



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
 7012C004

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
 PAUL REYNOLDS
 304-558-0468

VENDOR

RFQ COPY
West Virginia Signal & Light, Inc
 PO Box 134
 247 Kentuck Road
 Kenna, WV 25248

SHIP TO

DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 VARIOUS LOCALES AS INDICATED
 BY ORDER

DATE PRINTED 09/02/2011	TERMS OF SALE	SHIP VIA Best Way	F.O.B. Dest	FREIGHT TERMS Included
BID OPENING DATE: 09/28/2011		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001		EA		120-50	\$97.49 ea	
LIGHTS, BEACON AND SIGNAL (MARINE) REQUEST FOR QUOTATION OPEN END CONTRACT THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY THE WEST VIRGINIA DIVISION OF HIGHWAYS IS SOLICITING BIDS FOR AN OPEN END CONTRACT TO PROVIDE LED BEACONS PER THE ATTACHED SPECIFICATIONS. TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO PAUL REYNOLDS IN THE WEST VIRGINIA STATE PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS RFQ, VIA FAX AT 304-558-2596, OR VIA EMAIL AT PAUL.REYNOLDS@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 09/23/2011, AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED. EXHIBIT 3 LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE						

RECEIVED
 28 SEP 28 A 10:19
 DIVISION
 WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *Vance F...* TELEPHONE: 304-372-9648 DATE: 9/27/11

TITLE: Sales Engineer FEIN: 55-0646159 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. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, 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.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **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. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **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, and the West Virginia Insurance Commission. 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.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. 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. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. 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: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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 304-558-0468

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VENDOR

SHIP TO

DIVISION OF HIGHWAYS
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 VARIOUS LOCALES AS INDICATED
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/02/2011				

BID OPENING DATE: 09/28/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>James G. [Signature]</i>	TELEPHONE 304-372-9648	DATE 9/27/11
TITLE Sales Engineer	FEIN 55-0646159	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.</p> <p>REV. 05/26/2009</p> <p>EXHIBIT 4</p> <p>LOCAL GOVERNMENT BODIES: UNLESS THE VENDOR INDICATES IN THE BID HIS REFUSAL TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO COUNTY, SCHOOL, MUNICIPAL AND OTHER LOCAL GOVERNMENT BODIES, THE BID SHALL EXTEND TO POLITICAL SUBDIVISIONS OF THE STATE OF WEST VIRGINIA. IF THE VENDOR DOES NOT WISH TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO ALL POLITICAL SUBDIVISIONS OF THE STATE, THE VENDOR MUST CLEARLY INDICATE SUCH REFUSAL IN HIS BID. SUCH REFUSA</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE 304-372-9648	DATE 9/27/11
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<p>SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.</p> <p>REV. 3/88</p> <p>PURCHASING CARD ACCEPTANCE: THE STATE OF WEST VIRGINIA CURRENTLY UTILIZES A VISA PURCHASING CARD PROGRAM WHICH IS ISSUED THROUGH A BANK. THE SUCCESSFUL VENDOR MUST ACCEPT THE STATE OF WEST VIRGINIA VISA PURCHASING CARD FOR PAYMENT OF ALL ORDERS PLACED BY ANY STATE AGENCY AS A CONDITION OF AWARD.</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="text-align: center;">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: PAUL REYNOLDS FILE 33</p> <p>RFQ. NO.: 7012C004</p>						

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SIGNATURE	TELEPHONE 304-372-9648	DATE 9/27/11
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BID OPENING DATE:				09/28/2011		
BID OPENING TIME:				01:30 P.M.		
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						
				304-372-9684		
CONTACT PERSON (PLEASE PRINT CLEARLY):						
				Vance Fitzsimmons		
***** THIS IS THE END OF RFQ 7012C004 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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**LED BEACON
OR EQUAL CONTRACT
7012C004**

I. PURPOSE AND SCOPE:

The purpose of this Request for Quotation No. 7012C004 and resulting contract ("Contract") between West Virginia Department of Transportation, Division of Highways ("DOH") and the winning vendor ("Vendor") is to provide LED BEACONS as required by the WV DOH.

II. GENERAL REQUIREMENTS:

1. Exhibit A provides a list of part numbers that must be provided. Exhibit A must be completed for evaluation purposes. Exhibit A is Only a partial list of parts that may be required by DOH.
2. Upon request vendor will provide proof of all mandatory requirements.

III. PRICING:

1. This Contract shall be awarded based on a single price. Exhibit A.
2. This Contract shall be limited to the two items listed.
3. Vendor shall submit the Bid Evaluation Price Chart, attached hereto and incorporated herein by reference as Exhibit A, to allow bid evaluation. The Vendor should insert the manufacturer's discounted unit price in the space provided. The Vendor should then multiply the estimated quantity by the discounted unit price to obtain the total discounted price to agency.

IV. ORDERING INFORMATION:

1. Parts orders against this contract may be placed by the DOH Equipment Division and any other DOH District locations. A list of the current DOH locations is attached as Exhibit B. Orders may be placed by telephone and/or facsimile.

V. DELIVERY REQUIREMENTS:

1. Vendor must ship all items to DOH under this Contract FOB DESTINATION.
2. DOH will pay freight charges only if DOH request 24 hour delivery.
3. Vendor shall deliver the goods to the DOH locations as requested by DOH. A list of the DOH locations is attached hereto and incorporated herein by reference as Exhibit B. DOH reserves the right to change DOH locations or request delivery to another location

at no additional charge after notifying Vendor of the new location and requesting delivery thereto.

4. Delivery is an integral part of this contract and Vendor's failing to comply with the delivery terms will be grounds for submission of a WV-82 Form officially notifying the Purchasing Division and the Vendor of unsatisfactory performance.
5. Vendor's failure to obtain prior approval from DOH for changes to delivery schedules or to deliver the goods in a timely manner may be grounds for cancellation of this Contract.
6. Vendor must ship orders promptly upon receipt and delivery must be made within three (3) business days of receipt of an order. Vendor shall not require that a certain order quantity be met prior to shipping DOH orders.
7. If Vendor cannot deliver the goods ordered within three working days then Vendor shall immediately notify DOH of the anticipated delivery date. If DOH finds the delivery date unacceptable then DOH may purchase the needed items on the open market with approval from the DOH Equipment Division Director, the DOH District Equipment Supervisor, or a designee of either. Any open market purchase made hereunder shall be in accordance with the laws, rules, and regulations, of the Department of Administration, Purchasing Division.
8. DOH is not responsible for any restocking charge on items that are returned to Vendor as faulty or for failure to conform to the required specifications. In all other instances, DOH will only pay restocking fees if DOH, in its sole discretion, believes that such a charge is warranted.
9. All deliveries must be conspicuously marked with the DOH Purchase Order Number. Any goods delivered without this information may be returned to Vendor at Vendor's expense.

VI. PAYMENT:

1. The State of West Virginia currently utilizes a Visa purchasing card program. The State of West Virginia Visa purchasing card is the preferred method of payment, but other methods of payments may be utilized from time to time at the sole discretion of DOH. The successful vendor must accept the State of West Virginia Visa purchasing card for payment of all orders placed under this Contract.
2. Vendor must supply a credit receipt, sales receipt, or cash register receipt to DOH after Payment has been made.
3. Payment shall be made after DOH has received and accepted the goods being delivered. Vendor shall not charge the State of West Virginia Visa purchasing card until goods are received and accepted by DOH.

VII. MISCELLANEOUS:

1. All warranty claims that require field service shall be performed by Vendor at no cost to DOH.
2. Vendor shall furnish any technical engineering service which might be needed in the proper installation of these parts at no extra cost to the DOH.
3. Vendor shall comply with all federal, state, and local laws, rules and regulations.
4. Concurrently with each shipment, Vendor shall forward a proper and current Material Safety Data Sheet ("MSDS") to the DOH Equipment Division in Buckhannon, WV. Vendor shall also furnish the State of West Virginia and/or any of its other agencies with Additional MSDS as requested.
5. Vendor shall assume all liability and costs for failures and downtime that result from DOH use of Vendor's products.
6. This Contract will be awarded complete and not split.
7. Vendor must guarantee that it will maintain adequate stock to supply the needs of DOH at all times.

