



# Descriptive Report and Test Results

MASTER CONTRACT: 187981

REPORT: 1320085

PROJECT: 2717388

**Edition 1:** December 1, 1997; Application No LR 110823-3 – Eastern Region  
Issued by Marc Souril, E.I.T.

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**Issued by Patrick Hew**

**Report pages reissued**  
**Attachment 10-12 Added**

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## **PRODUCTS**

CLASS 3435 02 - EMERGENCY LIGHTING EQUIPMENT - Unit Equipment \_ Performance

CLASS 3435 82 - EMERGENCY LIGHTING EQUIPMENT - Unit Equipment \_ Performance \_ CERTIFIED TO U.S. STANDARDS

CLASS 3425 12 - LUMINAIRES - Exit Type

CLASS 3425 92 - LUMINAIRES - Exit Type - Certified to US Standards

**CLASS 3425 14 - LUMINAIRES - Energy Efficiency - Exit Signs**

Emergency lighting Unit, LED exit sign, Surface mounted with self-contained battery:

## **LUXNET MODEL SERIES:**

EG-SP-LSR SERIES (Edge lit design)

ES-L-SP SERIES (STEEL CABINET)

EP-X SP SERIES (POLYCARBONATE ENCLOSURE)

EAL-SP SERIES (EXTRUDED ALUMINUM ENCLOSURE)

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EAML-SP SERIES (EXTRUDED ALUMINUM ENCLOSURE)

EDL-SP SERIES (DIE CAST ENCLOSURE)

EGA-SP SERIES (EDGE LITE CYLINDRICAL DESIGN)

EGD-SP (EDGE LIT DIE CAST DESIGN)

EVL-SP SERIES (VANDAL RESISTANT DESIGN)

EDRY-SP-L SERIES (GASKETED DESIGN)

Maximum input: 120V, 60Hz, 0.05A, 90 min. or 277V 60 Hz.347V, 60Hz, 0.02A, 90 min.

Optional time duration with -120SP or 2HRSP Option is 120 minutes

For -B6L option:

Maximum input: 120V, 60Hz, 0.05A, 90 min. or 277V 60 Hz.347V, 60Hz, 0.02A, 90 min.

Emergency lighting Unit, LED exit sign, Surface mounted or Recessed type not suitable for thermal insulation contact:

### **LUXNET MODEL SERIES**

EGLR-SP SERIES (EDGE LIT DESIGN)

Maximum input: 120V, 60Hz, 0.05A, 90 min. or 277V 60 Hz.347V, 60Hz, 0.02A, 90 min.

For -B6L option:

Maximum input: 120V, 60Hz, 0.05A, 90 min. or 277V 60 Hz.347V, 60Hz, 0.02A, 90 min.

Optional time duration with -120SP or 2HRSP Option is 120 minutes

### **LUXNET MODEL SERIES ADDITIONAL NOMENCLATURE:**

Prefixes may include:

Change E to S to indicate Sortie legend

#### **Suffixes may include:**

/1 or/2 or/U indicating number of faces

W,C ,E OR U indicating mounting

-6,12,24 indicating supplementary DC input voltage.

-UDC indicating universal 6, 12 or 24 volt input.

-C860 indicating C860 compliant legend and visibility

-B6L indicating 6" side by side EXIT SORTIE legend

additional suffixes may indicate frame or trim color and finish

Edge lit signs: -R,-RW,-RMIR indicating legend color and background

-TL for 2.75" trim plate

Emergency lighting Unit, LED exit sign, Surface mounted:

### **LUXNET MODEL SERIES:**

EG- SERIES (Edge lit design)

ES- SERIES (STEEL CABINET)

EP- SERIES (POLYCARBONATE ENCLOSURE)

EA- SERIES (EXTRUDED ALUMINUM ENCLOSURE)

EAM SERIES (EXTRUDED ALUMINUM ENCLOSURE)

EDL SERIES (DIE CAST ENCLOSURE)

EGA SERIES (EDGE LITE CYLINDRICAL DESIGN)

EGD (EDGE LIT DIE CAST DESIGN)  
EVL SERIES (VANDAL RESISTANT DESIGN)  
EDRY SERIES (GASKETED DESIGN)

Maximum input:

LED Designs: (Transformer Series: 120V, 60Hz, 0.05A or 347V, 60Hz, 0.02A.

Capacitor series: 120 V, 60 Hz. 0.01 A or 277V or 347 V

B6L series: (Transformer Series: 120V, 60Hz, 0.1A or 347V, 60Hz, 0.04A.

Capacitor series: 120 V, 60 Hz. 0.02 A or 277V or 347 V

EAM SERIES or MICRA –MC SERIES ONLY:

Maximum Input: 120 V, 60 Hz. 0.02 A or 277V or 347 V

B6L series:

Maximum Input: 120 V, 60 Hz. 0.04 A or 277V or 347 V

LED exit sign, Surface mounted or Recessed type not suitable for thermal insulation contact:

### **LUXNET MODEL SERIES**

**EGLR- SERIES (EDGE LIT DESIGN)**

Maximum input: (Transformer Series: 120V, 60Hz, 0.05A or 347V, 60Hz, 0.02A.

Capacitor series: 120 V, 60 Hz. 0.01 A or 277V or 347 V

B6L series: (Transformer Series: 120V, 60Hz, 0.1A or 347V, 60Hz, 0.04A.

Capacitor series: 120 V, 60 Hz. 0.02 A or 277V or 347 V

**LUXNET MODEL SERIES ADDITIONAL NOMENCLATURE:**

Prefixes may include:

Change E to S to indicate Sortie legend

**Suffixes may include:**

/1 or/2 or/U indicating number of faces

W,C ,E OR U indicating mounting

-6,12,24 indicating supplementary DC input voltage.

-UDC indicating universal 6, 12 or 24 volt input.

