

Table of contents



LUMASOURCE **p 202 - 205**



- 120 Vdc central single source emergency lighting system.

DC Central Systems **p 206 - 209**



- Fully automatic charger, battery and specified transfer and distribution features.

Central Systems

120 VDC central single source emergency lighting system

Time and labour saver only one conduit required!

In an existing or new installation where exit signs and emergency lighting may be supplied by a single 120VDC source using a common negative wire, one normally on positive and one normally off positive. 3 wire output from the system reduces the number of conductors by up to 40%. It also eliminates 50% of the conduit, EMT or BX runs by using a single common conduit for LED exits and emergency lighting remotes.



Features

- Single-source 120 VDC supply for both exit and emergency lights
- Reduced number of conductors
- Eliminates 50% of conduit, BX or EMT runs for exit and emergency lighting
- Control and supervision functions on single modular board
- Complete package of full supervisory functions and alarms included in standard unit
- Floor-mount cabinet
- Battery is sealed maintenance free lead calcium
- All LumaSource Series systems are designed and manufactured in Canada
- CSA and Ontario Hydro approved
- BMEC (Building Materials Evaluation Commission) approved for compliance to the Ontario Building Code
- Overall reduction on power consumption using LED exit signs.



Operations

LUMASOURCE Series Central Emergency Lighting Systems are available in free-standing cabinet style enclosures.

- Heavy duty, sheet-steel cabinet.
- Cabinets are painted ASA No. 61 grey electrolyte resistant enamel.
- Locking and hinged front door.
- Front access to battery charger for ease of inspection and servicing.

Charger / Controls

Lumacell's solid state fully automatic charger features single module control board design. This feature provides cost effective superior performing equipment, with ease of maintenance and service ability.



LUMASOURCE

Standard Features and Controls

- LVD at 91% of nominal
- Temperature Compensation
- Ground Fault Alarm (Audible & Visual)
- AC input breaker
- DC Volt & Ammeter (2% Accuracy)
- AC present LED indicator
- Float level Charge LED indicator
- Equalize level Charge LED indicator
- Charger Failure Alarm
- AC Failure Alarm
- High Battery Voltage Alarm
- Test Switch
- Remote Monitor Alarm Panel
- Brownout Protection
- Dry Contacts
- BMEC - Ontario Building Materials Evaluation Commission Approved
- SPF - sprinkler-proof cabinet comes with drip shield

Optional Features Code

- | | |
|---------------------------------|-------------|
| - Time Delay | TD |
| - 3 Phase Sensing | 3PH |
| - 12 Hour Recharge | 12HR |
| - Battery exerciser | CYC |
| - Input battery circuit breaker | BCB |
| - Common Zone sensing | ZSC |

Application

New construction or retro-fit, the **LUMASOURCE** Series utilizes the latest technology and engineering to reduce the cost of emergency lighting installations. The unique 3 wire design allows for the use of just one conduit. With one positive dc normally energized conductor and a common negative conductor the LED exits are supplied constant power. With the same common negative conductor and another positive DC conductor the remote emergency lights are powered on demand. Available in sizes from 4120 watts to 22520 watts for 30 minutes. Other runtimes available. Please consult factory.

Electrical

Input: 120V, 208V, 240V, 347V, 600V AC 60 HZ Single Phase

Output: 120V DC (3 wire (normally on positive, common and normally off positive))

Systems have been designed for minimum 1/2 hour operation time and are capable of full recharge in 24 hours.

For systems rating chart and ordering guide please see Page 4 of this brochure. Other discharge times are available upon request.