PLEASE SEE ATTACHED SPECIFICATIONS

CONTRACT 7012C004
LED BEACON

1.00 LED BEACON CLASS 1

1.1 Voltage 12V and 24V

1.2 AMPS 1.5 MAX @ 12.8V

2.0 Must have High Intensity White light source with 360 visibility (Yellow/Amber not acceptable)

2.1 Must have selectable flash patterns from external source

2.2 Must have high/low intensity circuit

2.3 Overall height not to exceed 6"

2.4 Must be RFI protected

2.5 Must have reverse polarity protection

3.0 Combination Mounting Base

3.1 Shall be made of polycarbonate not to exceed 6 3/4 "Diameter

3.2 Shall have 3 bolt mounting spaced at 120 degree and also have a female 1" NPT pipe fitting

4.0 Circuit Board and Electronics shall be conformal coated to provide moisture and corrosion protection.

5.0 Optic Dome must be Amber, made of polycarbonate meeting Standard 1079 or better.

6.0 Must meet SAE J845 May 1997, Class 1 in Amber

6.1 Must be AMECA Certified

6.2 Must provide proof of certifications with bid.

7.0 Warranty may be a factor in bid evaluation

- 7.1 Sample of bid unit may be required for RFI testing before award of Contract.
- 7.2 Vendor must provide literature which supports compliance to above specifications.
- 7.3 Quoted prices must include Freight Charges on quantities of 6 or more.
- 7.4 Freight may be charged on quantities of 5 or less.

EXHIBIT A: BID EVALUATION PRICE CHART

SINGLE ITEM PRICE \$97.49

Item No.	LED BEACONS No.	Estimated Quantity	Discounted Unit Cost	Total Discounted Cost to Agency
1	Whelen L21LAP 12 V or Equal	96	<u>\$97.49</u>	<u>\$9,359.04</u>
2	Whelen L21LAP4 24V or Equal	24	<u>\$97.49</u>	<u>\$2,339.76</u>
	GRAND TOTAL			<u>\$11,698.80</u>

✓

Sound off Signal
 Part#
 ELB45BCLO+
 WA
Is same part # for both units.

EXHIBIT B: DIVISION OF HIGHWAYS LOCATIONS

Equipment Division

WV Division of Highways
 PO Box 610
 Buckhannon, WV 26201
 ATTENTION: Kevin Riley (FOUR COPIES)

WVDOT/Division of Highways
 D-1
 1340 Smith St.
 Charleston, WV 25301
 Attn: Bob Heckert

WVDOT/Division of Highways
 D-2
 Po. Box 880
 Huntington, WV 25712
 Attn: Barbara King

WVDOT/Division of Highways
 D-3
 626 Depot St.
 Parkersburg, WV 26101
 Attn: Beverly Myers

WVDOT/Division of Highways
 D-4
 P.O. BOX 2570
 Clarksburg, WV 26301
 Attn: John Bartlett

WVDOT/Division of Highways
 D-5
 PO BOX 99
 BURLINGTON, WV 26710
 Attn: Laranda Baldwin

WVDOT/Division of Highways
 D-6
 1 DOT Drive.
 Moundsville, WV 26041-2353
 Attn: Carol Ryan

WVDOT/Division Highways
 D-7
 Drawer 1228
 Weston, WV 26452
 Attn: Melissa Jordan

WVDOT/Division of Highways
 D-8
 PO Box 1516
 Elkins, WV 26241
 Attn: Debbie Barnett

WVDOT/Division of Highways
 D-9
 103 ½ Church Street
 Lewisburg, WV 24901
 Attn: Sherry Bostic

WVDOT/Division of Highways
 D-10
 270 Hardwood Lane
 Princeton, WV 24740
 Attn: Tommy Camden

State of West Virginia
VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked:
Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or;
Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or;
Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked:
Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked:
Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked:
Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:
Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:
Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: West Virginia Signal Light Signed: [Signature]
Date: 9/27/11 Title: Sales Engineer

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

RFQ No. 7012C004

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 owned 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 instrumentally 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.

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

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: West Virginia Signal & Light, Inc.

Authorized Signature: [Signature] Date: 9/27/11

State of West Virginia

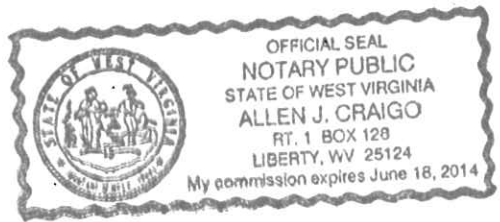
County of Jackson, to-wit:

Taken, subscribed, and sworn to before me this 27th day of September, 2011.

My Commission expires June 18, 2014, 20 .

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]



Please use this document for technical questions, posing in question format.

Technical Questions for RFQ: _____

Vendor Name: _____

Questions:

1. Specifications

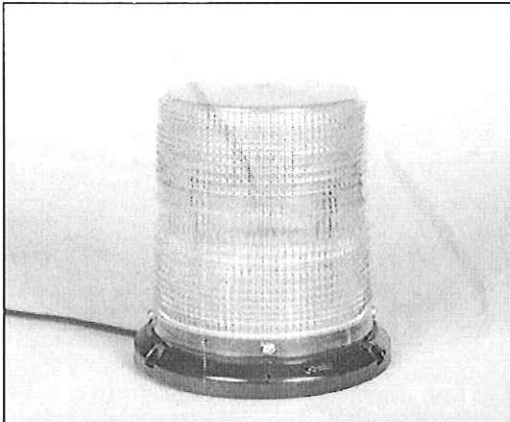
2 Delivery

3 Invoicing

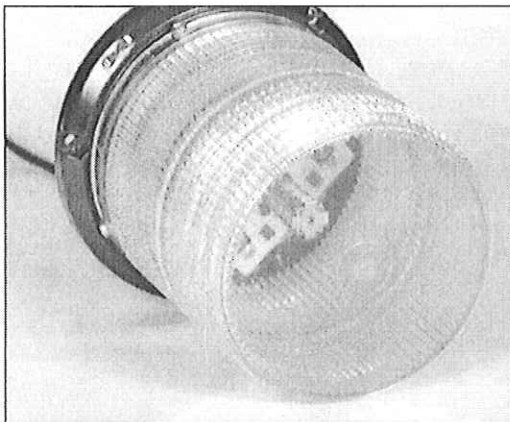
4 Award

Other:

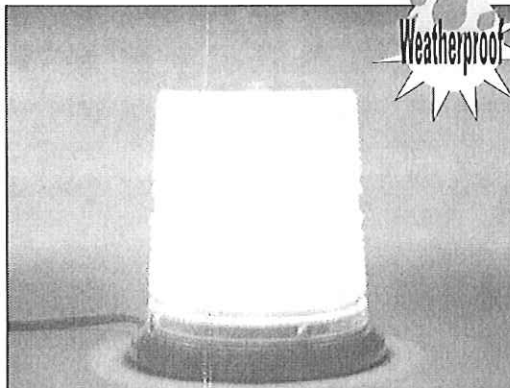
4500 Beacon (LED)



Class 1, Class 2 & ECE65 LED Beacons in 4" & 6" Dome heights with explosive LED power.



12 powerful Gen3 LEDs provide the brightness & fresnel lens optics disperses & maximizes output.



An Amber LED Beacon shown illuminated. Reliability & power packaged in a beacon - no more burned out strobe tubes to change!