-C860 indicating C860 compliant legend and visibility

-B6L indicating 6” side by side EXIT SORTIE legend

additional suffixes may indicate frame or trim color and finish

Edge lit signs: -R,-RW,-RMIR indicating legend color and background

-TL for 2.75” trim plate

### **Beghelli Model Series:**

1. Guida Series – designates GD for Canada, OL2, OL2-TL for US

2. Stella Series – designates SL for Canada, STX for US

Equivalent OEM Models to SL series:

1) SSXC860LRU-UDC-120347V

2) SSXC860LRU-UDC-120347V-MIRCOM

3) SSXC860LRU-UDC-BLK-120347V

4) SSXC860SPLRU-120347V

5) SXLU-120V

6) SXLU-UDC-120347V

7) SXSPLU-120347V

3. Quadra Series – designates QR for Canada, ATX for US
4. Micra Series – designates MC for Canada, MCA for US
5. Forma Series – designates FM for Canada
6. Ottica Series – designates OT for Canada, CYC for US
7. Forte Series – designates FR for Canada, EVR for US
8. Aqua Series – designates AQ for Canada, WLX for US
9. Protegga Series – designates PTG for Canada, PTG-1, PTG-2, PTG-3 for US
10. Verde Series - designates VE for Canada & US

Suffixes for all the above models may include the following:

Series; E=EXIT, S=SORTIES, B6L-ES=EXIT/SORTIE, B6L-SE=SORTIE/EXIT, B6L-EOS=EXIT OVER SORTIE  
RM = Running Man

Function: Blank or HT (AC only), UAC (Universal AC only), SP or SA (Self-powered), UDC (Universal AC, 6-24VDC), 2CK (Dual universal AC), 120ACDC (120 AC or 120 DC)

Light Source: L (LED), LR or R (Red), LG or G (Green), LW or W (White)

Style: Plus= (Trim Style) OV= (*Oval shaped face*)

Mounting: R, RC or CR (Recessed ceiling), RW or WR (Recessed wall), SC or CS (Surface ceiling), SW or WS (Surface wall), SE or ES (Surface end wall), W (Wall mount, no canopy), M (Universal mount wall, ceiling or end mount), E (End mount standard canopy & support bracket), WCS (Wall/ceiling surface), MM (Mullion).

Letter Color: ROC (Red on clear background - single face only), ROW (Red on white background), ROM (Red on mirror background), GOC (Green on clear background - single face only), GOW (Green on white background), GOM (Green on mirror background), C (Clear), W (White), M (Mirror)

Face #: 1 = Single, 2 = Double, 3= Three Sided U = Universal

Chevrons: 0 = No Chevrons, L = Left Chevron, R = Right Chevron, U = Field Adjustable, LR or D (Left or right chevron), SC or S (Specified chevrons), FC or F (Flush chevron), RC or R (Recessed chevron)

Pictogram: 0= No Directional Indicator, L= Left Indicator, R= Right Indicator, D= Down Indicator, U= Up Indicator, UR= 45 Degree Up Right Indicator, DR= 45 Degree Down Right Indicator, UL = 45 Degree Up Left Indicator, DL= 45 Degree Down Left Indicator

Housing: B = Black, W = White

Options: AT (Auto-test), CC (Custom colour - specify), BA (Brushed aluminum finish), PA (Polished aluminum finish), PB (Polished brass finish) AN (Anodized finish), BR (Bronze trim plate), PK12 or PK (12" pendant kit), SL (Self-luminous face), IF (Inverted face), WG (Wireguard), FAI (Fire alarm interface), FL (Visual alarm – specify voltage), BZ (Audible alarm – specify), WHT (White paint finish), 14G (14 gauge steel frame), FFP (Full steel stencil faceplate – field removable with this option), TD (Time Delay), HTR or IH (Internal heater), SMH (Side mount heads), TP (Tamper proof screws), LC (Line cord 120VAC), 60SP or 60SA (60 min. emergency), 90SP or 90SA (90 min. emergency), 120SP or 120SA (120 min. emergency), 240SP or 240SA (240 min. emergency), OV (Oval shaped face), CF (Curved Face), FF (*Flat Face*), SQ (*Square Corners*), RD (*Round Corners*)

EXAMPLE: GD-E-SP-L-RC-ROW-1-U

Description: Guida edge-lit sortie, 120/347VAC input, self-powered, red LED, recessed ceiling, red letters on white background, single face, universal chevrons.

## **APPLICABLE REQUIREMENTS**

- CSA C22.2 No. 250.0-08 - Luminaires
- CSA C22.2 No. 141-10 - Unit Equipment for Emergency Lighting

- CSA C860 -07 - Performance of internally lighted Exit signs
- UL Std No. 924 - Emergency Lighting and Power Equipment

### MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

#### For Emergency Unit

The following marking details with letters at least 3 mm high appear where readily visible after installation in a permanent manner on the product:

- CSA Mark, submittor's name or logo or file number "**LR 110823**";
- Model number, catalogue number or any other designation type;
- Complete electrical ratings that include the following items: Input voltage, frequency and amperes; Output voltage (i.e.: the nominal voltage of the battery) and Output wattage.
- Time Base for rating;
- The serial number of the unit;
- Complete installation instructions.
  - Note: Installation instructions shall show and state to make the supply connections inside the outlet box and not inside the unit.
- The following marking shall appear close to the CSA Mark: "**UNIT EQUIPMENT-CERTIFIED TO CSA STANDARD C22.2 NO. 141, AND RECOGNIZED BY SECTION 46, CANADIAN ELECTRICAL CODE, PART 1 and**
- **APPAREIL INTEGRAL –CERTIFIE SELON LA NORME C22.2 NO. 141 ET RECONNU PAR LA SECTION 46, DU CODE CANADIEN DE L'ELECTRICITE, PARTIE 1.**
- *Optional, The CSA Energy Efficiency Verification Mark shall appear on the product.*

#### Additional Markings

- Unit equipment is provided with a list of the lamps that are suitable for use with it, including the catalogue numbers or similar identifying designation and a watts rating.
- A statement as follows or the equivalent:  
"The lamps listed herein when used according to the instructions with this unit are in accordance with the requirements of CSA Standard C22.2, No. 141 - Unit Equipment for Emergency Lighting".
- The month and year of manufacture shall be marked in a location accessible without the use of tools. A date code may be used.
- On lamp heads, the lamp replacement caution shall indicate the lamp designation, nominal voltage and wattage.
- Battery leads are identified with the indication “ - ” and “ + ”.

#### Adjacent to the Battery

- **"REPLACE BATTERY EVERY \_\_\_\_\_ YEARS, COMMENCING \_\_\_\_\_"**

**Note:** The number of years to be inserted depends on the design and life expectancy and the commencement date is to be inserted with the date of manufacture of the battery, plus the design life expectancy.

