

# ILLUMINATOR EM

CENTRAL LIGHTING INVERTER  
1000 VA/W through 2800 VA/W

98%  
Efficiency!



# THE ILLUMINATOR SERIES EM

---

The Illuminator Series EM is a fast transfer Emergency Lighting Inverter utilizing Myers Power Products advanced technology and small footprint design. The Illuminator EM, as well as all of the Myers Power Products fast transfer lighting inverter systems are UL 924 listed and designed to support all lamp sources including fluorescent, incandescent, quartz, halogen, HID, and LED. This allows the use of these types of lamps and luminaires in the design of emergency lighting schemes without the need for quartz restrike. In addition, all Illuminator Series systems supply a true sine wave output. This allows for the incorporation of all current and future LED technologies into your emergency lighting layout.

The Illuminator Series EM's design incorporates the proven technology of all Myers Power Products lighting inverters and provides the end user with a 98% efficient system. This 98% efficient technology translates into lower utility operating costs and virtually no impact on heating and cooling requirements as compared to all other types of emergency lighting inverter systems.

The small cabinet, with wall or floor mount capabilities, allows the client to install this system virtually anywhere in the building with minimal space requirements. All Myers Power Products lighting inverters perform and log the monthly and yearly tests as required by NFPA standards, and our intelligent front meter panels allows easy access to this information. In addition, this front meter panel displays system status and allows for real time diagnostics of the system's electronics.