Features

- Self-contained LED Beacon coming with superior optics and optimal 360° light distribution.
- Amber LED Beacon is rated at 1300 lumens for a bright signal in all weather conditions.
- LED lighting means low maintenance and less operating costs - no more replacement strobe tubes! Beacon is rated to last 20,000+ hours for a long-lasting and reliable light source.
- Features Double Fresnel Polycarbonate lens design - optics are molded into the inner and outer lens for better light distribution.
- Lens is made from a durable polycarbonate designed with premium optics & base is a sturdy cast aluminum with a black powder coat finish.
- Same footprint as our 4000 Series Strobe beacons so retrofitting from an existing strobe beacon is simple.
- Available in Magnetic or Permanent Mounts. Magnetic Mount beacon includes easy-to-install cigar plug.

See page 76 for Beacon Part Numbers/ Order Guide, Color Options, Warranty & Accessories.

TECHNICAL SPECIFICATIONS	
Flash Patterns:	8 patterns (user selectable)
Input Voltage Range:	10 - 30 Vdc
Current Consumption:	1 amp @ 12V, 0.5 amps @ 24V
Technology:	12 Gen3 LEDs, ECE65 16 Gen3 LEDs
Light Sync Technology:	Yes
Output:	Amber, Blue & White - 9 watts Red 6 - watts
Operating Temperature:	-40° to +65° C
Dimensions:	height x diameter
4" Low Dome	4.63" h x 6.35" diam.
6" High Dome	6.56" h x 6.35" diam.



(w/ Dust Cover)



(Blue & Amber only)

Beacon Order Guide

4500 LED Beacon Order Guide					
4500 Series	Mount	(z) Dome Height	(x)(y) (x)=LED Color, (y)=Dome Color		
	Class 1 Beacons: #ELB45BM(z)+(x)(y) Magnetic #ELB45BC(z)Ø(x)(y) Perm. Mnt. Class 2 Beacons: #ELB42BM(z)+(x)(y) Magnetic #ELB42BC(z)Ø(x)(y) Perm. Mnt.	L = 4" Low H = 6" High	AA = Amber/Amber BB = Blue/Blue GG = Green/Green JJ = Red/Blue & Red/Blue (Low Dome) RR = Red/Red	AC = Amber/Clear WC = White/Clear WA = White/Amber	
Example: #ELB45BMH+AA is a Class 1 Magnetic Mount Beacon with an Amber Dome & Amber LEDs.					
4000 Strobe Beacon Order Guide					
4000 Series	Power	Flash	Dome Height (xxx)	Mount (xxx)	Dome Color (xxx)
	4227xxx 20 watt	Double & Quad	L = 4" Low H = 6" High	C = Flat/Pipe Mount M = Magnetic Mount	A = Amber, B = Blue C = Clear, G = Green J = Red/Blue (Low Dome) R = Red
Example: #4227HMR is a 20 watt beacon w/ Double & Quad Flash, Magnetic Mount & a High 6" Red Dome.					
3000 Strobe Beacon Order Guide					
3000 Series	Power (3xxxxxx)	Flash (3xxxxxx)	Dome Height (3xxxxxx)	Mount (3xxxxxx)	Dome Color (3xxxxxx)
	3xxxxxx ØØ = Remote 1Ø = 10 watt 2Ø = 20 watt	Ø = Remote 7 = Double & Quad	L = 4" Low H = 6" High	C = Flat/Pipe Mount M = Magnetic Mount	A = Amber, B = Blue C = Clear, G = Green J = Red/Blue (Low Dome) R = Red
Example: #32Ø7LCA is a 20 watt beacon w/ a Double & Quad Flash, Flat/Pipe Mount & a Low 4" Amber Dome.					
7000 Strobe Beacon Order Guide					
7000 Series	Power (7xxxxxx)	Flash (7xxxxxx)	Dome Height (7xxxxxx)	Mount (7xxxxxx)	Dome Color (7xxxxxx)
	7xxxxxx ØØ = Remote 2Ø = 25 watt	Ø = Remote 1 = Single Flash 2 = Double Flash 4 = Quad Flash 5 = Quint Flash	L = 4" Low H = 6" High	C = Flat/Pipe Mount M = Magnetic Mount	A = Amber, B = Blue C = Clear, G = Green J = Red/Blue (Low Dome) R = Red
Example: #7ØØ4LCC is a 20 watt beacon w/ a Quad Flash, Flat/Pipe Mount & a Low 4" Clear Dome.					

Warranty

3000, 4000 & 7000 Strobe
Strobe Tube 1 Year, Electrical Components 2 Years.

4500 LED 5 Year No Hassle Warranty.

1000, 2000 & 5000 Strobe
1 Year No Hassle Warranty.

Accessories

(For 3000, 4000 & 4500 Beacons Only)

Metal Branch Guard for 4" Dome: #E360BG4

Metal Branch Guard for 6" Dome: #E360BG6

Clear Dust Cover: #E360DC6

(for CA Title 13 compliancy - fits both dome heights)

Colors

1000 Strobe 2000 Strobe
A=Amber, B=Blue A=Amber, B=Blue,
& R=Red C=Clear/White & R=Red

3000, 4000 & 7000 Strobe
A=Amber, B=Blue, C=Clear, G=Green, R=Red
& Split Dome J=Red/Blue (4" dome height only)

4500 LED Beacon
A=Amber**, B=Blue**, G=Green*, R=Red, W=White
& Split Dome J=Red/Blue (4" low dome height only)

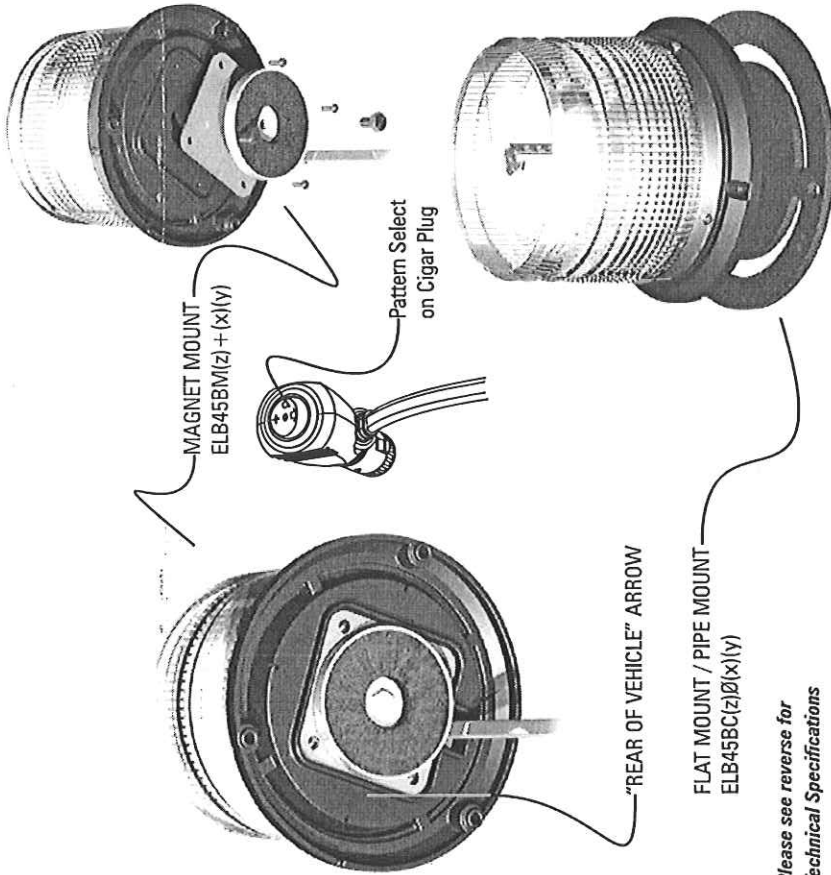
*Green is NOT Class 1 or Class 2 certified.

