



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

State of West Virginia
 Request for Quotation
 28 - Office Equip.

Proc Folder: 306840

Doc Description: Addendum No. 1 - to add solicitation documentation

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-03-09	2017-03-28 13:30:00	CRFQ 1200 AUD1700000006	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

AMERICAN POWER & LIGHTING SYSTEMS
 P O BOX 2341
 S CHARLESTON WV 25303

03/28/17 13:05:47
 00 Purchasing Division

FOR INFORMATION CONTACT THE BUYER

Tara Lyle
 (304) 558-2544
 tara.l.lyle@wv.gov

Signature X

FEIN #

228586557

DATE

3-28-17

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum No. 1 - to add the solicitation documentation inadvertently omitted from the CRFQ AUD170000006.

The West Virginia Purchasing Division for the Agency, The West Virginia State Auditor's Office is soliciting bids from qualified vendors for a one-time purchase to provide replacement batteries and uninstall, remove and dispose of existing batteries, per the attached documentation.

INVOICE TO		SHIP TO	
STATE AUDITOR'S OFFICE 1900 KANAWHA BLVD E 1900 KANAWHA BLVD E CHARLESTON US	WV25305-0230	STATE AUDITORS OFFICE 1900 KANAWHA BLVD E CHARLESTON US	WV 25305-0230

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	80 Eaton Powerware Battery Model 153700004-002 or Equal	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
26111707			

Extended Description :

80 Eaton Powerware Battery Model 153700004-002 or Equal and Uninstallation, removal and disposal of each battery unit, Eaton Powerware model 153302087-002.

***** VENDORS MUST COMPLETE THE ATTACHED PRICING PAGE, EXHIBIT A.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Technical question deadline by 4:00 pm	2017-03-17

AUD1700000006	Document Phase Draft	Document Description Addendum No. 1 - to add solicitation documentation	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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 Vendor Preference, if applicable.

1. **Application is made for 2.5% 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;
 Bidder is a resident vendor partnership, association, or corporation with at least eighty percent of ownership interest of bidder held by another entity that meets the applicable four year residency requirement; **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% 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% vendor preference for the reason checked:**
 Bidder is a nonresident vendor that employs a minimum of one hundred state residents, or a nonresident vendor which has an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia and employs a minimum of one hundred state residents, and for purposes of producing or distributing the commodities or completing the project which is the subject of the bidder's bid and continuously over the entire term of the project, on average at least seventy-five percent of the bidder's employees or the bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years and the vendor's bid; **or,**
4. **Application is made for 5% 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% 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% 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.
7. **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.**
 Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

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) rescind the contract or purchase order; 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.

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: AMERICAN POWER & LITE SYS Signed: [Signature]
Date: 3-27-17 Title: OWNER

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

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

LEONARD VARDALLO / OWNER
(Name, Title)
AMERICAN POWER & LIGHTING SYSTEMS
(Printed Name and Title)
P O BOX 8341 / 5 CHARLESTON WV 25303
(Address)
304 546 1177
(Phone Number) / (Fax Number)
LEONARD @ APLS. BIZ
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

AMERICAN POWER & LIGHTING SYSTEMS
(Company)
 / OWNER
(Authorized Signature) (Representative Name, Title)
LEONARD VARDALLO / OWNER
(Printed Name and Title of Authorized Representative)
3.27.17
(Date)
304 546 1177
(Phone Number) (Fax Number)

REQUEST FOR QUOTATION
CRFQ AUD1700000006 - UPS Battery Replacement

8.2 The following remedies shall be available to Agency upon default.

8.2.1 Immediate cancellation of the Contract.

8.2.2 Immediate cancellation of one or more release orders issued under this Contract.

8.2.3 Any other remedies available in law or equity.

9. MISCELLANEOUS:

9.1 **No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

9.2 **Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

9.3 **Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.

