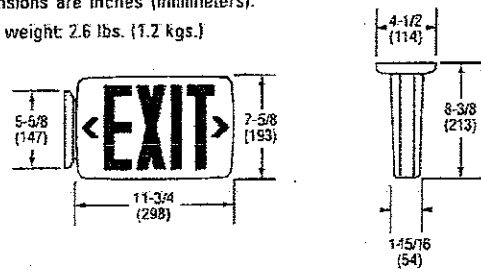
Voltage	Shelf life ²	Expected life ³	Maintenance	Optimum temperature ⁵
1.2 ⁶	3 yrs.	7-8 yrs.	none ⁴	32°-100°F (0°-37.8°C)

- LED lamps operate in normal (AC input) and emergency (DC input) modes.
- Based on continuous operation.
- At 77°F (25°C).
- Periodic system status test recommended.
- Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity. Consult factory for detailed information.
- 2.4 Volts for DL option.

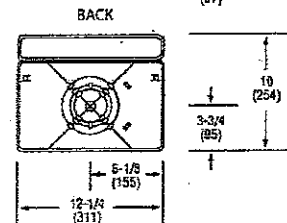
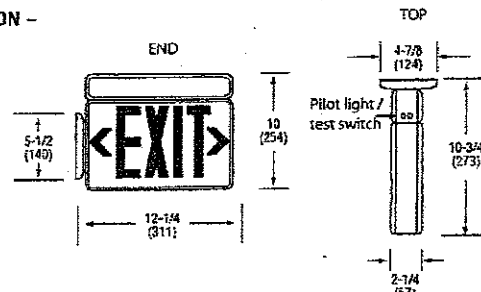
MOUNTING

All dimensions are inches (millimeters).

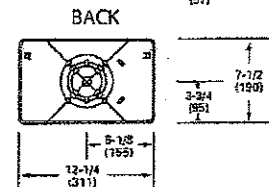
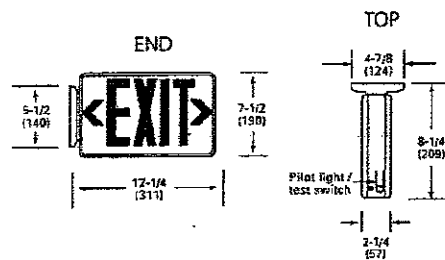
Shipping weight: 2.6 lbs. (1.2 kgs.)



SD OPTION -



With Options - Including: panel faceplates and black housing



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Sheet #: LQM-EL-N

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Lithonia Lighting

Emergency Systems Group

One Lithonia Way, Conyers, GA 30012

Phone: 800-334-8694 Fax: 770-981-8141

www.lithonia.com



FEATURES

INTENDED USE

Suitable for applications requiring both exit sign and unit equipment. Attractive, less than 10 inches tall, streamlined design is great for above-the-door applications and other tight fits. High-capacity version with remote lamps are ideal for outdoor emergency egress lighting.

CONSTRUCTION

Engineering-grade thermoplastic housing is impact-resistant, scratch-resistant and corrosion-proof. UL94V-0 flame rating. UV-stable white resin resists discoloration from natural and man-made light sources.

Rugged unibody housing snaps together with no additional fasteners. Faceplate and back cover are interchangeable on housing. Positive snap-fit tabs hold faceplate securely, yet pry out easily for lamp compartment access. Universal, directional chevron inserts are easily removed and reinserted.

Two 5.4W T-5 wedge-base krypton lamps with multi-faceted reflector and acrylic lenses provide superior optical control. Unique swivel-and-point arrangement permits full-range adjustment in lamp head direction.

Uniform graphics illumination without shadows or hot spots. Letters 6" high with 3/4" stroke.

Special wording available in red or green lettering. Consult factory.

U.S. Patent No. D484,272, 5,526,251, 5,611,163, 5,797,673, 5,954,423, 6,142,648 and 6,848,798. Canada Patent No. 80,141, 2,180,495.

LAMP

LED life exceeds 25 years, based on continuous operation. Low energy consumption — only 3.3 watts.

BATTERY

Sealed, maintenance-free lead-calcium battery delivers 90 minutes capacity to emergency lamps. Automatic recharge after 90-minute discharge. Test switch and LED provide visual and manual means of monitoring system operation. Slip-on battery terminals and polarized battery connector simplify installation and maintenance. Optional high-output battery (HO) to power up to 8-volt, 12-watt remote load. See chart on back for details.

ELECTRONICS

Custom microchip charger, developed by Lithonia Emergency Systems, provides increased reliability and maximizes battery life. AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Two-rate regulated charger minimizes energy consumption and provides low operating costs. Filtered charger output minimizes charge voltage ripple and extends battery life. Thermal protection senses circuitry temperature and

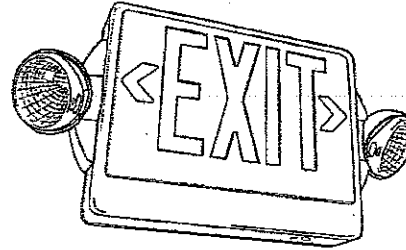
Catalog Number	LHQM S W 1 R 120/277 R0	
Notes	POINT PLEASANT ARMORY	Type 53 EXR



Thermoplastic Exit/Unit Combo

LHQM

LED Lamps



adjusts charge current to prevent overheating and charger failure. Current-limiting charger circuitry protects printed circuit boards from shorts.

Brownout protection.

INSTALLATION

Top, end or back mounting. Housing snaps to canopy with four positive-locking tabs. Cam locking pin secures housing to canopy.