**Amber & Blue only are ECE65 certified.

5000 Strobe
A=Amber & C=Clear

SAE Class 1 LED Beacon

ELB45BM(z)+(x)(y) Magnet Mount
 ELB45BC(z)Ø(x)(y) Flat/Pipe Mount



Please see reverse for
 Technical Specifications

Important Information:

- Warning devices are strictly regulated and governed by Federal, State and Municipal ordinances. These devices shall be used ONLY on approved vehicles. It is the sole responsibility of the user of these devices to ensure compliance.
- DO NOT install this product or route any wires in the Air Bag Deployment Zone. Refer to your vehicle Owner's Manual for the location of any air bag deployment zones.
- DO NOT connect this device to a strobe power supply. This product is self-contained and does not require an external power supply.

INSTALLATION:

Magnet Mount

- 1) Install square metal plate with PEM nut up using M3x10mm screws as shown.
- 2) Carefully place beacon on steel top of vehicle with "Rear of Vehicle" arrow toward rear.
- 3) Route wire to 12V socket.

Flat Mount

- 1) Determine location where beacon is to be installed and drill $\frac{1}{2}$ " hole at the center for cord exit.
- 2) Using the housing as a guide mark the centers of hole positions in three places (note "Rear of Vehicle" Arrow) and drill appropriate pilot holes.
- 3) With wire through center of gasket make electrical connections.
- 4) Ensure "Rear of Vehicle" Arrow is in correct position and install 3 screws being careful not to strip out pilot holes. **DO NOT OVERTIGHTEN.**

Pipe Mount

Beacon may be installed on a vertical pipe with 1" NPT thread.

- 1) Feed wires through pipe and make electrical connections.
- 2) Screw base of beacon to pipe (clockwise). Adjust pipe or beacon so that "Rear of Vehicle" Arrow points to the rear.

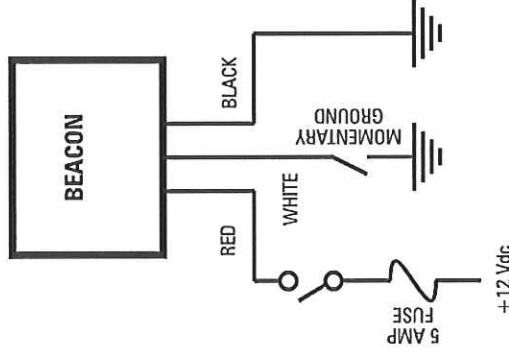
OPERATION:

Magnet Mount

- 1) Place beacon on roof of vehicle.
- 2) Route wire through window.
- 3) Plug into 12V socket.
- 4) Press arrow on cigar plug > 1 sec but < 5 sec; pattern advances 1 step.
- 5) Press arrow for > 5 sec pattern resets to pattern #1.

Flat / Pipe Mount

- 1) Connect wires as shown below (note that white wire is for momentary ground (used for pattern selection) and should be taped after pattern is selected.



WARNING

This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.



To review our Limited Warranty Statement & Return Policy for this or any SoundOff Signal product please visit our website at www.soundoffsignal.com and select the "Warranty & Returns" link along the left column of our home page. If you have questions regarding this product please contact Technical Services, Monday - Friday, 8 am to 5 pm at 1.800.338.7337, press #4 to skip the automated message. Questions or comments that do not require immediate attention may be emailed to techsupport@soundoffsignal.com.

1.800.338.7337 / www.soundoffsignal.com / Thank you for trusting us with your safety!

SAE Class 1 LED Beacon
 ELB45BM(z) + (x)(y) Magnet Mount
 ELB45BC(z)Ø(x)(y) Flat/Pipe Mount

SAE Class 1 LED Beacon
 ELB45BC(z)Ø(x)(y) Flat/Pipe Mount

NOTE: The Magnet Mount Beacon (ELB45BM(z) + (x)(y)) CANNOT be synced.

TECHNICAL SPECIFICATIONS	
Overall Dimensions:	4.86" H X 6.35" \varnothing
Flash Patterns:	8 flash patterns
Input Voltage Range:	9 - 30 Vdc
Current Consumption:	less than 2 amps
# of LEDs:	12 Generation 3 LEDs
Light Sync Technology:	Yes
Operating Temperature:	-40° to +65° C

Beacon Light Sync Configuration Instructions

1. **Set ID#**
 - a. Identify which pattern and sequence you want.
 - b. Connections
 - i. RED: +12Vdc
 - ii. WHT: +12Vdc (Note: you will need to disconnect after power is applied)
 - iii. BLK: Ground
 - c. Apply power to unit
 - d. Without disconnecting power from red wire, disconnect WHT wire
 - e. Momentarily connect WHT to Ground to change ID #
 - i. Identify ID# by number of sequential flashes
 - ii. Possible ID#s: 1 - 4
 - f. Disconnect power from red wire to get out of ID mode.

Flash Patterns					
Alternating Patterns	1 Light	Alternating 2 Lights	Simultaneous 2 Lights	X-Pattern 4 Lights	FPM (Flashes per Minute)
1. Warp	x	x	x		240
2. Quad Flash	x	x	x		81
3. Quint	x	x	x		70
4. Double Flash	x	x	x		70
5. Quad Flash	x	x	x		67
6. Warp*	x	x	x		59
7. Ideal Single Flash	x	x	x		63
8. U*	x	x	x		176

2. **Set Pattern**
 - a. Reapply power to red wire.
 - b. Once all Light Head ID#s are configured, **make sure all lights are flashing the same pattern.**
 - c. Connect corresponding colored wires of all units together: RED to RED, etc.
 - d. Change Pattern
 - i. Momentarily connect WHT wires to Ground
 - ii. Observe pattern change on all lights connected
 - e. Insulate all wire connections
3. **Reset Pattern**
 - a. Remove power
 - b. Place WHITE (sync) wire to ground
 - c. With sync wire grounded, re-power RED wire
 - d. Maintain for one second (light will dim)
 - e. Remove power and ground (pattern 1 set)

SEQUENCE:

2 LIGHTS

ALTERNATING: To obtain Alternating patterns, follow the ID SELECTION steps and set one Beacon to ID#1 and the other to ID#3. Then proceed to the PATTERN SELECTION steps.

SIMULTANEOUS: To obtain Simultaneous patterns, follow the ID SELECTION steps and set both Beacon lights to ID#1. Then proceed to PATTERN SELECTION steps.

Replacement Parts & Accessories: _____

- E36ØBG4: Metal Branch Guard for 4" Low Dome
- E36ØBG6: Metal Branch Guard for 6" High Dome
- E36ØDC6: Clear Dust Cover for 4" Low and 6" High Dome
- ET2BL(x): Replacement 4" Low Dome
- ET2BLT(x): Replacement 6" High Dome
- PE2BDR2: Black Dress Ring





REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045



Electrical 1249-01
Mechanical 1249-02

Order No. 3176310

Date: May 21, 2009

REPORT NO. 3176310CRT-004

TEST OF 360° LED BEACON

RENDERED TO

SOUND OFF, INC.
3900 CENTRAL PARKWAY
P.O. BOX 206
HUDSONVILLE, MI 49426-7884

INTRODUCTION

This report contains the results of examination and test of the above device to demonstrate compliance with the applicable test requirements of the SAE Standards as given in the SAE Handbook, effective as of the date of this report and as requested by the client.

The following is a summary of the results of tests of the device performed in accordance with the following SAE Standards.

Summary

Tests	SAE Standards	Results
Photometry - Yellow	J845 DEC2007	Complies
Warpage	J575 JUN2007	Complies
Color		
Red, Yellow, Blue, White	J578 DEC2006	Complies
Corrosion	J575 JUN2007	Complies
Vibration	J575 JUN2007	Complies
Moisture	J575 JUN2007	Complies
Dust	J575 JUN2007	Complies
Rate of Flashing	J845 DEC2007	Complies
Extreme Temperature	J845 DEC2007	Complies
Durability	J845 DEC2007	Complies

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Electrical 1249-01
Mechanical 1249-02

AUTHORIZATION

The testing performed was authorized by signed quote no. 500138819.

MATERIAL SUBMITTED

The client submitted five beacons. The beacons were received by Intertek on March 1, 2009 and April 8, 2009 in undamaged condition, and tested as received. The sample designations are H9040 through H9043 and A9013.