9.4 **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: LEONARD VADALLA
Telephone Number: 304 546 6177
Fax Number: _____
Email Address: LEONARD@APLS.BIZ

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

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.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"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.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: AMERICAN POWER & LIGHTING SYSTEMS
Authorized Signature: [Signature] Date: 3/28/17

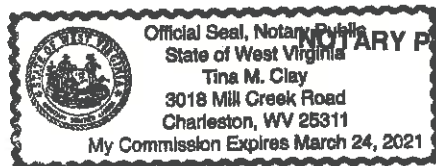
State of WV

County of KANAWHA, to-wit:

Taken, subscribed, and sworn to before me this 28th day of MARCH, 2017.

My Commission expires MARCH 24, 2021.

AFFIX SEAL HERE



[Signature]
Purchasing Affidavit (Revised 08/01/2015)

REQUEST FOR QUOTATION
CRFQ AUD1700000006 - UPS Battery Replacement

UPS Battery Replacement Bid Pricing Page Exhibit A

Item No.	Contract Item Line #	Mandatory Contract Item Requirements	Unit of Measure	Quantity	Unit Price	Extended Price
1	4.1.1.1	Eaton Powerware Model 153700004-002 or equal All Items provided for and listed under 4.1.1.1. All requirements listed under 4.1.1.1 shall be proportionally included within the bid price for each battery provided.	Each	80	34.50 282.51	23160.80
2	4.1.1.2	Uninstallation, removal and disposal of each battery unit, Eaton Powerware model 153302087-002. All Items provided for and listed under 4.1.1.2. All requirements listed under 4.1.1.2 shall be proportionally included within the bid price for each battery removed.	Each	80	34.50	2760.00
					Overall Total Cost:	25920.80

Vendor Name: AMERICAN POWER & LIGHTING SYSTEMS
 Authorized Signature: [Signature]
 Vendor Address: PO BOX 0341 / S CHARLESTON WV 25303
 Phone and Fax: 304 546 1178
 Email: LEONARD@APLS.BIZ

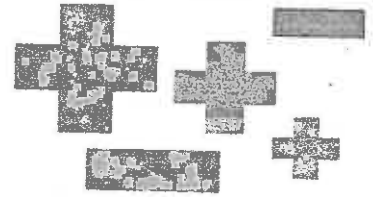
**If the Vendor is submitting an electronic bid in wvOASIS, the Vendor must submit the pricing page, Exhibit A, by attachment.

AS SPECIFIED — PLEASE SEE ATTACHED

FIAMM

Industrial Batteries

HIGHLITE FLX



Applications and Key Benefits

✦ 12V AGM blocs - 100WPC to 700WPC

Ideal for:

- High rate discharge UPS application
- Emergency power supply systems
- IT network operations and data centers
- Emergency lighting

✦ Up to 10 year design life at 77°F on float

✦ High energy density allows more compact battery layout and footprint

✦ Easy installation in cabinets or racks

✦ Non-spillable

✦ AGM recombination technology minimizes gassing

✦ No water additions required

✦ Non-hazardous for air/sea/rail/road transportation

✦ 100% Recyclable

Applicable Standards

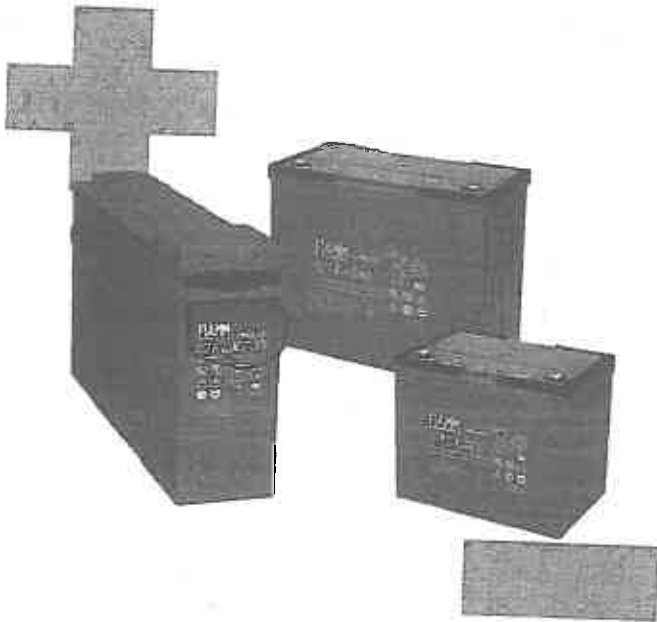
- UL Recognized
- UL 1778 4th edition - UPS equipment certification
- IEC 60896 Part 21 - VRLA methods of testing
- IEC 60896 Part 22 - VRLA requirements
- BS 6290 Part 4 - Specifications for VRLA classification