- The identification of the replacement battery type;

#### For Non-Emergency Unit

The following marking details with letters at least 3 mm high appear where readily visible after installation in a permanent manner on the product:

- CSA Mark, submittor's name or logo or file number "**LR 110823**";
- Model number, catalogue number or any other designation type;
- The manufacturing date code (at least month and year);
- ***The CSA Energy Efficiency Verification Mark shall appear on the product.***

#### ALTERATIONS

1. Markings are as noted above.
2. DC Option Leads are Identified with the following lead colors
  - 6 VDC + (Yellow)
  - 12 VDC + (Blue)
  - 24 VDC + (Red)
  - Negative - (Purple)

***Universal DC Option Leads colours are as follows:***

***6 to 24 VDC + (Yellow)***  
***Negative - (Purple)***

3. Any wiring that is exposed during lamp replacement of components is rated for 600V, routed close to a structural part of the luminaire, not containing any splices and if exposed for more than 4 inches are enclosed in a 0.25 mm thick fiberglass sleeving.
4. The 120V wiring is routed away from the Printed Circuit Board. The wiring is routed between the transformer and the enclosure wall on the opposite side of the PCB.

#### FACTORY TESTS

##### Dielectric Voltage-Withstand Test:

Each unit at the conclusion of manufacture and before shipment, shall withstand for one min, without breakdown, the application of a potential of 1000Vac plus twice the rated input voltage, applied between live parts and non-current-carrying metal parts which are exposed or likely to become grounded. As an alternative, a potential 20 percent higher may be applied for one sec.

**WARNING:** The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

#### SPECIAL INSTRUCTIONS FOR FIELD SERVICES

Component descriptions marked with either the “(INT)” or “(INT\*)” identifiers may be substituted with other components providing the requirements specified under the notes in the “Description” are complied with.

### **COMPONENT SPECIAL PICKUP**

Component descriptions marked with the identifier “(CT)” are subject to annual pickup and Conformity Testing.

### **DESCRIPTION**

Notes:

1. Component Substitution

- a) Critical components (those identified by mfr name, cat no), which are NOT identified with either “INT” or “INT\*” are not eligible for substitution without evaluation and report updating.
- b) The term “INT” means a “Certified” and/or “Listed” (or a “Recognized” and/or “Accepted”) component may be replaced by one “Certified” and/or “Listed” by an organization (accredited by OSHA/SCC), for the same application; providing the applicable country identifiers are included and requirements in item “d” below are complied with.
- c) The term “INT\*” means a “Recognized” and/or “Accepted” component may be replaced by one “Recognized” and/or “Accepted” by an organization (accredited by OSHA/SCC), for the same application, providing the applicable country identifiers are included, the component is **also** CSA Certified, the requirements in item “d” below are complied with and any “conditions of suitability” for the component (as recorded in this descriptive report) are complied with.
- d) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.
- e) Substitution of a “Certified” and/or “Listed” component with a component that is “Recognized” or “Accepted” is not permitted without evaluation and report updating.

### **Project 2717388: Addition of Verde Series in Part L.**

Project 2580793:

Addition of options to the Beghelli Model Series and identified as MM (Mullion) mount, CF (Curved Face), FF (Flat Face), SQ (Square Corners), RD (Round Corners).

Project 2494406:

Evaluation of currently Certified Emergency Exit Sign, series Luxnet or Beghelli with Lens material change to Polycarbonate “Makrolon GP”0.060” to comply with Std. 141-10 and identified by suffixes “RM”.

General: The following is a description of a representative sample submitted to CSA.

Notes:

- a) "Following the component manufacturer/submittor identification, "INT" indicates an interchangeable part. Suitable alternative components having equivalent characteristics may be used if an item is identified as INT and provided the use of the alternate component does not adversely affect the safety of the product, ie. reduction of spacings due to physical size, etc.
- b) All measures are approximate and are in mm.

Note : Battery discharge data to CSA standard C22.2 # 141 is common for Part A through J.

And is shown on attachment A-23 and A26

- The Luxnet & Beghelli models are identical equivalents except for a change in trade name and model number

**General:**

The Luxnet & Beghelli models are identical equivalents except for a change in trade name and model number:

Guida Series – same as LUXNET EG Series except for name designation

Stella Series – same as LUXNET ES Series except for name designation

Quadra Series – same as LUXNET EAL Series except for name designation

Micra Series – same as LUXNET EAML Series except for name designation

Forma Series – same as LUXNET EDL Series except for name designation

Ottica Series – same as LUXNET EGA Series except for name designation

Forte Series – same as LUXNET EVL Series except for name designation

Aqua Series – same as LUXNET EDRY Series except for name designation

**Protegga Series – does not have an alternate series designation**

**Verde Series – does not have an alternate series designation**

**PROJECT 2174722**

c) The following new LED modules are added into all existing sign enclosures:

1. Self-powered LED Board –

a) 11” Order abbrev 451000100 or 16” Order abbrev. 451000200, colour red, green, or white, AC Input: 9VAC through a transformer with Primary 120/277/347VAC, 50/60Hz, 4W, Battery Input and Back-up Time: Ni-Cd 4.8V, 400mAh(90 mins), 600mAh(120 mins), 800mAh(240 mins) ( Cannot be used without a test for compliance with the charge and discharge cycles etc. of CSA C22.2 No 141 or UL 924 and are not being used at this time)

b) 11” Order abbrev 451000500 or 16” Order abbrev. 451000600, colour red, green, or white, AC Input: 2 versions, 120/277 or 120/347 VAC using on-board capacitors, 50/60Hz, 4W, Battery Input and Back-up Time: Ni-Cd 4.8V, 400mAh(90 mins), 600mAh(120 mins), 800mAh(240 mins)

c) 11” Order abbrev Order abbrev 451000150 or 16” Order abbrev. 451000250, same features as b) above except AC, battery, and test switch connectors are added in the middle of the board.