TEST ASSIGNMENT NUMBERS

Mechanical Test: H9040, H9043 Warpage: All Samples Photometry
Color: All Samples Extreme Temperature Durability: A9013

DATES OF TESTS

April 3, 2009 through May 21, 2009

DESCRIPTION OF DEVICE

Five 360 degree warning lamps were submitted for testing. The lamps use LEDs as a light source. The LEDs are arranged on a center post with four columns of three LEDs mounted on the post. The lenses are the color of the LEDs. They are red, two yellow, white and blue lamps. The LED post and associated circuit board is mounted to the bottom of the housing. The lens is held to the housing with four screws. No lens plastic material information or light source information was provided. There are no compliance or material markings on the lamps. The lamp were not submitted on test stands.

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Calibration Date	Calibration Due Date
Photo Research Spectra Scan	PR 705	O052	11/26/08	11/26/09
Vibration Controller	UDC	V254	09/19/08	09/19/09
Signal Conditioner	CVA-4	V252	11/05/08	11/05/09
Accelerometer	10B10T	V253	07/29/08	07/29/09
Torque Wrench	DM70NM	N580	04/15/09	04/15/10
Thermotron Chamber	SM 32C	H137	01/08/09	01/08/10
Fisher Stopwatch	Fisher	N854	10/27/08	10/27/09
DMM-Fluke	87	E259	02/10/09	02/10/10
Salt Fog Chamber	SCCH22	H168	04/24/09	04/24/10
Moisture Chamber	ETL	H113	11/13/08	11/13/09
Dust Chamber	ETL	H114	11/13/08	11/13/09
Goniometer	ETL	N060	07/24/08	07/24/09
International Light Radiometer	IL1700	L061	Before Use	
Fisher Stopwatch	Fisher	Q021	05/02/08	05/02/09
Tektronix Oscilloscope	TDS410A	E289	09/03/08	09/03/09



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST

Photometric Tests

Optical Power (SAE J845 DEC2007) – Optical Warning Devices

The lamp was mounted so that the horizontal plane through the photometer axis passed through the center of the light source and the vertical axis through the center of the light source was perpendicular to this horizontal plane. The lamp was allowed to operate for 30 minutes and the flash energy was then measured. The H-V reference point was determined by turning the device about its vertical axis until the minimum optical power was measured. The flash energy measurements were made at a distance of 60 feet. The flash energy is then integrated over a time of at least 20 seconds. The optical power is then calculated and presented as candela seconds per minute. The results of test are listed on the following pages. The lights were compared to the Class 1 requirements.

Peak Luminous Intensity (SAE J845 DEC2007) – Optical Warning Devices

The peak luminous intensity is calculated from the flash energy of one flash and an oscilloscope trace of the flash with the time recorded. The results are below.

Photometric (Light Source: LEDs)

		Device Color: Yellow				Class: 1			
		Optical Power (candela•second/minute)				Peak Intensity (candela)			
		Device Measured		Specified Minimum		Device Measured		Specified Minimum	
Test Points	deg.	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total
5.00U-V		5166		540		242		22.8	
2.50U-V		4276		2430		200		101.4	
H-V		5272	26125	4860	18000	247	1226	202.8	752
2.50D-V		6218		2430		291		101.4	
5.00D-V		5193		540		243		22.8	

Device operated at test voltage.

Volts: 12.8

The optical power was measured in 10° increments through 360° horizontal and at the vertical angles of the testes points. The optical power exceeds the minimum at all points

Flash Rate

The flash consisted of a group of four pulses in 350 msec followed with an off time of 400 msec. The flash rate was 1.3 Hz. The lamp meets flash characteristic requirements.



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Warpage (SAE J575 JUN2007)

The indicated specimen was subjected to the warpage test in a 120°F ambient for one hour at design volts in the manner in which it is operated on the vehicle. A red/blue lamp was tested as it has the highest optical power.

Results

The warning lamp displayed no evidence of warpage of any plastic part.

Chromaticity Test (SAE J578 DEC2006)

The color measurements were made using a spectrophotometer. The light was measured from 380 – 780 nm in 5 nm increments and the chromaticity coordinates determined. Chromaticity measurements for the color of light emitted are listed below.

Sample	Color	Chromaticity Coordinates		
		x	y	z
H9040	red	0.701	0.283	0.016
H9042	yellow	0.572	0.410	0.018
A9013	yellow	0.592	0.409	0.000
H9043	blue	0.144	0.042	0.814
H9041	white	0.375	0.371	0.254

The device complies with the requirements of SAE J578 DEC2006 for red, yellow, blue and white.

Vibration Test (SAE J575 JUN2007)

Test Procedure

The test sample was mounted on a test fixture and securely mounted to the vibration table and subjected to the following wide band random vibration test parameters:

1. Frequency range from 10 to 250 Hz.
2. The G-Load Power Spectrum Density as portrayed in Figure 1 of SAE J575 NOV2006.
3. Direction of vibration on the vertical axis of the device as it is mounted on the vehicle.
4. Test duration of six hours at room ambient temperature.
5. A tolerance of ± 3 dB
6. An RMS value of 1.81g.

Test Evaluation

Upon completion of the vibration test procedure, there shall be no observed rotation, displacement, cracking, or rupture of parts of the device (except bulb filaments) which would result in failure of any test contained in SAE J575 NOV2006. Looseness of parts as evidenced by rattling heard when the part assembly is shaken shall also constitute a failure. Cracking or rupture of parts of the device affecting its mounting shall also constitute a failure.

Test Result

Upon examination after completion of the vibration test procedure, there was no observed rotation, displacement, cracking, or rupture of parts of the device which would result in failure of any test contained in SAE J575 NOV2006. There was no looseness of parts as evidenced by rattling heard when the part assembly was shaken. There was no cracking or rupture of parts of the device affecting its mounting.



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Dust Test - (SAE J575 JUN2007)

Test Procedure

The sample with its drain hole closed, was mounted in its normal operating position at least 6 inches from the wall of the dust chamber. The inside of the chamber was at least 3 feet each side and contained 10 lbs. of fine powdered cement (ASTM C 150-56). At intervals of 15 minutes the dust was agitated by air for a 2 second period in a downward direction. The test continued for 5 hours. After the test, the exterior surface was cleaned.

Test Evaluation

The unit was visually inspected for the presence of dust, without disassembly. If there was no visual evidence of dust, the unit was disassembled to confirm this fact.

If there was visual evidence of dust, a photometric test was performed to determine if the loss of candlepower was within 10% of the maximum before the dust test.

The unit is considered to have failed if the dust inside the unit reduces the candlepower 10%.

Test Results

Upon visual inspection, there was no visual evidence of dust inside the unit.

Moisture Test - (SAE J575 JUN2007)

Test Procedure

The sample is mounted in its normal operating position with all drain holes open and subjected to a precipitation of 0.1 inches of water per minute delivered at an angle of 45 deg. from a nozzle with a solid cone spray for twelve hours. The sample is then allowed to drain for one hour. The unit is carefully handled after the test and the water (if any) is collected in a graduated beaker and measured.

Test Evaluation

The unit is considered to have failed if more than 2cc of water is measured at the end of the one hour draining period.

Test Results

Upon examination after tests, there was no visual evidence of water inside the device.



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Corrosion Test - (SAE J575 JUN2007)

Test Procedure

The sample was placed in a salt fog chamber ASTM B-117 for a period of 50 hours - consisting of 2 periods of 24 hours followed by a one hour drying period after each 24 hour exposure.

Test Evaluation

At the end of 50 hours, there shall be no evidence of corrosion that would affect the proper functioning of the device.

Test Results

Upon examination after the test, there was no visual evidence of corrosion that would affect the proper functioning of the device.