Easily removed mounting knockouts. Conduit entry knockout for 1/2" flexible conduit. J-box pattern on back panel.

LISTING

UL listed. Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards.

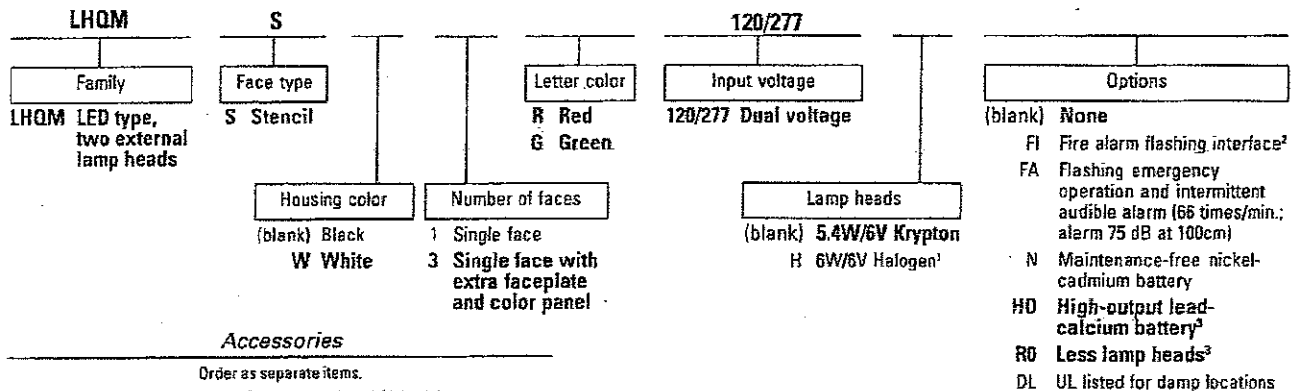
WARRANTY

Five-year total customer satisfaction warranty including LED lamps.

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).

Example: LHQM S W 3 R 120/277



Accessories

Order as separate items.

- ELA MR24 K0606 Compact MR24 remote head (6W, 6V)
- ELA MR24 H0606 Compact MR24 remote head (6W, 6V halogen)
- ELA NX H0606 NEMA 4X, sealed-beam remote fixture (6V, 6W halogen)
- ELA WGHQM Wireguard (back mount only)

NOTES:

- 1 Not available with N or HO options.
- 2 Choice of FI or FA. Not available with both.
- 3 Available with either N or HO option, not both.

LHQM QUANTUM® LED Exit/Unit Combo

54 SPECIFICATIONS

ELECTRICAL

Primary Circuit

	Rated LED life	Supply voltage	Max. amps	Max. watts
Red LED	25+ years	120 277	.23 .23	3.3 3.3
Green LED	25+ years	120 277	.23 .23	3.3 3.3

BATTERY

	Voltage	Shelf life ²	Expected life ²	Maintenance	Optimum temperature ⁴
Lead-calcium	6	6 months	5-8 years	none ³	60°-90°F
Ni-cad (N)	6	3 years	7-9 years	none ³	32°-100°F

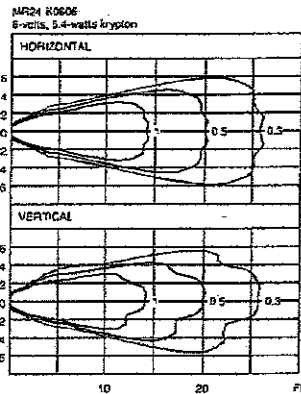
Notes:

- 1 Based on continuous operation.
- 2 At 77°F.
- 3 Periodic system status test recommended.
- 4 Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity. Consult factory for detailed information.

REMOTE OUTPUT CAPACITY

Standard combo	Combo\ ni-cad battery (N)	Combo\ halogen lamps (H)	Combo\ high-output battery (HO)	Combo\ no heads (RO) & heads (RO)	Combo\ no heads (RO) & high-output battery (HO)
NA	NA	NA	12W	10.8W	24W

PHOTOMETRICS



KEY FEATURES

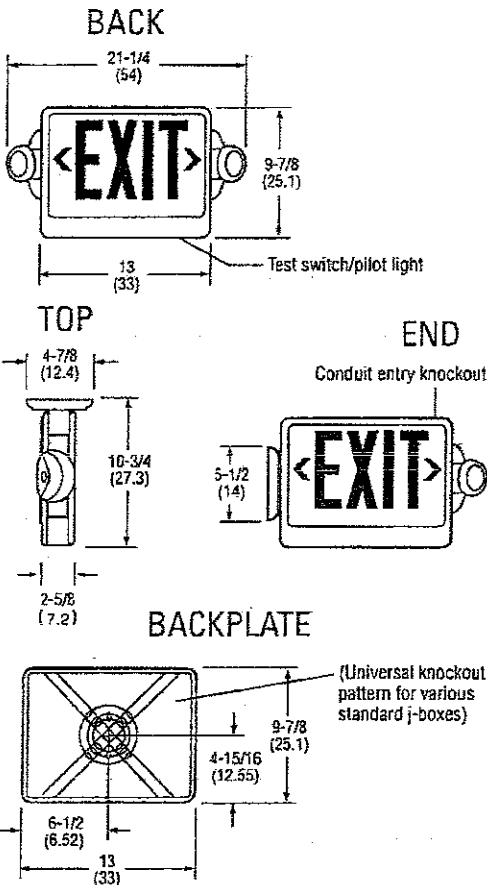
Fully assembled at factory.

Install only one fixture instead of two.