## APPLICATIONS

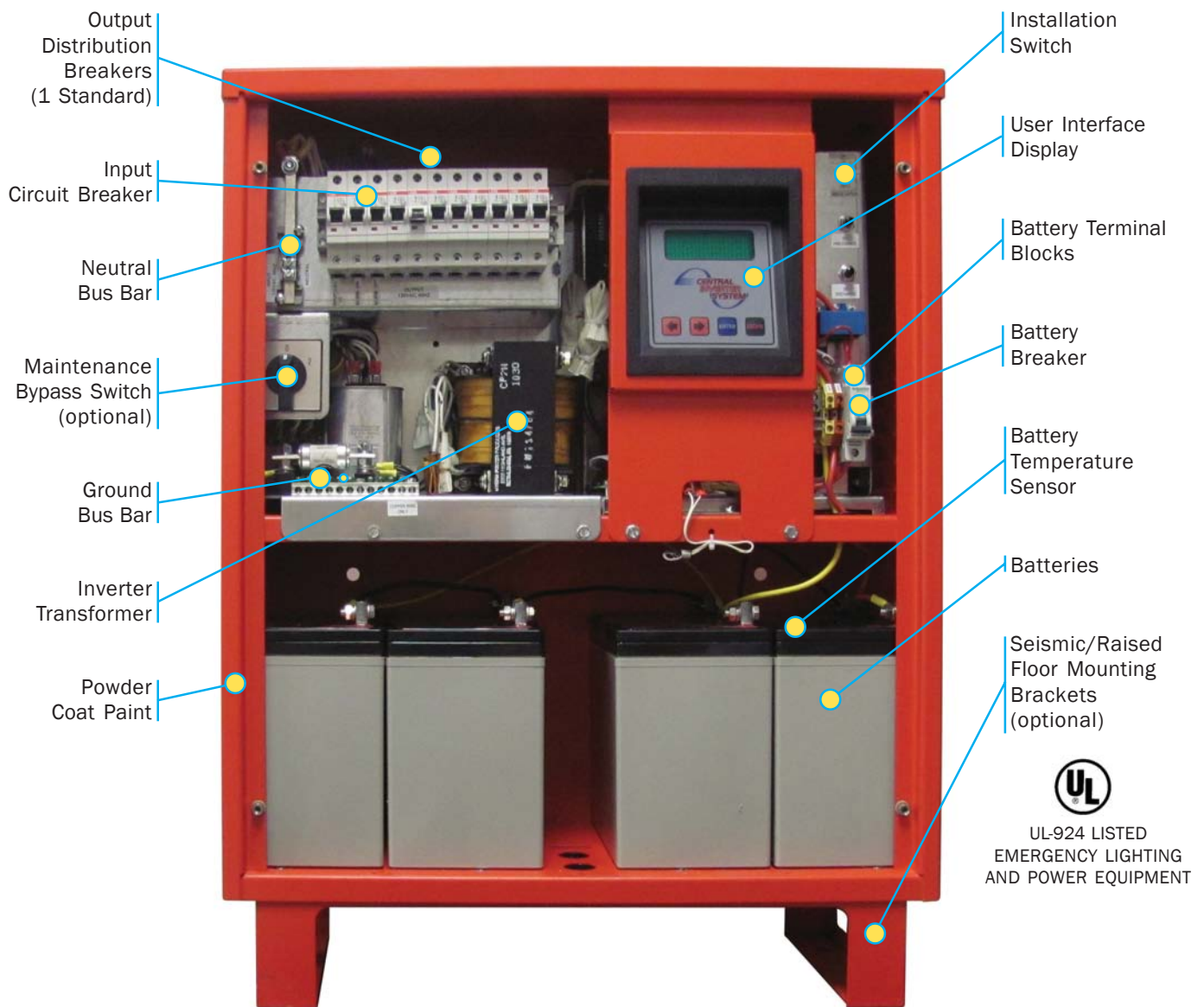
---



Illuminator Series EM  
Single Phase 1kW to 2.8kW  
(Shown with optional raised  
floor mounting bracket)

- 911 Facilities
- Airports
- Apartment/Condominium Complexes
- Assisted Living Centers, Nursing Homes
- Banks, Financial Institutions
- Casinos
- City, County, State, Federal Buildings
- Grocery Stores/Home Center Stores
- Hospitals
- Hotels, Motels
- Industrial
- Medical Offices
- Military Complexes
- Movie/Performing Art Theaters
- Office Buildings
- Parking Garages
- Prisons
- Race Tracks
- Railroad, Subway, Bus Stations
- Religious Facilities
- Restaurants
- Retail Department Stores
- Schools, Colleges, Day Care Centers
- Shopping Malls
- Sport Facilities
- Toll Booths
- Tunnels and Bridges
- Designed to work with all electronic power factor corrected ballasts.
- Central Inverters can eliminate unit equipment in architecturally sensitive applications.
- Eliminate maintenance costs of individual testing of unit equipment and battery powered ballasts. All tests and diagnostics are performed and recorded automatically.

# SYSTEM DESIGN FEATURES



## INVERTER

IGBT-based inverter with dynamic pulse-by-pulse current limiting and inrush protection. Short circuit and overload protection by microprocessor.

## WAVEFORM

Pure PWM sine wave, less than 3% THD with 0.5 leading and 0.5 lagging loads.

## CONSTRUCTION

Enclosure is cold-rolled steel with powder coated surface. Front cover is secured with four screws. Flush floor mount cabinet standard. Optional seismic/raised floor mount brackets available.

## BATTERY CHARGER

Temperature compensated with 24 hour recharge for 90 minute system standard.

## BATTERIES

Maintenance-free sealed lead calcium VRLA with ten year design life.

## SMALL FOOTPRINT

11" (Depth) x 25" (Wide)  
28" (High) for 1000VA/W  
44" (High) for 1600 and 2200VA/W models  
55" (High) for 2800VA/W model

## USER INTERFACE DISPLAY

Self-testing and self-diagnostics per NFPA and UL standards. Memory logs of over 1525 parameters contained in Test, Event and Fault logs. Easy to read alpha-numeric display with user-friendly keypad integrates system's Meter, Alarm, Control and Program functions.

# SYSTEM DISPLAY FUNCTIONS



NOTE: All displayed meter functions match the inverter.

## METER FUNCTIONS

- AC Voltage Input
- AC Voltage Output
- AC Current Output
- Battery Voltage
- System Days
- Battery Current
- VA Output
- Inverter Watts
- Ambient Temperature
- Inverter Minutes

## PROGRAM FUNCTIONS

- Date
- Time
- Month Test Date/Time
- Yearly Test Date/Time
- Load Fault Reduction Setting
- Low Battery Alarm
- Near Low Battery Alarm
- Low AC Voltage Alarm
- High AC Voltage Alarm
- Ambient Temperature Alarm

## CONTROL FUNCTIONS

- Test Log & Event Log (75 Logs Stored): Date, Time, Duration, Output Voltage, Output Current, Ambient Temperature and Alarms Present
- Alarm Log (75 Logs Stored): Date, Time, Alarm Type
- Test
- Buzzer On/Off

# SYSTEM OPTIONS

## E-MAIL/MODEM (requires analog phone line)

User can enable/disable and program alarms that will trigger messages to e-mail destinations. User can set up specific alarm events that will alert service or maintenance personnel. The system will transmit monthly and yearly tests per NFPA requirements. Bi-directional communication eases system diagnostics and data retrieval through the RS-232 serial communication port.