FIAMM Manufacturing

- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- OHSAS 18001 Workplace Safety & Health

Technical Features

- **Plates:** Gravity casted grids from high purity lead calcium tin alloy provide an optimal current conducting framework for high rate discharge. Minimal grid growth and corrosion resistant for prolonged service life
- **Active Material:** on both sides of the grids guarantees optimized performance
- **Electrolyte:** fully absorbed in glass mat "AGM" separators with extremely high microporosity
- **Terminal Posts:** threaded inserts provide high conductivity, retain required torque values and allow for easy installation
- **Post Seals:** high integrity post seal design prevents electrolyte leakage over a wide temperature range
- **One-way Safety Valves:** open at 5 PSI and close at 3 PSI to allow excess gas to escape when overcharging
- **Flame Arrestors:** prevent any errant spark or flames from entering the battery.
- **Container and cover:** made from thick walled flame retardant ABS plastic and designed for unsurpassed mechanical strength. Thermally welded case to cover sealing eliminates leaks.
- **Flame Retardant Plastics:** Case and cover has an LOI greater than 28% and meets the flame retardant standards of UL 94 V-O
- **Orientation:** Upright, side or end mounting are recommended
- **Shelf life:** < 2% self-discharge per month at 77°F allows 6 months shelf life before boosting is required



HIGHLITE FLX

FIAMM FLX range

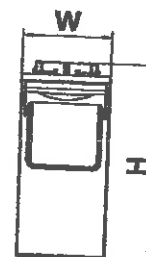
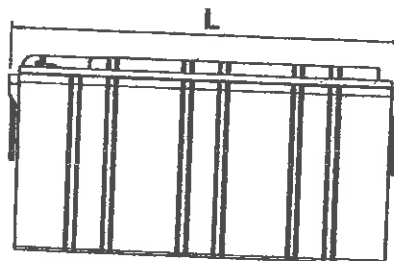
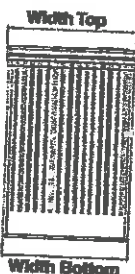
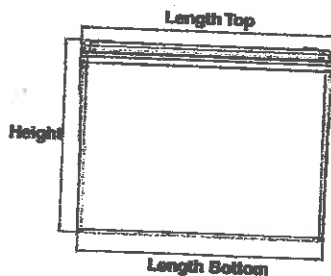
BATTERY TYPE	NOMINAL VOLTAGE (V)	CONSTANT POWER Watts per cell at 77°F		CAPACITY (Ah) at 77°F	DIMENSIONS (in.)			WEIGHT (lbs)	TERMINALS
		15 min to 1.67 VPC	20 hrs to 1.75 VPC		Top Length Bottom Length	Top Width Bottom Width	Height		
12 FLX 100	12	101	28.6	6.53/6.42	5.16/5.07	6.77	21.4	10/32 - UNF	
12 FLX 150	12	152	44.0	7.78/7.67	6.48/6.37	6.65	30.8	10/32 - UNF	
12 FLX 200	12	225	60.5	9.06/8.90	5.43/5.34	8.35	39.2	1/4" - 20	
12 FLX 300	12	340	82.5	10.27/10.16	6.85/6.57	8.58	58.3	1/4" - 20	
12 FLX 350	12	390	99.0	11.87/11.76	6.85/6.57	8.58	67.5	1/4" - 20	
12 FLX 400	12	415	110	13.31/12.74	6.85/6.57	8.46	73.3	1/4" - 20	
12 FLX 500	12	502	132	13.31/12.74	6.85/6.57	10.87	93.6	1/4" - 20	
12 FLX 540	12	570	154	13.31/12.74	6.85/6.57	10.87	98.0	1/4" - 20	
12 FLX 700	12	702	198	21.97/20.98	4.96/4.92	12.64	134	Female M8	