Central Systems

120 VDC central single source emergency lighting system



Warranty

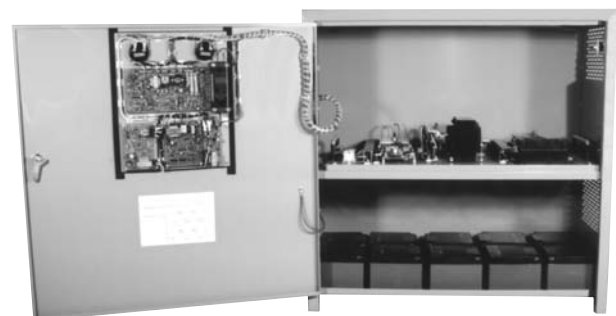
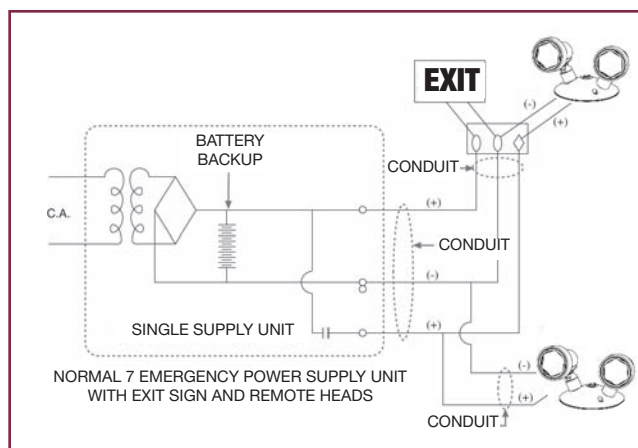
The **LUMASOURCE** system is warranted for one year against defects in workmanship and all electronic components.

The batteries are warranted 1 year complete and 9 years pro-rata against defects in workmanship and materials. Battery warranty is subject to proper testing and inspection as described in the Canadian Electrical Code, Section 46-102 & 46-104.

Approvals

- CSA Certified
- Ontario Hydro: Rule 46-108 (3)

Typical Interconnection Wiring Diagram



CAD Drawing illustrates how the **LUMASOURCE** Series is applied, saving time, material and money.

Call your local Lumacell Representative for further information, or application assistance.



LUMASOURCE

Enclosure Dimensions

System Series	Console H x W x D
LS 4120	38" (96,5 cm) x 38" (96,5 cm) x 18" (45,7 cm)
LS 9390-11260	38" (96,5 cm) x 38" (96,5 cm) x 28" (71,1 cm)
LS 13140-22520	56" (142,2 cm) x 38" (96,5 cm) x 28" (71,1 cm)

Units rating

SL Series batteries : maintenance free, sealed lead-calcium.
Watts at 91% of nominal voltage.

System Series	30 min.	1h00	1h30	2h00
LS4120	4120	2450	1790	1440
LS9390	9390	5590	4080	3290
LS11260	11260	6700	4890	3940
LS13140	13140	7820	5710	4600
LS18780	18780	11180	8160	6580
LS22520	22520	13480	9780	7880

Develop a Model Number as shown in the following chart

System Designation	Single Phase Input Voltage	Battery Type	Capacity in Watts*	Quantity of Exit Signs	Mounting	Output Voltage	Discharge Time (Minutes)	Optional Equipment
LS	120 Vac	SL Sealed Lead Calcium	Select from Battery Capacity chart in folder	100E	C = Console	120Vdc	30	TD
	208 Vac						60	3PH
	240 Vac						90	12HR
	347 Vac						120	CYC
	600 Vac							RRAP
							ZSC	
							BCB	
							For other discharge times please contact factory.	See page 2 for option details

DC Central System

Fully automatic charger, battery and specified transfer and distribution features

Lumacell's Central DC Systems are utilized where a large number of remote heads or standard 120 Volt incandescent fixtures may be supplied from a single source. The systems offer the advantage of a central location for maintenance with full supervision of all operating functions. Contact your Lumacell representative for information.



Features

- 24, 36 and 120 VDC systems sealed lead acid batteries
- Control and supervision functions on single modular board
- Complete package of full supervisory functions and alarms included in standard system
- Battery selection of totally sealed maintenance free lead acid batteries
- All systems are designed and manufactured in Canada
- CSA certified
- BMEC (Building Materials Evaluation Commission) approved for compliance to the Ontario Building Code



Made in Canada



Charger Features

Lumacell has developed a unique modular charger design in which all electronic control functions and pilot lights are mounted on a single control board. This is connected to the operating power components using screw type connectors— making the circuit board easily removable by means of only four screws. Any required field service, consequently, is faster and significantly simpler than with older style multiple board designs.

All chargers include a contactor which automatically disconnects the batteries from the load when battery bank voltage falls below 91% of nominal, in order to prevent over-discharge of batteries. The operating temperature for the system is from 0°C to 40°C. The control board is temperature compensated in order to meet the battery required float voltage at temperatures below and above 25°C, as recommended by battery manufacturers. Internal control allows for spark free battery bank connection during installation and scheduled maintenance procedures.