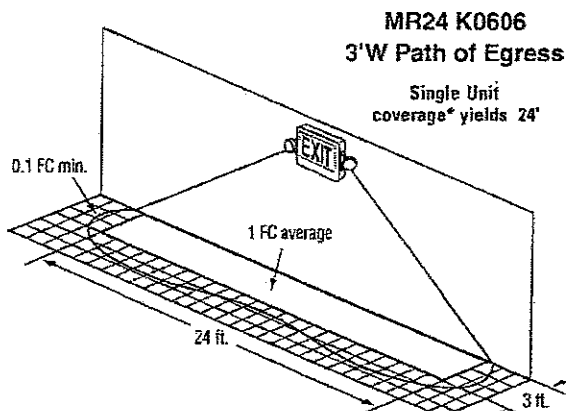
Unique LEDs provide extremely long life and low energy consumption.

MOUNTING

All dimensions are inches (centimeters).
Shipping weight: 7.36 lbs. (3.3 kgs.).



FIXTURE PERFORMANCE



* Meets Life Safety Code standard minimum illuminance of 0.1 FC and average illuminance of 1.0 FC. Assumes open space with no obstructions, mounting height: 7.5', ceiling height: 9', and reflectances: 80/50/20. Analysis based on independently tested photometrics.

LITHONIA LIGHTING®

An AcuityBrands Company

Sheet #: LHQM

©1995 Acuity Brands Lighting, Inc., Rev. 9/20/07

Lithonia Lighting
Emergency Lighting Systems
One Lithonia Way, Conyers, GA 30012
Phone: 800-334-8694
www.lithonia.com

FEATURES & SPECIFICATIONS

INTENDED USE

To be powered by 6, 12 or 24 volt battery equipment as part of an emergency lighting system providing light for the path of egress. Ideal for damp and wet location areas requiring remote lighting.

CONSTRUCTION

Single or twin heads available. Fully adjustable lamp heads meet all aiming requirements. Constructed of fiberglass-reinforced Lexan. Fully gasketed mounting plate. Removable bezel and sealed, phosphor-bronze slip-on lamp terminals.

INSTALLATION

Universal mounting plate for use with single or twin-head applications. Attaches to single gang J-box with a 3-9/32" hole spacing or comparable adaptations.

LAMP

Glass sealed-beam PAR36 lamp(s).

DIMENSIONS

Mounting base: 3-1/8"W (79mm) x 5"H (127mm)

Single: 7-3/4"H (197mm) x 4-3/4"W (121mm) x 4-9/16"D (115mm)

Twin: 6-5/8" (168mm) x 13" (330mm) x 3-11/16" (93mm)

LISTING

Listed for wet location in accordance with UL1598.

Catalog Number

ELA NX H0606

55

Notes

POINT PLEASANT ARMORY

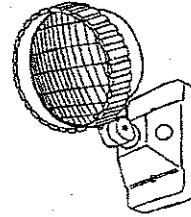
Type

RH

Unit Accessories

ELA NX

Sealed Remote Fixture



ORDERING INFORMATION

Example: ELA NX H1212

ELA		NX		Lamp type (PAR36 sealed-beam)	
Family	Housing color	Number of heads	Fixture		
ELA	(blank) Gray W White B Black	(blank) Single T Twin	NX Sealed and gasketed PAR36		
				<u>Incandescent</u>	
				N0806	8W/6V
				N1206	12W/6V
				N1212	12W/12V
				N1812	18W/12V
				N2512	25W/12V
				N3512	35W/12V
				<u>Halogen</u>	
				H0606	6W/6V
				H0806	8W/6V
				H1206	12W/6V
				H0812	8W/12V
				H1212	12W/12V
				H3512	35W/12V
				H5012	50W/12V

LITHONIA LIGHTING®
An Acuity Brands Company

Sheet #: ELA-IND-NX

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Lithonia Lighting
Emergency Systems Group
One Lithonia Way, Conyers, GA 30012
Phone: 800-334-8694 Fax 770-981-8141
www.lithonia.com



Catalog Number	VR4 2/26TRT MVOLT LPI	56
Notes	POINT PLEASANT ARMORY	Type P

FEATURES & SPECIFICATIONS

INTENDED USE

General illumination for rough service (vandal-resistant) applications. Ideal for interior or exterior applications where safety and security are a concern.

CONSTRUCTION

Backplate - Heavy-duty, 16-gauge cold-rolled steel. Insulated with 1" thick fiberglass.

Gasket - Closed-cell neoprene gasket seals out moisture and contaminants.

FINISH

White polyester powder coat for high reflectance, durability and corrosion resistance.

OPTICAL SYSTEM

Clear prismatic, UV-stabilized polycarbonate lens, nominal thickness .125" (1/8"). Prism optics provide uniformity with maximum spacing-to-mounting height ratios. Lens secured by either stainless steel tamper-resistant Torx® T-20 or standard stainless steel slotted hex-head screws (one of each included).

ELECTRICAL SYSTEM

Ballast - Electronic, Class P, High Power Factor multi-volt, THD <10% with a starting temperature of 0°F. Exceptions are 7TT and 9TT, 13TT, 22DTT and 28DTT Electromagnetic ballasts, 120V only. Socket - Thermoplastic socket(s).

Lamp - 35K lamp(s) included unless specified L/LP.

INSTALLATION

Keyhole slots simplify wall or ceiling installation. For maximum vandal-resistance, mount unit to structure through four knockouts provided.

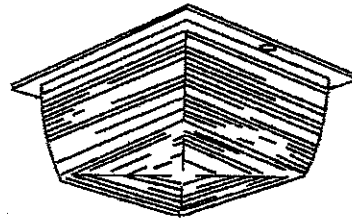
LISTING

UL Listed (standard). CSA Certified (see Options). UL Listed for wet locations for wall mount or in covered ceiling applications.