DISCHARGE WATTS PER CELL TO 1.67 V/CELL AT 77°F

BATTERY TYPE	MINUTES							
	15	30	60	90	120	150	180	240
12 FLX 100	186	181	101	83	61	42	35	24
12 FLX 150	279	196	152	124	92	63	52	36
12 FLX 200	400	300	225	180	140	100	83	58
12 FLX 300	570	445	340	278	221	161	122	84
12 FLX 350	660	520	390	315	232	175	138	97
12 FLX 400	740	550	415	342	262	195	156	112
12 FLX 500	814	613	502	418	318	232	181	128
12 FLX 540	910	740	570	485	355	262	215	152
12 FLX 700	1060	855	702	577	434	318	256	178

Electrical Characteristics

- + FLOAT VOLTAGE CHARGE AT 77°F: 13.62 V/bloc
- + FLOAT VOLTAGE COMPENSATION WITH TEMPERATURE: -8.3 mV/°F per bloc
- + TERMINAL TORQUE VALUE: 10/32 UNF = 44 - 53 in.lbs; 1/4" - 20 = 88 - 106 in.lbs; Female M8 = 88 - 106 in.lbs



FIAMM Energy LLC
1 FIAMM Way
Waynesboro, VA 22190

FIAMM

Industrial Batteries

REQUEST FOR QUOTATION
CRFQ AUD1700000006 - UPS Battery Replacement

UPS Battery Replacement Bid Pricing Page
Exhibit A

Item No.	Contract Item Line #	Mandatory Contract Item Requirements	Unit of Measure	Quantity	Unit Price	Extended Price
1	4.1.1.1	Eaton Powerware Model 153700004-002 or equal All Items provided for and listed under 4.1.1.1. All requirements listed under 4.1.1.1 shall be proportionally included within the bid price for each battery provided.	Each	80	276.39	22110.90
2	4.1.1.2	Uninstallation, removal and disposal of each battery unit, Eaton Powerware model 153302087-002. All Items provided for and listed under 4.1.1.2. All requirements listed under 4.1.1.2 shall be proportionally included within the bid price for each battery removed.	Each	80	34.50	2760.00
					Overall Total Cost:	24870.90

Vendor Name: ALLEGRA POWER & LIGHTING SYSTEMS
 Authorized Signature: [Signature]
 Vendor Address: P.O. BOX 9341 / S CHARLESTON WV 25303
 Phone and Fax: 304 546 1177
 Email: NEON.HRS@APLS.BIZ

**If the Vendor is submitting an electronic bid in wvOASIS, the Vendor must submit the pricing page, Exhibit A, by attachment.

ALTERNATE SELECTION FOR YOUR CONSIDERATION



HIGH RATE MAX



Valve Regulated Lead Acid Battery
Designed for UPS Standby Power Applications.

APPLICATIONS

- Data Centers
- Network Operations Centers
- Industrial Process Control Facilities
- Internet Housing Sites
- Semiconductor Manufacturing
- Banks & Financial Markets
- Power Generation Plants
- Hospitals & Testing Laboratories
- Emergency 911 Response Centers

FEATURES & BENEFITS

- 10 year design life @ 25°C
- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance.
- 3 Year Warranty (refer Dynasty warranty card, 41-9027)
- Patented Long Life Alloy having the lowest calcium levels in the industry - minimizing grid growth, reducing gassing, and extending battery life.
- Patented UL Recognized Flame-arresting vents in each cell for safety and long life.
- Designed with the same recombination, thermal runaway prevention, gassing and flame retardant characteristics of the Bellcore 4228 compliant Dynasty Telecom products.
- Flame retardant polypropylene case and cover compliant with UL 1778
- Proprietary Fixed Orifice Plate Pasting technology applying active materials on both sides of the grid for consistent cell-to-cell performance, higher capacity and uniform grid protection.
- Thermally welded case-to-cover bond to eliminate leakage.
- Can be operated in any orientation. Upright, side or end mounting recommended.
- Not restricted for air transport - Complies with IATA/ICAO Special Provisions A67.
- Not restricted for surface transport - Classified as non-hazardous material as related to DOT-CFR Title 49 parts 171-189.
- Not restricted for water transport - Classified as non-hazardous material per IMDG Amendment 27.