## VARIABLE TIME DELAY

Allows for delay of inverter retransfer to continue supplying emergency power to the normally off output for upto 15 minutes after the return of input power.

## OUTPUT CIRCUIT BREAKER

Maximum output breakers available: 10 unsupervised (1-pole), 6 supervised (1-pole)

## OUTPUT TRIP ALARM

An audible and visual alarm activates when an output distribution circuit breaker is tripped.

## MAINTENANCE BYPASS

This device is internally mounted in the system and permits maintenance personnel to easily bypass the inverter and connect directly to the AC utility power. The "make before break" switch isolates the electronics or inverter system to allow performance of routine maintenance or servicing. Inverter bypass is indicated on user interface panel.

## SUMMARY FORM C CONTACTS

Form "C" dry contacts will change state when any system alarm activates. Contacts change state with the following alarms: High/low battery charger fault, near low battery, low battery, load reduction fault, output overload, high/low AC input volts, high ambient temperature, inverter fault, test failure, and optional circuit breaker trip alarm.

## REMOTE SUMMARY ALARM PANEL

A wall mountable enclosure containing an audible alarm/silence switch and light that will activate upon any system alarm 1000' maximum distance from inverter.

## NORMALLY OFF OUTPUT

This output circuit is dedicated for emergency-only equipment. Emergency-only equipment operates during power outages and when the system is on battery back up. This option leaves the selective load circuits off during normal utility power conditions.

## INVERTER ON FORM C CONTACT

Form "C" dry contacts that will change state when the inverter transfers to battery operation.

## STATUS MONITORING FORM C CONTACTS

Form "C" dry contacts capable of monitoring system and option statuses (Inverter On, Inverter Off, AC Present, High Temperature, Summary Alarm, System Bypass\*, and OTA\*)  
\* Requires purchase of Maintenance Bypass and/or Output Trip Alarm options.

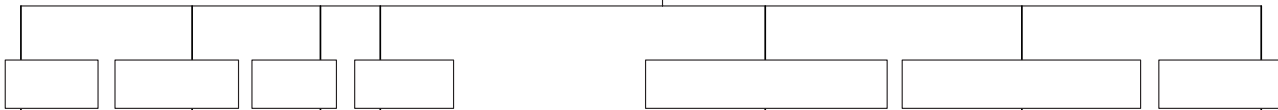
## ZONE MONITOR(S)

Monitors AC power presence in a specific zone (area, distribution panel, etc. ). Upon loss of power in the zone(s), inverter will turn on, activating ALL normally off (emergency only) circuits. All normally on loads remain on. When power returns in the zone(s), inverter will turn off after its preset delay and normally off loads will turn off. Contact factory for quantity limits per application.

## LOAD CONTROL RELAYS

Used to bypass an emergency lighting load's control device ("switch mechanism" such as a wall switch, dimmer, photocell, time clock, etc.). The connected "switched" emergency load(s) are powered by utility through the load control relay(s). The inverter monitors AC utility and transfers when utility fails, automatically forcing load control relay(s) to activate and bypass the "switch mechanism" to loads. "Switch mechanism" remains bypassed and loads are powered by the inverter until restoration of utility power at which time "switched" loads are returned to their previous state. Contact factory for quantity limits per application.

Example Model Number:  
**1-EM-4-S-BA2006-T-S-M-2YW**



**SYSTEM TYPE**

**EM** - Illuminator Series "EM"

**BATTERY TYPE**

**S** - Standard (VRLA)

**OUTPUT BREAKERS<sup>3</sup>**

Example: B A 20 07

**WARRANTY<sup>6</sup>**

**2YW** - Factory Start-Up  
Extended 2-Year  
Electronics Warranty  
**5YP** - 5-Year Preventative  
Maintenance Plan,  
Start-Up Included  
**5YW** - 5-Year Extended  
Electronics  
Warranty; Start-up  
Included  
**SMP<sup>7</sup>** - Service Monitoring  
Plan

**VOLTAGE (INPUT / OUTPUT)<sup>1</sup>**

- 1** - 120 - 120
- 2** - 120 - 120/277<sup>9</sup>
- 3** - 208 - 120<sup>9</sup>
- 4** - 240 - 120/240<sup>9</sup>
- 5** - 277 - 120<sup>9</sup>
- 6** - 277 - 277
- 7** - 277 - 277/120<sup>9</sup>
- 8** - 208 - 120/240<sup>9</sup>
- 9** - 208 - 120/208<sup>9</sup>
- Z** - Other Voltages