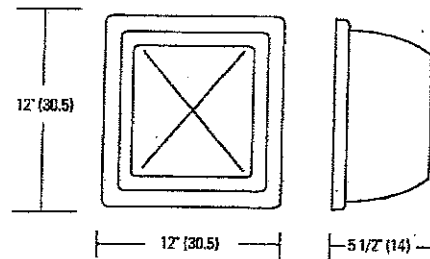
Specifications subject to change without notice.

Rough Service Fixture

VR4



COMPACT FLUORESCENT
Ceiling / Wall Mounted



All dimensions are inches (centimeters).

ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

Example: **VR4 32TRT MVOLT IR L/LP**

Series	Wattage	Lens	Options	Lamp ⁷	
VR4	2/7TT Two 7W twin-tube lamps ¹ 9TT One 9W twin-tube lamp ¹ 2/9TT Two 9W twin-tube lamps ¹ 13TT One 13W twin-tube lamp ¹ 2/13TT Two 13W twin-tube lamps ¹ 13DTT One 13W double twin-tube lamp 2/13DTT Two 13W double twin-tube lamps 18DTT One 18W double twin-tube lamp 2/18DTT Two 18W double twin-tube lamps 22DTT One 22W double twin-tube lamp ^{1,2} 2/22DTT Two 22W double twin-tube lamps ^{1,2} 26DTT One 26W double twin-tube lamp 2/26DTT Two 26W double twin-tube lamps 28DTT One 28W double twin-tube lamp ^{1,2} 2/28DTT Two 28W double twin-tube lamps ^{1,2} 26TRT One 26W triple-tube lamp 2/26TRT Two 26W triple-tube lamps 32TRT One 32W triple-tube lamp 42TRT One 42W triple-tube lamp	(Blank) Clear prismatic WP White polycarbonate	Voltage 120 277 347 MVOLT³	Shipped installed in fixture AL Aluminum backplate DS Dual switching EC Emergency circuit (Incandescent - 25W Max.) ⁴ GLR Internal fast-blow fusing ⁵ GMF Internal slow-blow fusing ⁵ IR Internal reflector NL Night-light (Incandescent - 7W Max.) ⁴ 4S Four screws per unit CSA CSA Certified Shipped separately⁶ EB4 Steel extension box EB4 CO Steel extension box with convenience outlet EB4 TS1 Steel extension box with toggle switch EB4 PEB1 Steel extension box with photoelectric cell (120V) EB4 PEB2 Steel extension box with photoelectric cell (277V) FV4 Steel vertical external visor	LPI Lamp(s) included (standard) L/LP Less lamp(s)

Accessories

Order as separate catalog numbers.

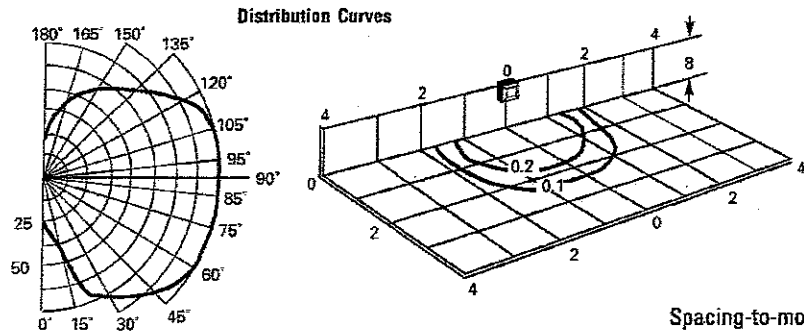
RK1 T20BIT	Hex-base driver bit, Torx TX20, for tamper-resistant screws with center reject pin.
RK1 T20DRV	Torx TX20 screwdriver for use with tamper-resistant screws with center reject pin.

NOTES:

- 120V only.
- 2-Pin 15MM lamp.
- Multi-volt electronic ballast (for DTT and TRT lamps) capable of operating on any line voltage between 120 and 277 volt.
- Lamp by others.
- Must specify voltage. Not available with MVOLT.
- For aluminum extension box or visor, add AL (Ex. EB4 AL).
- Lamp(s) included unless specified L/LP.

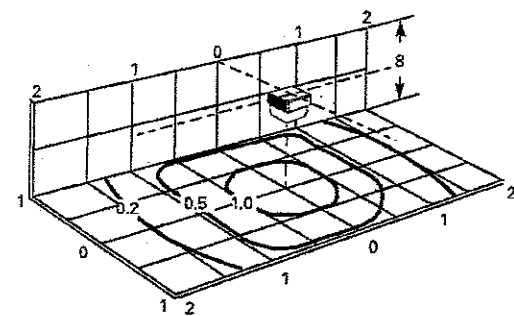
VR4 Rough Service Ceiling/Wall-Mounted Fixture, Fluorescent

VR4 13TT, 13W, Twin-tube fluorescent lamp, 900 rated lumens. Test number 80120-103.