TECHNICAL DATA

Model	Voltage	AH 20 hr*	Constant Power Discharge Ratings - Watts per Cell @ 77°F (25°F)									Weight	
			Operating Time (in minutes) to 1.67 Volts per Cell										
			5	10	15	20	30	40	50	60	90	lbs	kg
UPS12-100MR	12	26.0	172	117	90.9	75.4	57.2	46.5	39.3	34.1	24.6	21.0	10.0
UPS12-150MR	12	34.6	290	193	148	120	88.9	71.1	59.4	51.1	36.1	27.3	12.4
UPS12-210MR	12	53.8	373	261	206	169	127	102	85.1	73.3	51.9	40.0	18.0
UPS12-300MR	12	78.6	546	385	300	245	183	147	123	106	75.0	58.4	26.5
UPS12-350MR	12	93.2	619	440	350	289	216	173	144	123	85.9	67.4	30.5
UPS12-400MR	12	103	716	506	400	328	244	195	162	139	97.2	75.8	34.4
UPS12-490MRLP	12	118	787	608	488	403	297	234	193	164	112	83.0	38.0
UPS12-490MR	12	141	771	593	488	411	317	258	218	189	135	100.0	45.0
UPS12-540MR	12	149	875	657	537	451	343	277	231	198	139	100.0	45.0
UPS6-620MR	6	199	938	747	620	530	410	335	283	245	174	72.0	33.0

* Nominal 20 hr rate to 1.75 VPC in Ampere-Hours.

SPECIFICATIONS

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)
Nominal Operating Temperature Range	+74°F (23°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C/5 amperes @ 20hr rate
Float Charging Voltage	13.65 ± 0.15 VDC average per 12V unit (6.75 to 6.90 per 6V unit)
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C/20
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D brochure 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C) (7.20 to 7.40 VDC per 6V unit.)
Terminal: Flag	0.22 in. clearance hole to accept 0.1875 in. or 10-32 bolt (UPS12-100MR)
Terminal: Inserted	Threaded copper alloy insert terminal to accept 10-32 UNF bolt (UPS12-150MR, UPS12-210MR) 1/4-20 UNC bolt (UPS12-300MR, UPS12-350MR, UPS12-400MR, UPS12-490MR, UPS12-540MR, UPS6-620MR)
Terminal Hardware Annual Retorque	32 in.-lbs (3.48 N-m) (UPS12-100MR)
Terminal Hardware Initial Torque: Inserted Terminal	40 in.-lbs. (4.5 N-m) (UPS12-100MR) 30 in.-lbs. (3.4 N-m) (UPS12-150MR, UPS12-210MR) 110 in.-lbs. (12.4 N-m) (UPS12-300MR, UPS12-350MR, UPS12-400MR, UPS12-490MR, UPS12-540MR, UPS6-620MR)

DIMENSIONS

	Dimensions						Battery Termination			
	A	B	C	D	E	F	UPS12-100MR	UPS12-150MR	UPS12-210MR	UPS12-300MR
	UPS12-350MR	UPS12-400MR/UPS12-490MR		UPS12-490MR/UPS12-540MR		UPS6-620MR				
UPS12-100MR	6.54 (166.2)	6.45 (163.7)	5.17 (131.3)	5.07 (128.8)	6.37 (161.7)	6.86 (174.3)				
UPS12-150MR	7.76 (197.1)	7.54 (191.4)	5.19 (131.9)	5.02 (127.6)	6.52 (165.7)	6.80 (172.7)				
UPS12-210MR	9.0 (228.6)	8.86 (225.1)	5.48 (139.2)	5.31 (134.8)	7.89 (200.3)	8.07 (205.1)				
UPS12-300MR	10.27 (260.9)	10.17 (258.4)	6.83 (173.4)	6.65 (168.9)	7.89 (200.3)	8.01 (203.5)				
UPS12-350MR	12.04 (305.8)	11.95 (303.5)	6.83 (173.4)	6.65 (168.9)	7.94 (201.6)	8.06 (204.8)				
UPS12-400MR	13.42 (340.9)	12.75 (323.7)	6.80 (172.7)	6.54 (166.0)	8.40 (213.2)	8.52 (216.4)				
UPS12-490MR	13.57 (344.7)	12.74 (323.6)	6.80 (172.7)	6.63 (168.4)	10.81 (274.5)	10.93 (277.7)				
UPS12-540MR										
UPS6-620MR	12.63 (320.8)	12.51 (317.8)	6.97 (177.0)	6.83 (173.4)	8.82 (224.0)	8.94 (227.2)				