PROJECT 2286813 Added the following LED Board

d) 11” Order abbrev 451000450, auto-test feature is added to test the battery monthly, colour red, green, or white, AC Input: 2 versions, 120/277 or 120/347 VAC using on-board capacitors, 50/60Hz, 2W, Battery Input and Back-up Time: Ni-Cd 4.8V, 400mAh(120 mins), 800mAh(240 mins)

2. Universal AC/DC(UDC) LED Board –

a) 11” Order abbrev 451000110 or 16” Order abbrev. 451000210, colour red, green, or white, AC Input: Two-wire 105-360VAC, 50/60Hz, 2W, DC Input: Two-wire 6-24VDC. If both AC and DC voltages are present, only AC voltage will be used.

b) 11” Order abbrev 451000510 or 16” Order abbrev. 451000610, colour red, green, or white, AC Input: 2 versions, Three-wire 120/277 or 120/347 VAC, 50/60Hz, 2W, DC Input: Two-wire 6-24VDC. If both AC and DC voltages are present, only AC voltage will be used.

c) 11” Order abbrev 451000160 or 16” Order abbrev. 451000260, same features as b) above except AC and DC connectors are added in the middle of the board.

PROJECT 2286813 Added the following LED Board



d) 11" Order abbrev 451000440, same features as 451000510 above except DC input circuitry is modified to accept 120VDC only

3. Universal AC(UAC) LED Board –

a) 11" Order abbrev 451000120 or 16" Order abbrev. 451000220, colour red, green, or white, AC Input: Two-wire 105-360VAC, 50/60Hz, 2W. Same design and construction as the UDC board, but the electronic components on DC circuitry section are not populated.

b) 11" Order abbrev 451000520 or 16" Order abbrev. 451000620, colour red, green, or white, AC Input: 2 versions, Three-wire 120/277 or 120/347 VAC, 50/60Hz, 2W.

c) 11" Order abbrev 451000170 or 16" Order abbrev. 451000270, same features as b) above except AC connector is added in the middle of the board.

4. Dual AC LED Board – 11" Order abbrev 451000140, colour red, green, or white, Primary AC Input: Two-wire 105-360VAC, 50/60Hz, 2W, Back-up AC Input: Two-wire 105-360VAC, 50/60Hz, 2W. Using the same AC circuit design and construction as the UDC board on both primary and back-up AC inputs, but the DC circuitry section is removed.

5. 120VAC or 120VDC LED Board – 11" Order abbrev 451000130 or 16" Order abbrev. 451000230, colour red, green, or white, Input Voltage: 120VAC or 120VDC, 4W.

6. LED Extension Board – 10" Order abbrev 451000300 or 16" Order abbrev. 451000400, colour red, green, or white, 1W. The 10" board will only be connected to the 16" version of Self-powered, UDC, and UAC LED boards. Self-powered and extension boards back-up time: 400mAh (30 mins), 600mAh (90 mins), 800mAh(120 mins). The 16" extension board is used on battery charger board only.

All LED modules were previously approved in CSA report #2099594. Both charge/discharge test and transformer test were performed and passed in the report. The luminance measurements tests of each representative enclosure model are attached at the end of this report.

PART-A - Luxnet ES-L-SP Series (previously CLDE Series)  
Beghelli Stella SL-SP Series

See attached photos P-1 and P-2. & P-21

Enclosure:

Made of sheet steel, 0.88 mm thick, welded construction. Overall dimensions are 313 x 193 x 58 mm. The enclosure is painted to protect steel from corrosion. One knockout 23 mm dia is provided on back of unit, three (3) 20 mm dia are provided on top and one (1) 20 mm dia is provided on side.

Alternate construction: For Stella-S-C860 Version (SORTIE) Length is 470 mm.

For –B6L (EXIT-SORTIE) Length is 712 mm.

2. Enclosure Cover:

Same material and thickness as item 1 above. Slides into channels on each side of unit and fixed with screw on bottom. The letters EXIT OR SORTIE are cut into the metal as shown on photo P-1.

3. Enclosure Back:

Same as item 2 above with or without the letters EXIT. When the letters are not provided, the Back is provided with knock out and mounting holes for mounting over an outlet box.

4. Lens:

Material: Fiberglass Series 400 Type 1  
Thickness: 0.040 in  
Mounting: Slide in and held by enclosure cover.

For Running Man "RM"  
Polycarbonate "Makrolon GP" or equivalent  
0.060"

5. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral	White
	Ground	Green
DC Circuit	Battery (-)	Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)
	Battery (+)	Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

6. Transformer:

Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mounted on enclosure wall by sliding one leg into wall opening and other fixed by lockwasher and nut. Or mount 2 legs with lockwasher & nut

Note: Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

-B6L version uses 2 sets of transformers and circuit boards.

7. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring over the hole in the enclosure.

8. Printed Circuit Board (for low voltage):

UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand-offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the metal housing.

9. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.

See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

(a) Electrolytic Capacitors:

C1: 10uF, 16V, 85°C max

C2: 0.47uF, 50V, 85°C max.

(b) Rectifier Diodes: D1 to D4, 1N4002

(c) Transistor: Q1 to Q4, 2N4401

(d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.

(e) Connector: (INT) CSA Certified, Molex, 22-01-3027. For battery terminal.

10. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4-Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on enclosure wall by double sided tape

11. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

12. Mounting Canopy: (Optional)

Consist of the following:

Cross-Bar: Made of galvanized steel, 1.35 mm thick minimum.

Canopy: Made of plastic, The Geon Company, M3800, 2.0 mm thick, rated 5VA, with mounting holes for cross bar installation. Overall dimensions are 115 x 145 x 13 mm.

**PART-B -Luxnet EG-SP-L Series or**  
**Beghelli Guida GD-SP Series**  
**(Originally Series C EGL-BP)**

See attached photos P-3 to P-5. & P-24

See attachment A-16 for luminance data to C860

1. Enclosure:

Made of sheet steel, 1.02 mm thick, welded construction. Overall dimensions are 358 x 117 x 113 mm. The enclosure is painted to protect steel from corrosion. One knockout 23 mm dia is provided on side of unit, one (1) 23 mm dia is provided on top. The enclosure is provided with two brackets that have an opening of 33 x 16 mm to mount steel spring clips of luminaire.