Flash Rate, Extreme Temperature and Rate of Flashing - (SAE J845 DEC2007)

High Temperature Flash Rate Test

The device was subjected to an ambient temperature of 50 ± 3 C for a period of six hours. The device was off during the first hour and lighted and operated for five hours at rated voltage (12.8 volts specified by the client). The flash rate was measured before the test, starting 1 minute after the device is activated and at the conclusion of the test.

Low Temperature Flash Rate Test

The device was subjected to an ambient temperature of -30 ± 3 C for six hours. The device was off during the first five hours and lighted and operated at rated voltage during the last hour of the test. The flash rate was measured before the test, starting 1 minute after the device is activated and at the conclusion of the test.

Durability Test

The device was operated continuously for 200 hours at an ambient temperature of 25 ± 3 C in cycles consisting of 50 minutes on and 10 minutes off at rated voltage. The flash rate was measured before the test, after 100 hours and at the conclusion of the test.

Test Evaluation High and Low Temperature Flash Rate Tests

There shall be no evidence of operating conditions that would result in failure to comply with any other test. Operation of the device shall begin and continue within 5 second of each operating cycle. The measured flash rate shall not vary more that 20% from the initial ambient flash rates values and shall always be between 1 – 4 Hz.

Test Evaluation Durability Flash Rate Tests

There shall be no evidence of operating conditions that would result in failure to comply with any other test. The measured flash rate shall not vary more that 20% from the initial ambient flash rates values and shall always be between 1 – 4 Hz.



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Test Results

There was not evidence of any operating condition that would result in failure of any other test. The flash rate measurements follow. Operation of the device began and continued within 5 second of each operating cycle for the high and low temperature test.

High and Low Temperature Flash Rate Tests

Ambient Temperature	Flashes per Minute		
	Measured (12.8 Volts)	Minimum SAE	Maximum SAE
1. 50 deg. C before	80	60	240
1 st reading @ 1 hr.	80	64	96
2 nd reading @ 6 hr.	80	64	96
2. -30 deg. C before	80	60	240
1 st reading @ 5 hr.	80	64	96
2 nd reading @ 6 hr.	80	64	96

Durability Test

Operation Time (hours)	Flashes per Minute		
	Measured (12.8 volts)	Minimum SAE	Maximum SAE
Before	80	60	240
100	80	64	96
200	80	64	96

In Charge of Tests:

Ernest Dykeman

Ernest Dykeman
Senior Project Engineer
Lighting Division

Report Reviewed by:

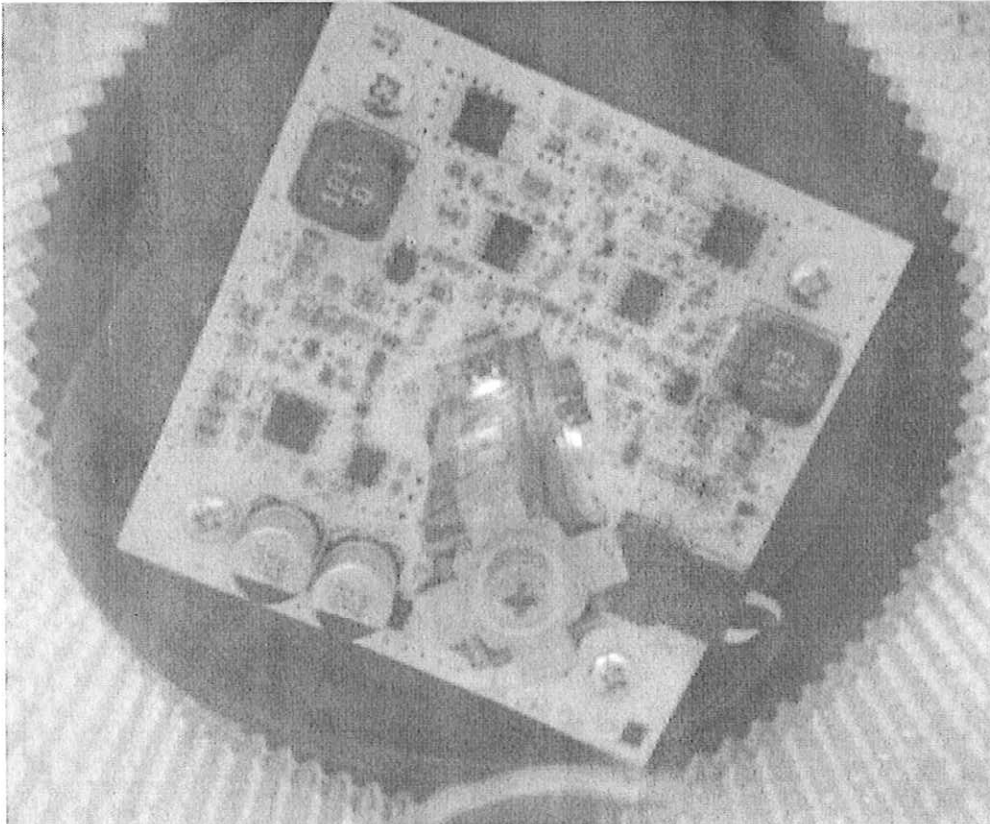
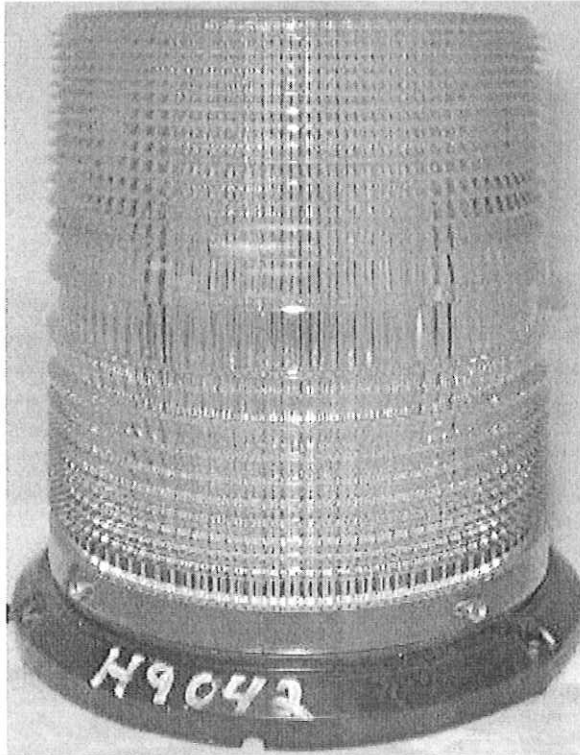
Chris W. Metcalf