*All dimensions in inches (mm). All dimensions are for reference only. Contact a C&D Representative for complete dimension information.
NOTE: Batteries to be mounted with 0.5 in (1.25 cm) spacing minimum and free air ventilation.

UPS12-540MR

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°C)										
Operating Time to End Point Voltage (in minutes)										
End Point Volts/Cell	5	10	15	20	30	40	45	50	60	90
1.75	728	564	471	406	318	261	239	221	191	136
1.70	833	626	511	433	332	269	246	226	195	138
1.67	875	657	537	451	343	277	252	231	198	139
1.65	912	683	550	462	349	280	255	234	201	141
1.60	959	701	560	468	353	283	258	237	203	143

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)										
Operating Time to End Point Voltage (in hours)										
End Point Volts/Cell	1	2	3	5	8	10	12	20	24	72
1.85	82.7	49.5	35.6	22.9	15.0	12.6	10.9	7.05	5.98	2.00
1.80	89.6	53.1	38.1	24.4	15.9	13.2	11.3	7.29	6.18	2.07
1.75	98.9	57.0	40.3	25.5	16.5	13.6	11.7	7.46	6.31	2.11

Note: Batteries to be mounted with 0.5 in. (1.25 cm) spacing minimum and free air ventilation. Specifications subject to change without notification. Above ratings do not include interunit connector voltage drops.

UPS6-620MR

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°C)										
Operating Time to End Point Voltage (in minutes)										
End Point Volts/Cell	5	10	15	20	30	40	45	50	60	90
1.75	862	681	573	497	392	323	297	274	238	169
1.70	890	718	602	517	403	330	302	278	241	171
1.67	938	747	620	530	410	335	307	283	245	174
1.65	951	763	634	542	419	342	313	288	250	178
1.60	1000	794	655	557	429	349	320	295	256	183

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)										
Operating Time to End Point Voltage (in hours)										
End Point Volts/Cell	1	2	3	5	8	10	12	20	24	72
1.85	106	63.6	46.2	30.1	20.3	16.9	14.5	9.27	7.85	2.73
1.80	114	67.6	48.8	31.6	21.2	17.6	15.1	9.66	8.10	2.83
1.75	121	71.2	50.9	32.6	21.9	18.1	15.6	9.96	8.42	2.87

Note: Batteries to be mounted with 0.5 in. (1.25 cm) spacing minimum and free air ventilation. Specifications subject to change without notification. Above ratings do not include interunit connector voltage drops.

High Rate Max Part Number	Manufacturer Approved Premium Replacement for:
UPS12-100MR	UPS12-100FR
UPS12-150MR	UPS12-140FR & MR12-150
UPS12-210MR	UPS12-170FR, UPS12-200FR & MR12-210
UPS12-300MR	UPS12-270FR & MR12-300
UPS12-350MR	UPS12-310FR & MR12-350
UPS12-400MR	UPS12-370FR & MR12-400
UPS12-490MRLP	UPS12-475FR, MR12-490 & UPS12-490MR (Low profile high rate applications)
UPS12-490MR	UPS12-475FR & MR12-490 (Extended run applications)
UPS12-540MR	UPS12-530FR & MR12-540
UPS6-620MR	UPS6-620FR

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