Output Data		
Zone	Lumens	%lamp
0°-30°	38	4.2
0°-40°	72	7.9
0°-60°	163	18.1
0°-90°	327	36.3
90°-180°	279	31.1
0°-180°	606	67.4

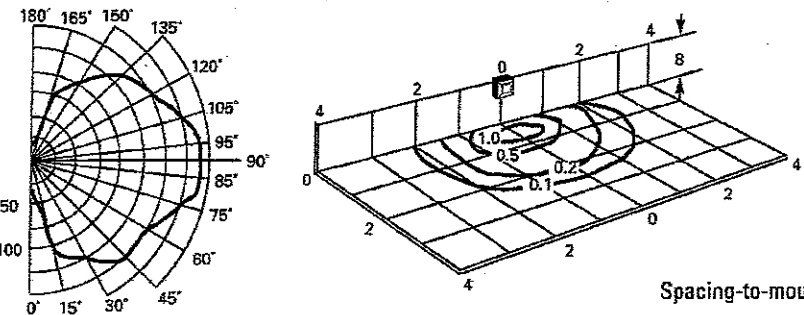
Spacing-to-mounting height: 1.2



Distribution Data			
	0°	45°	90°
0°	106	106	106
5°	106	106	106
15°	102	103	102
25°	92	95	92
35°	87	84	82
45°	87	81	81
55°	84	81	80
65°	72	78	71
75°	54	64	52
85°	38	50	34
90°	32	41	28

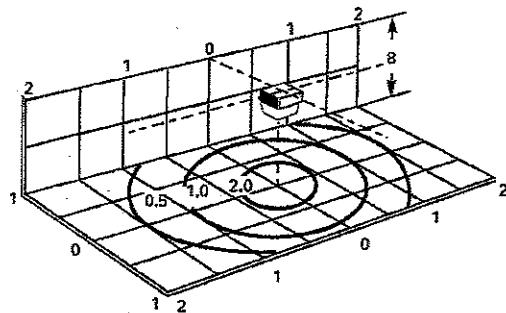
Coefficient of Utilization								
rf	rc	rw	20%					0%
			80%	30%	50%	30%	50%	
1	60	57	52	49	47	45	37	
2	51	46	44	40	40	37	29	
3	44	38	38	34	34	31	24	
4	39	33	34	29	31	27	20	
5	34	28	30	25	27	23	17	
6	31	25	26	22	24	20	14	
7	27	21	24	19	22	18	12	
8	25	19	22	17	20	16	11	
9	22	17	20	15	18	14	9	
10	20	15	18	14	16	13	8	

VR4 2/13TT, (2) 13W, Twin-tube fluorescent lamps, 900 rated lumens each. Test number 80057-104.



Output Data		
Zone	Lumens	%lamp
0°-30°	54	3.0
0°-40°	105	5.8
0°-60°	342	13.4
0°-90°	497	27.6
90°-180°	471	26.2
0°-180°	968	53.7

Spacing-to-mounting height: 1.3



Distribution Data			
	0°	45°	90°
0°	193	193	193
5°	194	193	192
15°	189	188	184
25°	173	175	175
35°	155	160	160
45°	147	150	155
55°	139	142	145
65°	116	137	139
75°	83	112	101
85°	50	78	64
90°	42	58	57

Coefficient of Utilization								
rf	rc	rw	20%					0%
			80%	30%	50%	30%	50%	
1	55	52	48	45	43	42	34	
2	47	43	41	37	37	34	27	
3	41	36	35	31	32	29	22	
4	36	31	31	27	28	25	19	
5	32	26	28	23	25	21	16	
6	28	23	24	20	22	19	13	
7	25	20	22	18	20	16	11	
8	23	18	20	16	18	15	10	
9	21	16	18	14	16	13	8	
10	19	14	16	13	15	12	7	

Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory data and actual field measurements. Dimensions and specifications on this sheet are based on the most current available data and are subject to change without notice.

Mounting Height Correction Factor

To obtain the footcandle value for different mounting heights multiply the footcandle value by the above correction factor.

MH	6'	10'	12'	14'
8'	1.78	0.64	0.44	0.33



Lithonia Lighting
 Acuity Lighting Group, Inc.
 Rough Service Lighting
 One Lithonia Way, Conyers, GA 30012
 Phone: 800-315-4693, Fax: 770-802-1531
 In Canada: 160 avenue Labrosse, Pointe-Claire, P.Q., H9R 1A1
 www.lithonia.com



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEFK8212

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
JOHN ABBOTT
304-558-2544

VENDOR

RFQ COPY
 HUGH REXRODE
 DANHILL CONSTRUCTION
 P O BOX 685
 GAULEY BRIDGE WV 25085

SHIP TO

DIV ENGINEERING & FACILITIES
NATIONAL GUARD ARMORY
COMBINED SUPPORT MAINT. SHOP
ROUTE 62 NORTH
PT. PLEASANT, WV
25550-9999 341-6368

DATE PRINTED 04/27/2008	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
-----------------------------------	---------------	----------	--------	---------------

BID OPENING DATE: **05/23/2008** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM #01		
				THIS ADDENDUM IS ISSUED TO MODIFY, ADD TO, AND EXTEND THE BID OPENING DATE, PER THE ATTACHED.		
				NEW BID OPENING DATE: 5/23/2008; 1:30 PM		
0001	1	LS		285-54		
				LIGHTING FIXTURES, INDOOR		
***** THIS IS THE END OF RFQ DEFK8212 *****						TOTAL: \$ 116,150.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Robert D. Hill</i>	TELEPHONE <i>304-632-1100</i>	DATE <i>5/23/08</i>
TITLE <i>President</i>	FEIN <i>55-0248251</i>	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

Addendum #1 – 24 April 08

Prepared / Submitted By: Joe McClung
Project Manager

RFQ Number: DEFK8212

Point Pleasant RSMS, Point Pleasant, West Virginia

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents.