Christopher W. Metcalf
Project Engineer
Lighting Division

Attachment: Two Picture Pages

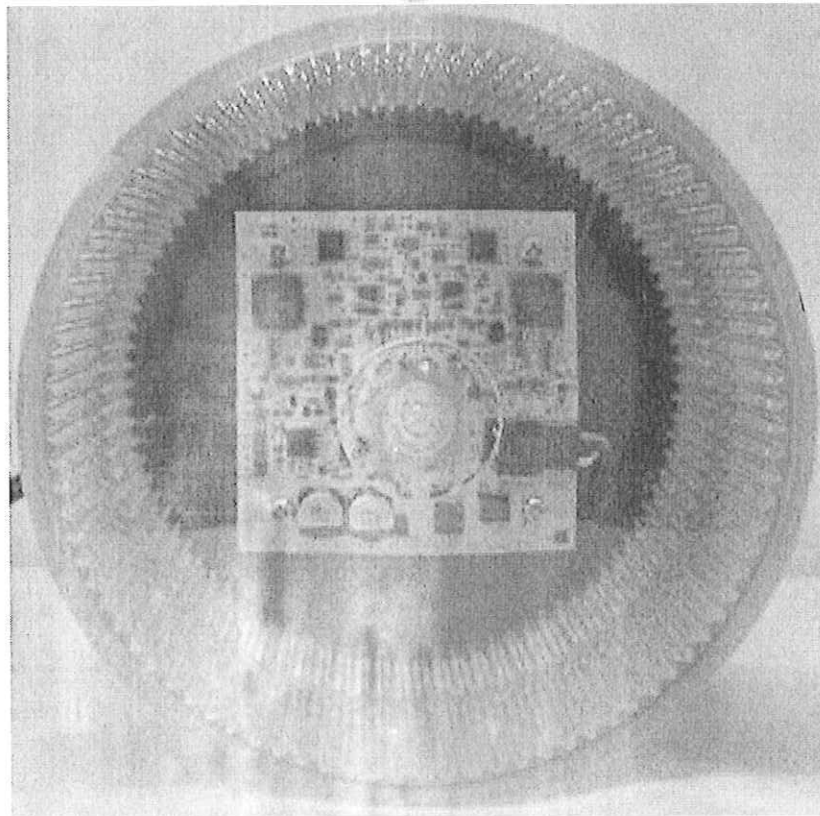
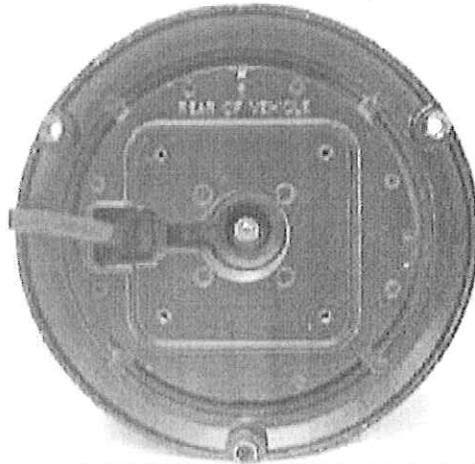


"360° LED BEACONS"
TESTED FOR SOUND OFF, INC.



Intertek

"360° LED BEACONS"
TESTED FOR SOUND OFF, INC.



Order No. 3176310
Report No.3176310CRT-004

Order No. 3190945

Date: October 27, 2009

REPORT NO. 3190945CRT-001

TEST OF 360° CLASS 1 LED BEACON

RENDERED TO

SOUND OFF, INC.
3900 CENTRAL PARKWAY
P.O. BOX 206
HUDSONVILLE, MI 49426-7884

INTRODUCTION

This report contains the results of examination and test of the above device to demonstrate compliance with the applicable test requirements of the SAE Standards as given in the SAE Handbook, effective as of the date of this report and as requested by the client.

The following is a summary of the results of tests of the device performed in accordance with the following SAE Standards.

Summary

Tests	SAE Standards	Results
Photometry		
White – Class 1	J845 DEC2007	Complies
Yellow – Class 1	J845 DEC2007	Complies
Red – Class 1	J845 DEC2007	Complies
Blue – Class 1	J845 DEC2007	Complies



Electrical 1249-01
Mechanical 1249-02

AUTHORIZATION

The testing performed was authorized by signed purchase order no.34143-00.

MATERIAL SUBMITTED

The client submitted four beacons. The beacons were received by Intertek on September 10, 2009 in undamaged condition, and tested as received. The sample designations are S9026 through S9029.

TEST ASSIGNMENT NUMBERS

Photometry: All samples were used for the test

DATES OF TESTS

September 29, 2009 through September 30, 2009

DESCRIPTION OF DEVICE

Four 360 degree warning lamps were submitted for photometry testing only. The lamps use LEDs as a light source. The LEDs are arranged on a center post with three LEDs mounted horizontally on four sides of a post. The lenses are the color of the LEDs. They are red, yellow, white and blue lamps. The LED post and associated circuit board is mounted to the bottom of the housing. The lens is held to the housing with four screws. No lens plastic material information or light source information was provided. There are no compliance or material markings on the lamps. The lamps were not submitted on test stands.

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Calibration Date	Calibration Due Date
Goniometer	ETL	N060	07/28/09	07/28/10
International Light Radiometer	IL1700	L061	Before Use	
Oscilloscope	TDS350	E276	02/27/09	02/27/10
Goniophotometer Electrical System	ETL	N784	02/04/09	02/04/10
Fisher Stopwatch	Fisher	N854	10/27/08	10/27/09



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST

Photometric Tests

Optical Power (SAE J845 DEC2007) – Optical Warning Devices

The lamp was mounted so that the horizontal plane through the photometer axis passed through the center of the light source and the vertical axis through the center of the light source was perpendicular to this horizontal plane. The lamp was allowed to operate for 30 minutes and the flash energy was then measured. The H-V reference point was determined by turning the device about its vertical axis until the minimum optical power was measured. The flash energy measurements were made at a distance of 60 feet. The flash energy is then integrated over a time of at least 20 seconds. The optical power is then calculated and presented as candela seconds per minute. The lamps were allowed to operate for 30 minutes prior to measurements being recorded. The results of test are listed on the following pages. The lights were compared to the Class 1 requirements.

Peak Luminous Intensity (SAE J845 DEC2007) – Optical Warning Devices

The peak luminous intensity is calculated from the flash energy of one flash and an oscilloscope trace of the flash with the time recorded. The results are below.

Flash Rate

The flash train for the lamps consist of a group of four pulses in 356 msec followed with an off time of 420 msec. The flash rate was 1.32 Hz. The lamps meet the flash characteristic requirements. These measurements are averages.

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

		Device Color: White Class: 1							
		Optical Power (candela·second/minute)				Peak Intensity (candela)			
		Device Measured		Specified Minimum		Device Measured		Specified Minimum	
Test Points deg.	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	
5.00U-V	2145		1080		104		45		
2.50U-V	10521		4860		511		202.8		
H-V	19803	62236	9720	36000	961	3020	405.6	1502	
2.50D-V	20452		4860		992		202.8		
5.00D-V	9315		1080		452		45		

Device operated at test voltage.

Volts: 12.8



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

Test Points deg.	Device Color: Yellow Class: 1							
	Optical Power (candela·second/minute)				Peak Intensity (candela)			
	Device Measured		Specified Minimum		Device Measured		Specified Minimum	
	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total
5.00U-V	956		540		35.1		22.8	
2.50U-V	4060		2430		149		101.4	
H-V	10335	27907	4860	18000	380	1025.1	202.8	752
2.50D-V	9605		2430		353		101.4	
5.00D-V	2951		540		108		22.8	

Device operated at test voltage.

Volts: 12.8

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

Test Points deg.	Device Color: Red Class: 1							
	Optical Power (candela·second/minute)				Peak Intensity (candela)			
	Device Measured		Specified Minimum		Device Measured		Specified Minimum	
	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total
5.00U-V	744		270		35.6		11.4	
2.50U-V	2191		1215		105		50.4	
H-V	5165	14420	2430	9000	247	689.5	101.4	375
2.50D-V	4649		1215		222		50.4	
5.00D-V	1671		270		79.9		11.4	

Device operated at test voltage.

Volts: 12.8



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

		Device Color: Blue		Class: 1					
		Optical Power (candela-second/minute)				Peak Intensity (candela)			
		Device Measured		Specified Minimum		Device Measured		Specified Minimum	
Test Points	deg.	Pt. by Pt.	Zone Total	60% of Zone Total	Zone Total	Pt. by Pt.	Zone Total	60% of Zone Total	Zone Total
5.00U-V		293		270		13.9		11.4	
2.50U-V		1543		1215		73.2		50.4	
H-V		3966	10107	2133	9000	188	479.4	101.4	375
2.50D-V		3097		1215		147		50.4	
5.00D-V		1208		270		57.3		11.4	

Device operated at test voltage.