Note Alternate construction for -TL (Thin Line) Option

Back box is 420mm L x 49mm W x 95 mm H

-S-C860 (SORTIE) version length is 520 mm in length

-B6L -C860 (EXIT SORTIE) version length is 890 mm

Wall mounting option, identified as Mullion mount (MM). Supply opening and two mounting keyholes are provided on the enclosure side. Optional Curved Face (CF), FF (Flat Face), SQ (Square Corners), RD (Round Corners) may be used.

2. Enclosure Cover:

Same material and thickness as item 1 above. Dimensions are 127 x 382 mm. Mounted on enclosure by two springs clips made of 1.70 mm dia steel wire. Also provided with two brackets made of the same material used to mount components.

Note Alternate construction for -TL (Thin Line) Option

Cover ( Trim Plate) is 445mm L x 70mm W

-S-C860 (SORTIE) version length is 546 mm in length

-B6L -C860 (EXIT SORTIE) version length is 914 mm

3. Internal Wiring: Same as item 5 described above in Part-A.

4. Transformer:

Accepted as component.

: Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut on internal saddle plate of sign.

Note: -B6L version has 2 secs of transformers and circuit boards.

5. Test Switch: Same as item 7 described above in Part-A except for mounting as described below.  
Mounting: Mounted by threaded plastic ring over the hole in the enclosure. Provided with certified leads rated for 300V min.
6. Printed Circuit Board (for low voltage): Same as item 8 described above in Part-A.
7. Main Electric/Electronic Devices: Same as item 9 described above in Part-A except that AC pilot light is mounted on an opening in the Enclosure Cover beside Test Switch with certified leads rated for 300V min that are soldered to the PCB.
8. Battery:  
Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report).  
Ratings: 4.8V, 600mah  
Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.  
Mounting: Held on internal bracket by double sided tape
9. Grounding:  
A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.
10. Lens:  
Material: Clear acrylic  
Thickness: 1/8 in or 1/4 in  
Letters: The letters EXIT appear on the lens.  
Mounting: By two bolts and nuts on a designated slot in the Enclosure Cover.

**PART-C**  
**Beghelli Forma –FM-SP Series**  
**(Originally Series CLDC-BP)**

See attached photos P-6 to P-8 &P12 &P13.

1. Enclosure:  
Made of painted die-cast aluminum, approximately 3.0 mm thick. Overall dimensions are 345 x 210 x 50 mm. Two knockouts 18 mm dia are provided on each side, on top and on the back of unit.
2. Enclosure Cover:  
Same material and thickness as item 1 above. Dimensions are 345 x 210 mm. Mounted on enclosure by two hinges on bottom and snap fitted by two clips on top.
3. Internal Wiring: Same as item 5 described above in Part-A.
4. Transformer: Same as item 6 described above in Part-A.  
Mounting: Secured by two blunt end screws on stainless steel bracket approximately 65 x 48 mm which is in turn screwed on Enclosure.
5. Test Switch: Same as item 7 described above in Part-A except for mounting as described below.  
Mounting: Mounted by threaded plastic ring in a hole on the bottom portion of enclosure. Provided with certified leads rated for 300V min that are soldered to the PCB.
6. Printed Circuit Board (for low voltage): Same as item 8 described above in Part-A.  
Mounting: Mounted on metallic bracket by three (3) nylon locking supports tabs on metallic bracket which is screwed to the enclosure by two screws.  
Insulation: The PCB is enclosed in Fastex, product designation Statex, polypropylene sheet, 0.25 mm thick, same dimensions as PCB with sidings at least 1/8 in thick covering all sides to insulate the live parts from the mounting bracket.
7. Main Electric/Electronic Devices: Same as item 9 described above in Part-A except that  AC pilot light  is mounted on an opening in the bottom portion of enclosure beside Test Switch with certified leads rated for 300V min that are soldered to the PCB.
8. Battery: Same as item 10 described above in Part-A above except for mounting.  
Mounting: Held on Enclosure side by two sided adhesive tape.
9. Grounding:  
A green conductor, TEW type, 18AWG is terminated by a certified crimp ring connector that is screwed to the unit enclosure with a star washer that bites into the paint to assure a good contact metal to metal.
10. Lens:  
Material: Fiberglass Series 400 Type 1  
Thickness: 0.040 in  
Mounting: Held by metal clip on the inside of enclosure cover.
11. Mounting Hardware: (Optional) Only provided for ceiling mounted application or wall mounted sideways. Consists of the following items:
  - a) Cross Bar:

Made of stainless steel, 1.35 mm thick minimum. To be mounted with the two screws of outlet box. Made of two pieces mounted together in the shape of an X for universal mounting.

b) Canopy:

Made of die-cast aluminum, 1.83 mm thick, 120 x 120 x 20 mm overall dimensions. Mounted to Cross Bar by two blunt end screws.

c) Threaded Nipple:

A threaded nipple 12 mm ID is also provided for the mounting of the enclosure to the canopy.

**PART D**  
**LUXNET EAL-SP Series**  
**Or BEGHELLI QUADRA –QR-SP Series**

See attached photo P10

See attached luminance data for CSA C860 for Exit only Appendix A17

Appendix A25 for C860 data for B6L EXIT SORTIE and SORTIE EXIT option

1. Exit Sign Enclosure:

Made of extruded aluminum sheet, frame construction has dual internal channels, 1.2 mm thick, welded construction. Overall dimensions are 330mm L x 191mm H x 53 mm. D The enclosure is painted. One (1) 20 mm dia KO is provided on top and one (1) 20 mm dia KO is provided on side.

Alternate construction for –B6L option has dimensions of 724 mm L x 191 mm H x 53mm D

2. Exit Sign Enclosure Cover:

Same material and thickness as above. Slides into channels on each side of unit. The letters “EXIT” are cut into the metal. Knock out chevrons complying with dimensions of CSA C860 are provided.

Alternate construction of –B6L option: Letters “EXIT” & “SORTIE” are cut into the metal.

Knock out chevrons complying with dimensions of CSA C860 are provided.

3. Exit Sign Enclosure Back:

Same as item 2 above with or without the letters “EXIT”. When the letters are not provided, the Back is provided with knock out and mounting holes for mounting over an outlet box. The back is attached to the frame by means of a blunt end screw.

Alternate construction of –B6L option: Letters “EXIT” & “SORTIE” are cut into the metal. (For double face signs only)

4. Lens:

Material: Fiberglass Series 400 Type 1

Thickness: 0.040 in

Mounting: Slide in and held by enclosure cover.

5. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange

	120V	Black
	Neutral	White
	Ground	Green
DC Circuit	Battery (-)	Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)
	Battery (+)	Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

6 Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut into bracket fastened to internal channel.

**Note:** Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

7. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring over the hole in the enclosure.

8. Printed Circuit Board (for low voltage):

UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the metal housing.



9. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.  
See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

(a) Electrolytic Capacitors:

C1: 10uF, 16V, 85°C max  
C2: 0.47uF, 50V, 85°C max.

(b) Rectifier Diodes: D1 to D4, 1N4002

(c) Transistor: Q1 to Q4, 2N4401

(d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.

(e) Connector: (INT) CSA Certified, Molex, 22-01-3027, for battery terminal.

10. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Model: PS-4.8600

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on enclosure wall by double sided tape

11. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

12. Mounting Canopy: (Optional)

Consist of the following:

Cross-Bar: Made of galvanized steel, 1.35 mm thick minimum.

Canopy: Made of plastic, The Geon Company, M3800, 2.0 mm thick, rated 5VA, with mounting holes for cross bar installation. Overall dimensions are 115 x 145 x 13 mm.

**PART E-**  
**LUXNET EGA-SP Series or**  
**BEGHELLI OTTICA TO-SP Series**  
**Or BEGHELLI CYC-SA Series ( US Version)**

See attached photos P-26,P-28,P-29 & P-31

See attachment A-16 for luminance data to CSA C860

See attachment A-20 for luminance data to UL924

1. Enclosure:

Made of extruded aluminum 2.0 mm thick in the shape of a round barrel that holds the printed circuit board with the LED's and the lens. (See P-28) . Overall dimensions are 51 mm in diameter with a length of 318mm ( EXIT version) or 458mm ( SORTIE-C860 Version) or 724 mm (B6L –C860 version). The enclosure is painted or brushed or anodized.

2. Enclosure End Caps:

Same material and thickness as item 1 above. Dimensions are 51 mm in diameter. Mounted to end of enclosure with studs that screw into springs clips that are recessed into the end of the cylindrical barrel. Alternate construction is to have a screw pass through the center of the end cap and fasten into the spring clip recessed in the end of the barrel.

3. Internal Wiring: Same as item 5 described above in Part-A.

4. Transformer:

Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut on internal bracket in Canopy.

5. Test Switch: Same as item 7 described above in Part-A except for mounting as described below.

Mounting: Mounted by threaded plastic ring over the hole in the canopy. Provided with certified leads rated for 300V min.

6. Printed Circuit Board (for low voltage): Same as item 8 described above in Part-A.
7. Main Electric/Electronic Devices: Same as item 9 described above in Part-A except that AC pilot light is mounted on an opening in the canopy beside Test Switch with certified leads rated for 300V min that are soldered to the PCB.
8. Battery:
  - Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)
  - Ratings: 4.8V, 600mah
  - Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.
  - Mounting: Held on internal bracket by double sided tape
9. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.
10. Lens:
  - Material: Clear acrylic
  - Thickness: 1/8 in or 1/4 in
  
  - PROJECT 2286813 Added the optional Oval shape
  
  - Shape: the shape may be Rectangle or Oval refer to photo below for picture
  
  - Letters: The letters EXIT or SORTIE or EXIT SORTIE appear on the lens.
  - Mounting: By two bolts and nuts on a designated slot in the Enclosure Cover.
11. Canopy:

The canopy is die cast aluminum 1.9 mm thick. The canopy has a concave shape to Match with the housing barrel. It is fastened to the electrical box by two screws which Attach to a universal mounting plate.

The canopy is 171 mm L x 113 mm W x 49 mm H and contains holes for test switch and pilot light. There is also an end mount canopy available (Photo P-29)



According to C22.2 No.141-02, the oval shaped face has passed Luminance Measurements Tests under both non-energized and energized states. The results are attached in Attachment 6

**PART F**

LUXNET EAM-L –SP Series  
Or BEGHELLI MICRA MC-SP Series

See attached photo P14  
Appendix A22 for C860 luminance data

1. Exit Sign Enclosure:

Made of extruded aluminum 3.0 mm thick, frame construction has dual internal channels. There is a wrap around frame ( see photo P15 for frame construction). The ends of the extrusion are open and are covered by end plates which are fastened by screws into the end of the frame.

The letters “EXIT” are cut into the metal. Chevrons complying with dimensions of CSA C860 are provided. Concealment methods for the chevrons are provided.

Alternate construction of –S-C860 version: Letters “ SORTIE” are cut into the metal.

Alternate construction of –B6L option: Letters “EXIT” & “SORTIE” are cut into the metal.

Overall dimensions are 32 mm D x 230 mm H x 305 mm. L.

Alternate construction: Length is 445 mm for –S-C860 (SORTIE) Version.

Length is 712 mm for –B6L (EXIT SORTIE) Version.

The enclosure is painted or brushed or anodized.

One (1) 20 mm dia hole is provided on top when the ceiling mount is ordered.

One (1) 20 mm dia hole is provided on end plate for end mount version only.

2. Lens:

Material: Fiberglass Series 400 Type 1

Thickness: 0.040 in

Mounting: Slide in and held by enclosure frame.

3. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral White	
	Ground Green	
DC Circuit	Battery (-)	Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)
	Battery (+)	Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

4. Transformer:

Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut into bracket fastened to canopy.

Note: 2 Transformers and 2 circuit boards are used in unit. Each version has boards mounted in both lower and upper channels of frame.

Note: Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

5. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring over the hole in the canopy.

6. Printed Circuit Board (for low voltage):

UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the metal housing.

7. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.

See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

- (a) Electrolytic Capacitors:

C1: 10uF, 16V, 85°C max

C2: 0.47uF, 50V, 85°C max.

- (b) Rectifier Diodes: D1 to D4, 1N4002

- (c) Transistor: Q1 to Q4, 2N4401

- (d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.
- (e) Connector: (INT) CSA Certified, Molex, 22-01-3027. For battery terminal.

8. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on canopy interior wall by double sided tape

9. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

10. Mounting Canopy: (Optional)

Consist of the following:

Cross-Bar: Made of galvanized steel, 1.35 mm thick minimum.