**ATTACH THIS ADDENDUM TO THE FRONT COVER OF THE PROJECT MANUAL AND
 ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE BID FORM.**

CLARIFICATIONS/GENERAL COMMENTS:**Bidding Procedures**

- a. All Contractors submitting a bid are required to procure a bid packet from the State of West Virginia - Purchasing Division that contains specific instructions for submitting a bid. Contact Mr. John Abbott at State Purchasing for more information.
- b. Any and all questions pertaining to this project must be addressed through Mr. John Abbott during the bidding phase. Mr. John Abbott's phone number is (304)558-2544.

Pre-bid Conference

- a. A list of those attending the Pre-bid Conference is included in this addendum (Copy attached).
- b. Contractors were given the opportunity to inspect the RSMS Facility to review with Joe McClung the removal of existing light fixtures and the installation of new light fixtures..

Comments during Pre-Bid Meeting

- a. The question was asked, "Can the contractor work in the evenings". Till 6:00 pm.
- b. The question was asked, "Is there asbestos in the roof decking (Tectum) within the rebuild area". No is the answer.
- c. No exit/emergency light will be installed in the door exiting the spray booth room.
- d. The contractors are to assume responsibility for providing circuit, circuit breakers and conduit as required.
- e. Notice to proceed will be provided to the successful contractor 60 days after receipt of the contract. The long lead time in shipment of many of the fixtures is the reason for the 60 days.
- f. Explosion proof switches, circuits are to be provided as required.
- g. If ceiling tile is damaged in the hall way during installation of light fixtures WVANG will replace damaged tile.

Additional Information

- a. Additional site visits may be made by contacting Mr. Rick Holley @ (304) 561-6252.
- b. The Type P fixtures (6 ea.) are not to be a part of the contract. A revised enclosed Exhibit B shall reflect this.
- c. Added to the TYPE E fixtures an additional four (4) fixtures and the remove four (4) fixtures. The additional TYPE E is reflected in enclosed revised Exhibit B.
- d. The existing fixtures in the spray paint area shall be re-lamped with 400 watts metal halide lamps. In the specifications the original fixtures were noted to be re-lamped, but no mention of the wattage of the lamp.
- e. The project shall be performed by qualified electricians.
- f. The bid date has been revised from May 15th to May 23rd. The bid time shall remain the same.
- g. The contact person, Joe McClung shall be away from the office from April 27th to May 10th and will be in the office on May 12th. Please contact MAJ Michael J. Beaker at (304) 561-6333 with any questions during this time.

END OF ADDENDUM

Line No.	Type of Fixture	Quantity	Manufacture	Description of Lighting Fixtures	Prepared By: Joe McClung, DEF Line Comment
1	A	14	Lithonia Lighting	TMS8 3 32 SBL WD MVOLT 1/41/2 GEB10IS	
2	B	6	Lithonia Lighting	2LB 2 32 MVOLT GEB10IS	
3	C	2	Lithonia Lighting	WS 2 32 A12 MVOLT GEB10IS	
4	D	35	Lithonia Lighting	TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS	
5	DEM	6	Lithonia Lighting	TMS5HB 2 54T5HO SBL WD MVOLT GEB10PS EL55	
6	D/DEM	41	Lithonia Lighting	MSHBAC36	
7	D/DEM	41	Lithonia Lighting	MSHBAC36	
8	E	43	Lithonia Lighting	LB 2 32 MVOLT GEB10IS	
9	F	21	Lithonia Lighting	LB 3 32 MVOLT 1/3 GEB10IS	
10	G	2	Lithonia Lighting	TWS 42IRT-PE 120	
11	H	23	Lithonia Lighting	TWH400M LPI PE 120	
12	J	6	Lithonia Lighting	TWR1 175M LPI PE 120	
13	K	20	Lithonia Lighting	FSB 654L WGI	
14	K	20	Lithonia Lighting	THSDHB 120	
15	K	20	Lithonia Lighting	THSDSK 120	
16	M	12	Lithonia Lighting	TMS5HB 3 54T6HO SBL WD MVOLT 1/41/2 GEB10PS	
17	MEM	3	Lithonia Lighting	TMS5HB 3 54T6HO SBL WD MVOLT 1/41/2 GEB10PS EL55	
18	M/MEM	15	Lithonia Lighting	MSHBAC36	
19	M/MEM	15	Lithonia Lighting	MSHBAC36	
20	N	3	Lithonia Lighting	HS2 6 54T5H 6	
21	EX/EM	2	Lithonia Lighting	LHQM S W 1 R 120/277	
22	EX/EMR	7	Lithonia Lighting	LHQM S 1 R 120/277 HO	
23	EX	1	Lithonia Lighting	LQM S W 3 R 120/277 EL N M6	
24	EXR	1	Lithonia Lighting	LHQM S W 1 R 120/277 RO	
25	RH	7	Lithonia Lighting	ELA NX HO606	

5
 P.T. PLEASANTS LIGHTING 4-23-08

COMP. NAME	NAME OF INDIVIDUAL	TIME ARRIVED
WVANG	Joe Miley	9:13 A.M.
David's Electric	Frank Roush	9:30
FRAME	Michael Grundy	9:30
Masters Service	Becky Powell	9:30
Summit Elect.	Rick Gandy	9:30
Dan Hill cont:	Hugh Rexrode	9:30
Eight Treasures of Kentucky, LLC	Kenneth Elliott	9:45
PROGRESSIVE ELECTRIC	Duane Shurrow	9:55

CONTRACTOR LICENSE

Authorized by the

West Virginia Contractor Licensing Board

Number: WV001196

Classification:

ELECTRICAL
GENERAL BUILDING
HEATING, VENTILATING & COOLING
MULTIFAMILY
PIPING
PLUMBING
RESIDENTIAL

DANHILL CONSTRUCTION COMPANY
PO BOX 685
GAULEY BRIDGE, WV 25085-0685

Date Issued

Expiration Date

AUGUST 06, 2007

AUGUST 06, 2008

Robert D. Hill

Authorized Company Signature

Michael A. Carl

Chair, West Virginia Contractor
Licensing Board

**WEST VIRGINIA
CONTRACTOR
LICENSING
BOARD**

This license, or a copy thereof, must be posted in a conspicuous place at every construction site where work is being performed. This license number must appear in all advertisements, on all bid submissions and on all fully executed and binding contracts. This license cannot be assigned or transferred by licensee. Issued under provisions of West Virginia Code, Chapter 21, Article 11.