**KVA / KW<sup>2</sup>**

- 1** - 1.0
- 2** - 1.6
- 3** - 2.2
- 4** - 2.8

**OUTPUT**

- B** - Normally On
- N** - Normally Off <sup>8</sup>

**VOLTAGE**

- A** - 120
- B** - 208
- C** - 240
- D** - 277
- Z** - Other

**AMP RATING**

- 10, 16, 20, 25, 32**

**QUANTITY**

- 01 - 10<sup>3</sup>**

**OPTIONS**

- A** - Remote Summary Alarm Panel
- C** - Status Monitoring Dry Form C Contacts
- D** - Drip Top (NEMA 2)
- E** - E-Mail Modem
- I** - Inverter On Dry Form C Contacts
- L** - Load Control Relay <sup>5</sup>
- M** - Maintenance Bypass <sup>4</sup>
- S** - Summary Fault Dry Form C Contacts
- T** - Output Trip (Supervised) Alarm
- V** - Variable Time Delay
- W** - Wall Mount Brackets
- X** - Zone Monitoring
- Z** - Seismic/Raised Floor Mounting Bracket

1. Only single phase voltages available.
2. KVA = KW
3. Maximum output breakers available: 10 unsupervised (1-pole), 6 supervised (1-pole). Breakers provided are 20A unless specified otherwise. A 2-pole breaker occupies 2 positions.
4. Maintenance bypass switch is a "make before break".
5. Contact factory for load control applications.
6. One year warranty is standard.
7. Requires Factory Start-up and E-mail/Modem options. This program will provide monitoring of the lighting inverter system by our factory service department. All monthly and yearly system tests will be reviewed by our factory service department for early warning signs of any system malfunction. Any system alarms and monthly/yearly test results will automatically be E-mailed to our service department where corrective action can be taken. While under warranty, if necessary, a factory authorized service technician will be scheduled to complete any necessary repairs. This monitoring program will require a dedicated telephone line.
8. Circuit breaker protection provided.
9. Enclosure height may increase. Contact factory.

**ACCESSORIES**

- MOD** - Modem
- EMBP<sup>4,5,4</sup>** - External Maintenance Bypass Switch
  - A)** Cannot purchase External Maintenance Bypass Switch with Branch Circuit Breaker option.
- SNMP** - Network Interface Device

# SYSTEM SPECIFICATIONS



**Floor Mount Bracket  
Optional**

Note: Height increases by 4"



## ELECTRONICS MODULE

Base Model Number

Power Rating (VA/W)

Efficiency (@ full load)

Audible Noise (dBA @ 1m)

Heat Loss (BTU)/HR

Cabinet Dimensions

					Width in/cm	Height in/cm	Depth in/cm	Weight lbs/kg
EM-1	1000	98%	45	70	25/61.6	28/69.9	11/26.67	121/55
EM-2	1600	98%	45	110	25/61.6	44/109.86	11/26.67	165/75
EM-3	2200	98%	45	150	25/61.6	44/109.86	11/26.67	174/79
EM-4	2800	98%	45	190	25/61.6	55/139.7	11/26.67	203/92

## BATTERIES

(90 Minutes @ Full Load)

Number of Batteries

Voltage (VDC)

Current (Amperes)

90 Minute Batteries lbs/kg				Total System Weight lbs/kg
160/73	4	48	26	281/128
240/109	6	72	27	405/184
320/146	8	96	27	494/225
400/182	10	120	27	603/274