Canopy: Made of sheet steel 1.4 mm. Thick with mounting holes for cross bar installation.

Overall dimensions are 171 mm x 115 mm x 50 mm.

**PART G**  
**LUXNET EVL-SP Series**  
**Or BEGHELLI FORTE –FR-SP Series**

Photos 19 & 20

Appendix A18 for C860 Luminance data

- 1. The housing is minimum 16 gauge steel . The frame for the legend is minimum 16 gauge steel. The legend is as below but the opaque stencil is metalized film ( white). The lens is protected by a 3 mm polycarbonate clear lens which is secured between the housing and legend frame. Dimensions are :311 mm L x 216 mm H x 77 mm D.
- 2. Lens:  
Material: Fiberglass Series 400 Type 1  
Thickness: 0.040 in  
Mounting: Held by enclosure frame.
- 3. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral	White
	Ground	Green

DC Circuit      Battery (-)      Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)  
                    Battery (+)      Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

4. Transformer:

Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut onto studs located within housing.

Note: Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

5. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring through hole in bottom of enclosure.

6. Printed Circuit Board (for low voltage):

UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the metal housing.

7. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.

See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

- (a) Electrolytic Capacitors:  
C1: 10uF, 16V, 85°C max.  
C2: 0.47uF, 50V, 85°C max.
- (b) Rectifier Diodes: D1 to D4, 1N4002
- (c) Transistor: Q1 to Q4, 2N4401
- (d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.
- (e) Connector: (INT) CSA Certified, Molex, 22-01-3027. For battery terminal.

8. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on sign interior wall by double sided tape

9. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

10. Mounting Canopy: (Optional)

Consist of the following:

Cross-Bar: Made of galvanized steel, 1.35 mm thick minimum.

Canopy: Made of sheet steel 1.4 mm. Thick with mounting holes for cross bar installation.

Overall dimensions are 171 mm x 115 mm x 50 mm.

Optional canopy heavy duty model made of 16 gauge sheet steel .Dimensions are 311 mm L x 125 mm W

**PART H**  
**LUXNET EDRY-SP Series**  
**Or BEGHELLI AQUA-AQ-SP Series**

Photos 15A & 16

Appendix A24 for C860 luminance data

- 1. Cabinet: This is an EEMAC style 4 cabinet. The enclosure is fiberglass made by Hoffman catalog #Q-303013PC1CC with a matching clear cover. The cover is reverse silk screened by Beghelli to show a C860 compliant EXIT legend. The red lens material is inside the cover and is as shown below. Dimensions: 305 mm L x 305 mm H x 127 mm D
- 2. Lens:  
Material: Fiberglass Series 400 Type 1  
Thickness: 0.040 in  
Mounting: Slide in and held by enclosure frame.



3. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral	White
	Ground	Green

DC Circuit      Battery (-)      Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)

Battery (+)      Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

4. Transformer:

Transformer: Accepted as component.

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Mount 2 legs with lockwasher & nut into bolts on internal metal plate.

Note: 2 Transformers and 2 circuit boards are used in unit. Each version has boards mounted in both lower and upper channels of frame.

Note: Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

5. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring over the hole in the canopy.

6. Printed Circuit Board (for low voltage): UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the metal housing.

7. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.

See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

(a) Electrolytic Capacitors:

C1: 10uF, 16V, 85°C max

C2: 0.47uF, 50V, 85°C max.

(b) Rectifier Diodes: D1 to D4, 1N4002

(c) Transistor: Q1 to Q4, 2N4401

(d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.

(e) Connector: (INT) CSA Certified, Molex, 22-01-3027. For battery terminal.

8. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on metal plate in interior by double sided tape

9. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

**PART J**

**LUXNET EP-X-SP Series**

**Or BEGHELLI ESCO EC-SP Series**

See Photo P 17

**See Attachment A-19 for luminance data to CSA C860**

1. Cabinet:

Polycarbonate Enclosure UL approved under file E213949.

Dimensions: 310 mm L x 190 mm H x 45 mm D

2. Lens:

Material: Fiberglass Series 400 Type 1

Thickness: 0.040 in

Mounting: Slide in and held by enclosure frame.

3. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.

Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral	White
	Ground	Green
DC Circuit	Battery (-)	Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)
	Battery (+)	Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.

4. Transformer:

Transformer: Accepted as component

Manufacturer: Tai Chan Electronic or Polymax International Ltd.

Polymax transformers tested by CSA for component approval

Model: 40-105 CSA (40-105ETL)

Primary: 120V/347V, 60Hz, 7.2VA (120V/277V)

Secondary: 12V with center tap.

Leads: CSA Certified, 18AWG, TEW type, rated 600V, 105°C.

Secondary Connector: CSA Certified, Manufacturer: Molex, Cat. No. 03-06-1032

Core Dimensions: laminated steel: 41 mm x 34 mm x 14.5 mm.

Overall Dimensions: 1.72 x 1.45 x 1.43 inch.

Windings Details:

White to Black: 1600 turns of 36AWG, 180 ohms

Pin 1 (Red) to Pin 3 (Red): 200 turns with Center tap of 26AWG, 2.2 ohms

Insulation Details:

Primary to Secondary: Bobbin

Crossover Insulation: A.C.T. (0.18 mm X2)

Primary, Secondary to Core: Polyester film tape 2 turns, Press Board (0.13 mm) 1 turn.

Bobbin Information:

GE Plastics Japan Ltd. (UL E45587), PBT 420-SEO or EVER#-02-41140B1

Length: 30 mm.

Width: 28 mm.

Height: 22.5 mm.

Thickness: 0.8 mm.

Mounting: Held in place with snap on clips within formed area inside enclosure.

Note: Unused input leads of the transformer are protected by a certified crimp cap connector suitable for at least 60°C.

5. Test Switch: Accepted as component. UL recognized (E121922)

Manufacturer: Judco Manufacturing Inc.

Model: J-188

Ratings: 6A, 125V

Mounting: Soldered to the PC Board and held by threaded plastic ring over the hole in the canopy.

6. Printed Circuit Board (for low voltage):

UL recognized component (E74082). Accepted as component

Manufacturer: Ker-Shin Co. Ltd.