ACORD™ CERTIFICATE OF LIABILITY INSURANCE DATE (MM/DD/YYYY)
5/7/2008

PRODUCER (304)720-2000 FAX: (304)720-2002
 Mountain State Insurance Agency
 1206 Kanawha Blvd. E.
 Charleston WV 25301

INSURED
 DanHill Construction Company (Inc.)
 Box 685
 Gauley Bridge WV 25085


THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Westfield	24112
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES
 THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR/ADD'L LTR (INSRD)	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR	CWP3808332	5/24/2008	5/24/2009	EACH OCCURRENCE \$ 1,000,000
					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000
					MED EXP (Any one person) \$ 10,000
					PERSONAL & ADV INJURY \$ 1,000,000
					GENERAL AGGREGATE \$ 2,000,000
					PRODUCTS - COM/OP AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	CWP3808332	5/24/2008	5/24/2009	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
					BODILY INJURY (Per person) \$
					BODILY INJURY (Per accident) \$
					PROPERTY DAMAGE (Per accident) \$
	GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$
					OTHER THAN AUTO ONLY: EA ACC AGG \$
A	EXCESS/UMBRELLA LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$ 0	CWP3808332	5/24/2008	5/24/2009	EACH OCCURRENCE \$ 5,000,000
					AGGREGATE \$ 5,000,000
					\$
					\$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	CWP3808332	5/24/2008	5/24/2009	WC STATUTORY LIMITS OTHER \$
					E.L. EACH ACCIDENT \$ 1,000,000
					E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
	OTHER				E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
 This certificate is only for proof of insurance. This certificate does not confer on or extend insurance coverage to any recipient. This certificate does not amend any insurance coverages. All insurance coverages are subject of the policy terms and conditions.

CERTIFICATE HOLDER	CANCELLATION
For Insurance Purposes Only	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE Darlene Payne/DARLEN 



4700 MacCorkle Ave., S.E. Charleston, West Virginia 25304

PRODUCER:

BrickStreet Mutual Insurance Company
4700 MacCorkle Ave., S.E.
Charleston, WV 25304

CERTIFICATE HOLDER:

DANHILL CONSTRUCTION COMPANY
PO BOX 685
GAULEY BRIDGE, WEST VIRGINIA, 25085-0685

INSURED:

DANHILL CONSTRUCTION COMPANY
PO BOX 685
GAULEY BRIDGE, WEST VIRGINIA, 25085-0685

CERTIFICATE OF INSURANCE

The policy of insurance listed below has been issued to the insured named above for the policy period and coverage indicated. This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy below. Coverage is contingent on the insured's compliance with policy conditions and premium payment.

If the policy is canceled before the expiration date, BrickStreet Mutual Insurance Company will endeavor to mail a written notice to the certificate holder within 30 days of cancelation. Failure to mail the notice shall impose no obligation or liability of any kind upon BrickStreet Mutual Insurance Company.

POLICY NUMBER: WC 10009090-04

DATE CERTIFICATE ISSUED: 09/05/2007

POLICY EFFECTIVE DATE: 08/28/2007

POLICY EXPIRATION DATE: 08/28/2008

WORKERS COMPENSATION AND EMPLOYERS LIABILITY

LIMITS / COVERAGE

WORKERS COMPENSATION - STATUTORY LIMITS

EMPLOYERS LIABILITY LIMITS:

BODILY INJURY BY ACCIDENT:	\$ 100,000.00	EACH ACCIDENT
BODILY INJURY BY DISEASE:	\$ 500,000.00	POLICY LIMIT
BODILY INJURY BY DISEASE:	\$ 100,000.00	EACH EMPLOYEE

**WV BROAD FORM EMPLOYERS LIABILITY ENDORSEMENT -
COVERAGE FOR WV CODE 23-4-2(d)(2)(ii)**

**FEDERAL COAL MINE HEALTH AND SAFETY ACT COVERAGE ENDORSEMENT -
COVERAGE FOR WV CODE 23-4b-1 - FEDERAL BLACK LUNG COVERAGE**

SPECIAL PROVISIONS IF ANY:

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Danhill Construction Company
of Gauley Bridge, West Virginia, as Principal, and Colonial Surety Co.
of Montvale, New Jersey, a corporation organized and existing under the laws of the State of NJ
with its principal office in the City of Montvale, as Surety, are held and firmly bound unto the State
of West Virginia, as Obligee, in the penal sum of Five Thousand Eight Hundred Dollars (\$ 5,800.00) for the
payment of which, well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors
and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for
Lighting Fixtures, Indoor

NOW THEREFORE,

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached
hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the
agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full
force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event,
exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations
have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this
23rd day of May, 20 08.

Principal Corporate Seal

Danhill Construction Company
(Name of Principal)
By Robert D. Hill *Robert D. Hill*
(Must be President or
Vice President)
President
(Title)

Surety Corporate Seal

Colonial Surety company
(Name of Surety)
Chris Dozier *Chris Dozier*
Attorney-in-Fact

IMPORTANT - Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised corporate seals
must be affixed, a power of attorney must be attached.