Charging Operations

The charger will fully recharge the battery within twenty four hour period from a full discharge. The charger maintains regulation of $\pm 0.5\%$ of voltage for a $\pm 10\%$ input voltage variation. The charger provides automatic equalize cycle whenever the charge current is more than a preset value. The charger operates in an equalize mode after each utility power return. This ensures maximum battery capacity at all times, with maintained life expectancy.

Batteries

Sealed Maintenance-Free Lead Acid Gas Recombination (SL Series)

Uses gas recombination to eliminate the escape of hydrogen. Thick plates are constructed of high strength material which resists shedding, flaking, or mechanical failure. Design Life; 10 years under normal operating conditions.



DC CENTRAL SYSTEMS

Standard Controls

The front panel includes the following controls:

- AC Input Circuit Breaker
- DC Battery Voltmeter (2% Accuracy)
- DC Charge Rate Ammeter (2% Accuracy)
- Green “ac on” LED (on at all times except during power failure)
- Green “float” LED (indicates that the battery is receiving float charge to maintain the battery at full charge at all times)
- Amber “equalize” LED (indicates that the charger is in the high charge equalize mode, balancing the charge level in the individual battery cells)
- Brown-out protection
- Test switch.

Standard Alarms

- AC Failure LED and Alarm
- High Battery Voltage LED and Alarm
- Charger Failure LED and Alarm
- Ground Leakage Alarm
- An audible alarm and a common LED shall indicate “Ground Leakage” and/or Fuse/Circuit Breaker open/trip alarm.

Distribution Options

A separate distribution panel is available for all systems.

A choice of fuses or circuit breakers is available.

Fuse Distribution Panel

Select -DPF () for separate distribution fuse panel.
 Select -DPFF () for separate distribution fuse panel with visual and audible alarm on main console for failure of any fuse.

Note: “()” indicates the number of circuits required.

Circuit Breaker Distribution Panel

Specify -DPCB () for separate circuit breaker panel.
 Specify -DPCAB () for separate circuit breaker panel with visual and audible alarm on main console for tripping or opening of any breaker.

Note: “()” indicates the number of circuits required.

Transfer Options

Normally “off” load or alternatively on 120 Volt DC systems, maintain a normally “on” load.

Normally “off” (DC load): (TPD)

If the lamp load is going to be turned on in the event of power failure add suffix -TPD to the model number.

Normally “on” (AC/DC load): (TPA)

120 V DC systems only:

The 120 V incandescent load shall have 120 VAC power normally supplied to it and the load shall be transferred to 120 VDC upon failure. Add suffix -TPA to the model number. For other AC input voltages please contact factory.

Both Normally “on” & “off” loads: (TPA/TPD)

Both of the above apply.

Other Options

- Time delay TD
- 3 phase sensing 3PH
- Input battery circuit breaker BCB
- Battery exerciser CYC
- Recessed Remote alarm panel RRAP
- Common Zone Sensing ZSC()*
- Individual zone sensing, specify number of zones ZSI()*

* Zone explanation: each specified zone relay monitors an individual lighting circuit in a building. Should the monitored circuits lose AC power, the connected lighting load will automatically illuminate:

a - all zones if ZSC is specified

b - that zone only if ZSI is specified.

Cabinets

Systems are available in a free standing floor mount cabinet. The cabinet shall be constructed of not less than 14 gauge steel with corrosion resistant undercoating. Standard finish is ASA61 grey baked enamel.

DC Central System



Warranty

The complete system is guaranteed for a period of one (1) year against defects in workmanship and materials. The battery portion of the equipment carries a ten (10) year pro-rata warranty during its useful service life against defects in workmanship and materials. The battery warranty is subject to the provision of normal testing and inspection as specified in the Canadian Electrical Code, Section 46-102, and National Fire Code of Canada. Limit room ambient temperature between 0°C to 35°C (32°F to 95°F). Optimum system performance occurs at 25°C (77°F). A battery service life is defined as the period which the battery could still provide at least 80% of its rated capacity.

Typical Specification

Provide and install a complete emergency lighting system as described herein and shown on the drawings.

The system shall consist of a charger, battery and specified transfer and distribution features.