Volts: 12.8

In Charge of Tests:

Ernest Dykeman
Senior Project Engineer
Lighting Division

Attachment: None

Report Reviewed by:

Christopher W. Metcalf
Project Engineer
Lighting Division



REPORT
 3933 US ROUTE 11 CORTLAND, NEW YORK 13045



Electrical 1249-01
 Mechanical 1249-02

Order No. 3190945

Date: October 27, 2009

REPORT NO. 3190945CRT-001
 TEST OF 360° CLASS 1 LED BEACON

RENDERED TO

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Yellow – Class 1	J845 DEC2007	Complies
Red – Class 1	J845 DEC2007	Complies
Blue – Class 1	J845 DEC2007	Complies

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Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST

Photometric Tests

Optical Power (SAE J845 DEC2007) – Optical Warning Devices

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Flash Rate

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Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

		Device Color: White Class: 1							
		Optical Power (candela•second/minute)				Peak Intensity (candela)			
Test Points deg.	Device Measured		Specified Minimum		Device Measured		Specified Minimum		
	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	
5.00U-V	2145		1080		104		45		
2.50U-V	10521		4860		511		202.8		
H-V	19803	62236	9720	36000	961	3020	405.6	1502	
2.50D-V	20452		4860		992		202.8		
5.00D-V	9315		1080		452		45		

Device operated at test voltage.

Volts: 12.8



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

Test Points deg.	Device Color: Yellow Class: 1							
	Optical Power (candela•second/minute)				Peak Intensity (candela)			
	Device Measured		Specified Minimum		Device Measured		Specified Minimum	
	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total
5.00U-V	956		540		35.1		22.8	
2.50U-V	4060		2430		149		101.4	
H-V	10335	27907	4860	18000	380	1025.1	202.8	752
2.50D-V	9605		2430		353		101.4	
5.00D-V	2951		540		108		22.8	

Device operated at test voltage.

Volts: 12.8

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

Test Points deg.	Device Color: Red Class: 1							
	Optical Power (candela•second/minute)				Peak Intensity (candela)			
	Device Measured		Specified Minimum		Device Measured		Specified Minimum	
	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total	Pt. by Pt.	Zone Total	60% of Figure 1	Zone Total
5.00U-V	744		270		35.6		11.4	
2.50U-V	2191		1215		105		50.4	
H-V	5165	14420	2430	9000	247	689.5	101.4	375
2.50D-V	4649		1215		222		50.4	
5.00D-V	1671		270		79.9		11.4	

Device operated at test voltage.

Volts: 12.8



Electrical 1249-01
Mechanical 1249-02

TESTS AND TEST METHODS AND RESULTS OF TEST (cont'd)

Photometric (Test distance: 60 feet) - SAE J845 DEC2007
(Light Source: LEDs) – 12 ct.

		Device Color: Blue		Class: 1					
		Optical Power (candela•second/minute)				Peak Intensity (candela)			
Test Points deg.	Device Measured		Specified Minimum		Device Measured		Specified Minimum		
	Pt. by Pt.	Zone Total	60% of Table 1	Zone Total	Pt. by Pt.	Zone Total	60% of Table 1	Zone Total	
5.00U-V	293		270		13.9		11.4		
2.50U-V	1543		1215		73.2		50.4		
H-V	3966	10107	2430	9000	188	479.4	101.4	375	
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5.00D-V	1208		270		57.3		11.4		

Device operated at test voltage.

Volts: 12.8

In Charge of Tests:

Ernest Dykeman

Ernest Dykeman
Senior Project Engineer
Lighting Division

Attachment: None

Report Reviewed by:

Chris W. Metcalf

Christopher W. Metcalf
Project Engineer
Lighting Division

MSDS and hazardous chemical list

	PARENT	COLOR	RECIPE	
# 1	Potting Flasher and strobe Epic 7302B	Black		3 pages Health on 2
# 2	Potting Flasher and strobe Epic 7302B	Clear	Diphenylmethane, Diisocyanate (Polymeric)	3 pages Health on 2
# 3	Conformal coat Strobe Dow 3-1765	Clear	Polysiloxane Methyltrimethoxysilane Octamethylcyclotetrasiloxane Diisopropoxy di(ethoxyacetoacetyl) titanate Decamethylcyclopentasiloxane Aminopropyl glycidoxypropyl Trimethoxysilane Vinyltrimethoxysilane Methyl alcohol Dimethyldimethoxysilane	10 pages Health on 1
# 4	Isopropyl alcohol Dow	Clear	Isopropyl Alcohol	17 pages Health on 2
#5	Silicone sealant	Clear	Methyl tri silane Di methoxymethyl silane	8 pages Health on 1
#6	Flux for flasher and strobe	Clear	Isopropanol Adipic Acid	1 page Health on 2
#7	Ethyl Alcohol	Clear	Ethyl Alcohol	1 page Health on 1
#8	Lacquer thinner + cleaning solvents	Clear	Acetic acid Acetone Aliphatic hydrocarbon/aliphatic ester Surfactant Aliphatic solvent mixture Aromatic hydrocarbon A Aromatic hydrocarbon B Block polymer, Butyl acetate Cumene, Cyclohexane Ethylbenzene Ethylene glycol monobutyl ether Acetate Formaldehyde, Isopropyl alcohol Medium mineral spirits Methyl alcohol Methyl ethyl ketone Methyl isobutyl ketone Methyl n-propyl ketone Mixed dibasic esters, n-butyl alcohol Naphthalene Nonylphenoxy poly ethanol Phenol, naphtha Polyethylene glycol monomethyl ether Acetate	1 pages Health on 2

Lacquer Thinner	Clear	Toluene V.I.&P naphtha, Water, Xylene 1,2,4-Trimethyl benzene	2 pages Health on 2
#9 Vehicle fuel	Clear	Gasoline (Benzene, Tetraethyl Lead, MTBE)	5 pages Health on 1
#10 Caulk ASI 502	White	Methyltriacetoxysilane (hazardous) Non-hazardous: polydimethylsiloxane Trade secret components	6 pages Health on 2
#11 RTV 11 used by strobe tube	White	Hazardous: Ethy Silicate 40 Non-hazardous: Dimethyl Polysiloxane Calcium Carbonate	6 pages Health on 2
#12 Super Deox Dross powder used by wave.	White	Ammonium Fluoroborate Propionic Salts Lithium chemically bound to boron toxicity based on fluoride is not possible.	2 pages Health on 1
#13 Napa Gasket Caulk 765-2426	Copper		6 pages Health on 3
#14 ESD Mat and table cleaner ACL 6002	White		6 pages Health on 3
#15 Screen and Keyboard cleaner	Clear		
#16 Solder Mask 2211	Pink		9 pages Health on 4
#17 Calk plant ASI 388			5 pages Health on 2
#18 Caulk plant ASI 335			5 pages Health on 1
#19 Stoner oil lubricant, amp press	brown		1 page Health on back pg 1
#20 Thermalcote heat sink compound	White		2 pages Health on 2
#21 Tin/lead hand solder			
#21 Clean line 7000 hand solder			
#22 Acrylic weld	Clear		2 pages Health on
#23 Zero Charge Mat and Table cleaner			
#24 Hand Lotion			
#25 Bar solder Nitro flow			3 pages Health on 1
#26 RTV 6700			7 pages Health on 3
#27 Gap filler for Predator cases #200 Part A #200 Part B			4 pages Health on 2 4 pages Health on 2
#28 Thermoset	Bi		7 pages Health on 2

#30 Loctite LED placement #31673			5 pages Health on 2
#31 Propane	Gas Cl		2 Pages Health on 1+
#32 Oxygen	Gas	For Welder	6 pages Health on 2
#33 Nitrogen	Gas	For Welder	6 pages Health on 4
#34 Acetylene	Gas	For Welder	8 pages Health on 2
# 35 Argoshield	Gas	For Welder	8 pages Health on 2
# 36 979 Flux - wave	Liquid	Wave solder	6 pages Health on 2
#37 Fike P?N 02 4134	Gas rel	Fire suppression	3 pages Health on 2
#38 Pentafluoroethane	Gas rel	Fire suppression	7 pager Health on 2

Rev Level info:

5/20/03	Rev 1	mh
10/23/03	Rev 2	mh
03/16/04	Rev 3	mh
03/30/04	Rev 4	mh
10/22/04	Rev 5	mh
07/12/05	Rev 6	mh
02/26/2008	Rev 7	mh
		mv