Colonial Surety Company

Administrative Office
50 Chestnut Ridge Road
Montvale, NJ 07645

CONSENT OF SURETY

State of West Virginia, Division of Engineering & Facilities

Route 62 North

Point Pleasant , WV 25550

RE: **Lighting Fixtures, Indoor**

COLONIAL SURETY COMPANY organized and existing under the laws of the Commonwealth of Pennsylvania and duly qualified to transact business in the State of WV hereby agrees that **Danhill Construction Company**

Glen Ferris , WV
has submitted a proposal on the captioned project. We hereby agree that in the event an award is made to **Danhill Construction Company**

Glen Ferris , WV
that we will provide the required performance, payment and/or maintenance bonds.

Signed and sealed this 23rd day of May 2008.

COLONIAL SURETY COMPANY

BY: Chris Dozier
Chris Dozier (Attorney-in-Fact)

COLONIAL SURETY COMPANY

Duncannon, Pennsylvania
Administrative Office: 50 Chestnut Ridge Road, Montvale, New Jersey 07645

GENERAL POWER OF ATTORNEY

Know all Men by These Presents, That COLONIAL SURETY COMPANY, a corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania and having an administrative office in Montvale, Bergen County, NJ does by these presents make, constitute and appoint

Chris Dozier
Glen Ferris WV its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver.

Any and All Bonds

and to bind the Company thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment is made under and by authority of the following resolution adopted by the Board of Directors of the Colonial Surety Company at a meeting held on the 25th day of July, 1950.

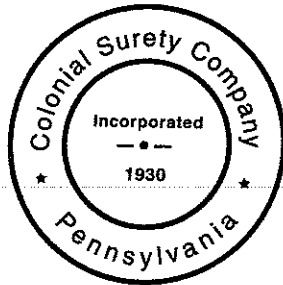
"Be it Resolved, that the President, any Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

"Section 1. Attorney-in-Fact. Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements of indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and attested by the Corporate Secretary."

"In Witness Whereof, Colonial Surety Company has caused these presents to be signed by its _____ President and its corporate seal to be hereto affixed the 8th day of September, A.D., 2006.

State of New Jersey
County of Bergen

SS.:



COLONIAL SURETY COMPANY

By Wayne Nunziata
Wayne Nunziata, President

On this 8th day of September, in the year 2006, before me
Theresa Simmons, a notary public, personally appeared
Wayne Nunziata, personally known to me to be the person who
executed the within instrument as President, on behalf of the corporation therein named and
acknowledged to me that the corporation executed it.



THERESA SIMMONS
A Notary Public of New Jersey
My Commission Expires September 2, 2010

Theresa Simmons
Theresa Simmons Notary Public

I, the undersigned Secretary of Colonial Surety Company, hereby certify that the above and foregoing is a full, true and correct copy of the Original Power of Attorney issued by said Company, and do hereby further certify that the said Power of Attorney is still in force and effect.

And I do hereby further certify that the Certification of this Power of Attorney is signed and sealed by facsimile under and by the authority of the following resolution adopted by the Board of Directors of the Colonial Surety Company at a meeting duly called and held on the 30th of January 1968, and that said resolution has not been amended or repealed:

RESOLVED, that the signature of the Secretary or any Assistant Secretary of this Corporation, and the seal of Corporation, may be affixed or printed by facsimile to any certificate to a Power of Attorney of this Corporation, and that such printed facsimile signature and seal shall be valid and binding upon this Corporation."

GIVEN under my hand and the seal of said Company, at Montvale, New Jersey this 23rd day of May, 20 08.

For verification of the authenticity of this Power of Attorney you may call (201) 573-8788 and ask for the Power of Attorney clerk. Please refer to the above named individual(s) and details of the bond to which the power is attached.

Frederick S. Gallo
Frederick S. Gallo, Secretary

State of West Virginia
County of Gayette

AND NOW, this 23rd day of May, in the calendar year of 2008, before me, a duly appointed and commissioned notary public, came the identified subscriber to the within instrument or instruments, and/or the demonstrated attorney-in-fact for said signatory and subscriber on said instrument or instruments, **Chris Dozier, attorney-in-fact of Colonial Surety Company**, an insurance company duly organized and existing under the laws of the Commonwealth of Pennsylvania and which is authorized to conduct business in this State, and that as such being authorized to do so, acknowledged that the within instrument or instruments were executed as the authorized act of his disclosed principal for the purposes therein contained, and declared to be a person executing said instrument or instruments as attorney-in-fact and with full capacity and competency, at the request of and on behalf of Colonial Surety Company therein named and acknowledged to me that the aforesaid Colonial Surety Company had authorized the execution by the aforesaid attorney-in-fact of said instrument or instruments with the intent to be legally bound as required by common and statutory law.

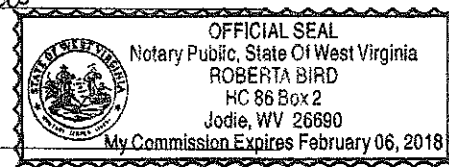
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

A Notary Public of West Virginia
My Commission Expires on 2-6-2018

Notary Public in and for the

County of Gayette
State of West Virginia

Roberta Bird
NOTARY PUBLIC



STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

LICENSING: Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY: The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and are in compliance with the requirements as stated.

Vendor's Name: Danhill Construction Company

Authorized Signature: Robert D. Hill Date: 5/23/08