The charger shall be fully automatic solid state type using integrated circuit control. The output voltage variation shall be $\pm 0.5\%$ for input variation of $\pm 10\%$. The charger shall recharge the battery within 24 hours after a power failure. The charger shall include a contactor to automatically disconnect the battery from the load when the battery voltage falls below 91% of nominal.

The charger shall be of a modular design with all pilot lights and electronic control functions on a single board mounted behind the front panel. The single control board shall have LED pilot lights for the following functions (which shall show through the front panel):

- Green “ac on” LED
- Green “float” Charge LED
- Amber “equalize” LED

The single control board shall also include LED and an audible alarm with call-back function for the following alarms:

- AC Failure
- High Battery Voltage
- Charger Failure
- Battery Ground Leakage

OPTIONAL ALARMS

- Fuse/Circuit Breaker Open/Trip

SELECT SL BATTERY

Select battery bank voltage, capacity and duration of required backup time.

Select AC input voltage.

Select system transfer option from TPD(), TPA(), or TPA()/TPD() where the load watts are shown in brackets.

SELECT OPTIONS.

The equipment shall be provided with a separate distribution panel with _____ fuses or circuit breakers (select one) rated at _____ Amps.

Optional: All distribution fuse or circuit breaker panels shall be alarmed so that if a fuse or circuit breaker has

failed during operation, a visual and audible alarm is activated. The system shall be –Lumacell System LM (Select Model Number from chart below). Select Remote Fixture from fixture section of Catalogue.



DC CENTRAL SYSTEMS

SL Series: Sealed Maintenance Free Lead Acid Battery Capacity Chart 25°C

Model	Nominal Backup Capacity				
	30 min.	60 min.	90 min.	120 min.	
A	LM24SL35	820W	490W	355W	285W
B	LM24SL65	1280W	820W	615W	490W
C	LM24SL90	1875W	1115W	815W	655W
D	LM24SL100	2250W	1340W	975W	785W
E	LM24SL120	2625W	1560W	1140W	920W
F	LM24SL180	3755W	2235W	1630W	1315W
G	LM36SL35	1230W	730W	537W	432W
H	LM36SL65	1920W	1230W	927W	741W
I	LM36SL90	2815W	1675W	1220W	985W
J	LM36SL100	3375W	2010W	1465W	1180W
K	LM36SL120	3940W	2345W	1710W	1380W
L	LM120SL35	4120W	2450W	1790W	1440W
N	LM120SL90	9390W	5590W	4080W	3290W
O	LM120SL100	11260W	6700W	4890W	3940W
P	LM120SL120	13140W	7820W	5710W	4600W
Q	LM120SL180	18780W	11180W	8160W	6580W
R	LM120SL200	22520W	13400W	9780W	7880W

All capacities are in watts to 91% of nominal voltage.
Note: For other voltages and capacities contact your sales representative.

Standard Features

CODE	DESCRIPTION
GL	Ground leakage.
FC	One set of dry contacts for remote fault sensing.
RAP	Remote alarm panel.
SPF	Drip shield (2.5" overhang on console).
BRO	Brownout.
BMEC	Ontario Building Materials Evaluation Commission approved.

Cabinet dimensions

Series	Cabinet Type	Dimensions HxWxD
LM24SL 35-180	5C	25" X 29" X 14"
LM36SL 35-100		
LM36SL 110-120	LM15	38" X 38" X 18"
LM36SL 160-180		
LM120SL 35		
LM120SL 90-100	LM18	38" X 38" X 28"
LM120SL 120-200	LM28	56" X 38" X 28"

Electronics and batteries are in the same cabinet.

Product Code Construction

Serie	DC Voltage	Battery Type	Capacity	Operating Time minutes	AC Voltage	Transfer Options	Distribution Options	Other Options
LM	24	Blank = SL	Select from Battery Capacity chart in folder	30	120 Vac	*TPD	*DPF	*ZSC
	36			60	208 Vac	*TPA	*DPFF	*ZSI
	120			90	240 Vac	*TPA/TPD	*DPCB	**TD
				120	347 Vac		*DPCAB	BCB
				600 Vac				3PH
							CYC	
								RRAP
						* Specify Watts for each type of load.	* Specify number of circuits.	* Specify N° of zones. ** Specify time.