## SYSTEM SPECIFICATIONS

<b>INPUT</b>	<p>Voltage</p> <p>Input Power Walk-in</p> <p>Input Frequency</p> <p>Synchronizing Slew Rate</p> <p>Protection</p> <p>Harmonic Distortion</p> <p>System Short Circuit Rating</p>	<p>120 or 277VAC 1-phase 2-wire +10% -15%. Contact factory for all other voltages.</p> <p>Walk-in limiting inrush current to less than 125%, 10 times for 1 line cycle</p> <p>60Hz, +/- 3%, 50Hz Available upon request</p> <p>1Hz per second nominal</p> <p>Fuse &amp; Circuit Breaker</p> <p>&lt; 10%</p> <p>65 KAIC</p>
<b>OUTPUT</b>	<p>Voltage</p> <p>Static Voltage</p> <p>Dynamic Voltage</p> <p>Harmonic Distortion</p> <p>Overload</p> <p>Output Frequency</p> <p>Load Power Factor</p> <p>Inverter Overload</p> <p>Protection</p> <p>Crest Factor</p>	<p>120 or 277VAC 1-phase 2-wire. Contact factory for all other voltages.</p> <p>Load current change +/-2%, battery discharge +/-12.5%</p> <p>+/- 2% for +/-25% load step change, +/-3% for a 50% load step change, recovery within 3 cycles</p> <p>&lt; 3% THD for linear load</p> <p>Circuit Breaker protected</p> <p>60Hz +/- .05Hz during emergency mode</p> <p>.5 lag to .5 lead</p> <p>380% for 16 line cycles, 125% for 10 minutes</p> <p>Optional Distribution Circuit Breaker(s) (1 breaker standard)</p> <p>3.8</p>
<b>BATTERY</b>	<p>Type</p> <p>Charger</p> <p>Protection</p> <p>Disconnect</p>	<p>Valve-regulated sealed lead-calcium.</p> <p>Microprocessor controlled for various battery types and temperature compensating</p> <p>Automatic low-battery disconnect; automatic restart upon utility return.</p> <p>Circuit Breaker</p>
<b>ENVIRONMENTAL</b>	<p>Altitude</p> <p>Operating Temperature</p> <p>Storage Temperature</p> <p>Relative Humidity</p>	<p>&lt; 10,000 feet (above sea level) without derating</p> <p>Inverter: 0° to -40°C (32° to 104°F)</p> <p>Battery: 20° to 30°C (68° to 86°F) per UL-924</p> <p>-20° to 70°C (-4° to 158°F) (electronics only)</p> <p>&lt; 95% (non-condensing)</p>
<b>GENERAL</b>	<p>Design</p> <p>Generator Input</p> <p>Control Panel</p> <p>Metering</p> <p>Alarms</p> <p>Communications</p> <p>Manual Maintenance Bypass</p> <p>Alarm Contacts</p> <p>Warranty</p> <p>Factory Start-up</p> <p>5 Year Service Plan</p>	<p>Line interactive PWM inverter type utilizing IGBT technology with 2ms transfer time. 98% efficiency.</p> <p>Compatible with generators (50KVA or larger).</p> <p>Microprocessor controlled 4 x 20-character vacuum fluorescent display with touch pad controls/functions &amp; scrolling system status</p> <p>Input &amp; Output Voltage, Battery Voltage, Battery &amp; Output Current, Output VA, Temperature, Inverter Wattage.</p> <p>High/Low Battery Charger Fault, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High/Low AC Input Volts, High Ambient Temperature, Inverter Fault, Output Fault, Optional Circuit Breaker Trip</p> <p>RS-232 port (DB9). Optional E-mail/modem, SNMP.</p> <p>Optional Internal or optional external without internal distribution breakers.</p> <p>Optional Summary Form "C" Contacts, Inverter On Contact (IOC) and/or Status Monitoring Contacts.</p> <p>1 year standard warranty includes all parts, labor, &amp; travel expenses within 48 contiguous states. Up to 10 years prorated warranty on batteries. Extended warranties, preventative maintenance and/or customized service plans are available.</p> <p>Purchase factory start-up &amp; receive 1 additional year of warranty.</p> <p>Purchase 5 year service plan &amp; receive free factory start-up.</p>
<b>PHYSICAL</b>	<p>Cabinet</p> <p>Cooling</p> <p>Cable Entry</p> <p>Access</p>	<p>Freestanding NEMA Type 1; powder coat paint</p> <p>Forced Air, during emergency and high charge mode.</p> <p>Bottom, Top or Side</p> <p>Front</p>



**Illuminator Series E/IE**  
**Single Phase**  
**1.5KVA to 16.7KVA**



**Illuminator Series CR/DR**  
**Single and Three Phase**  
**Outdoor System 3KVA to 8KVA**



**Illuminator Series CIII**  
**Three phase**  
**4.8KVA to 50KVA**



44 South Commerce Way • Bethlehem, PA 18017  
Tel: (800) 526-5088 • Fax: (610) 868-8686  
[www.myerspowerproducts.com](http://www.myerspowerproducts.com)