Alternate: General Atronics Circuit board Ltd. UL recognized component (E129764A)

Model: 10-102

Flammability Rating: UL 94V-0

Material: CEM-1

Thickness: 1.6 mm

Overall Dimensions: 28 x 300 mm

Mounting: Mounted with nylon locking supports stand offs on bottom of enclosure. Tabs are fixed with proper adhesive and with the switch threaded ring.

This arrangement provides proper separation of live components of the circuit board from the polycarbonate housing.

7. Main Electric/Electronic Devices:

Note: All the devices are soldered to the PCB, unless otherwise specified.

See attached Printed Circuit Board layout and Electric Diagram of the Circuit (Attachments).

(a) Electrolytic Capacitors:

C1: 10uF, 16V, 85°C max

C2: 0.47uF, 50V, 85°C max.

(b) Rectifier Diodes: D1 to D4, 1N4002

(c) Transistor: Q1 to Q4, 2N4401

(d) Leads: CSA Certified, TEW type, 18AWG, 105°C, terminated by a certified polarized connector, manufactured by Molex or equivalent, Cat. No. 03-06-1032. Connected to Secondary side of transformer.

(e) Connector: (INT) CSA Certified, Molex, 22-01-3027. For battery terminal.

8. Battery:

Manufacturer: Power Sonic, Model PS-4.8600 or Manufacturer Dixit ( Composed of 4 Q600-AA manufactured by Qualitech International connected in series, no other substitution permitted without retest and update to report)

Ratings: 4.8V, 600mah

Connector: (INT) CSA Certified, Manufactured by Molex, Cat. No. 22-01-3027. Connected to male connector on board.

Mounting: Held on canopy interior wall by double sided tape

9. Grounding:

A green conductor, TEW type, 18AWG is terminated by a crimp ring connector that is riveted to the unit enclosure with a starwasher that bites into the paint to assure a good contact metal to metal.

10. Mounting Canopy: (Optional)

Consist of the following:

Cross-Bar: Made of galvanized steel, 1.35 mm thick minimum.

Canopy: : Made of plastic, The Geon Company, M3800, 2.0 mm thick, rated 5VA, with mounting holes for cross bar installation. Overall dimensions are 115 x 145 x 16 mm.

The canopy is equipped with a “snap” type connection device to snap into an appropriate hole on the top or end of the exit frame.

**PART K**

**BEGHELLI Protegga PTG Series**

Appendix A18 for C860 Luminance data



*Model #PTG-B6L-EOS Shown →*

1. Cabinet: The housing is a, minimum 14 gauge aluminum. The frame for the legend is minimum 14 gauge aluminum. The legend is as below but the opaque stencil is metalized film (white). The lens is a 4.5 mm polycarbonate white lens which is secured between the housing and legend frame. Dimensions: 426 mm(L) x 426 mm(H) x 66 mm(D) (PTG-B6L-EOS), 324 mm(L) x 223 mm(H) x 66 mm(D) (PTG-E), 483 mm(L) x 223 mm(H) x 66 mm(D) (PTG-S), 743 mm(L) x 223 mm(H) x 66 mm(D) (PTG-B6L-ES). This enclosure has been custom tested for NEMA/EEMAC 4 and 4X under a separate project. Also refer to ATT 5 for pictorial views
2. Lens:  
Material: Polycarbonate  
Thickness: 4.5 mm  
Mounting: Held by enclosure frame.
3. Internal Wiring: (INT) CSA Certified, 18AWG, TEW Type, 105°C.  
  
Note: Different colours are used to indicate the normal operation (high voltage) circuit and the low voltage secondary circuit as follows:  
  

AC Circuit	347 V	Red
	277V	Orange
	120V	Black
	Neutral	White
	Ground	Green
DC Circuit	Battery (-)	Black (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C)
	Battery (+)	Red (CSA Certified, 20AWG, TR-64 Type, 300V, 90°C) 6.
4. Mounting Canopy: (Optional)  
Consist of the following:  
Canopy: Made of sheet aluminum, 14 gauge thick.  
Overall dimensions: 171 mm x 115 mm x 50 mm.

Interior electrical components are the New LED Circuit boards as listed at the beginning of the report added under Project 2174722 and the full report of the boards may be found in Certificate 1977625, Project 2174463.

**PART-L -Verde VE Series**

**Similar to the Stella series in Part A except provided with a plastic enclosure as noted below:**

1. Enclosure: INT, Chi Mei Corp, ABS Plastic Resin, 5VA flame rating, HWI 2, HAI 0, RTI 80C, 2.5 mm thick, plastic injection moulded, 5 piece construction, consisting of canopy, plug cover plate, back plate, face plate and frame. Overall dimensions are 313 x 208 x 75 mm, snap fit together construction. See Attachment 10 for photographs and Illustrations.

PART-AA -Luxnet ESL Series  
Or Beghelli Stella SL Series  
( Previously CLDE Series)

Photo P-21

See Attachment A15 for CSA C860 luminance data.

General: The unit is similar to the one described in Part-A above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction ( Internal photo P-22)**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet -Blue
24 V	Violet -Red

**PART-BB -LUXNET EG Series**  
**OR BEGHELLI GUIDA GD-L Series**  
**( Formerly CEGL Series)**

Photo P-24 Internal construction P-25

See Attachment A16 for CSA luminance data.

General: The unit is similar to the one described in Part-B above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet -Blue
24 V	Violet -Red

**PART-CC -**  
**LUXNET EDL Series**  
**Or BEGHELLI GUIDA GD Series**  
**(Formerly Series CLDC)**

Photo P-12

General: The unit is similar to the one described in Part-C above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6v dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction ( Internal photo P-22)**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14.

The part number is :

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet -Blue
24 V	Violet -Red

**PART DD**  
**LUXNET EAL Series**  
**Or BEGHELLI QUADRA QR-L Series**

**Photo P-10 &P-11**

**See attachment A-17 for CSA C860 luminance data.**

**Appendix A25 for C860 data for B6L EXIT SORTIE and SORTIE EXIT option**

General: The unit is similar to the one described in Part-D above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14.

The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet –Red

**PART EE**

**LUXNET EGA-SPL Series**

**Or BEGHELLI OTTICA OT-L Series**

**Or BEGHELLI CYC-HT Series (US Version)**

**Photo P-26 &P-28**

**See Attachment A-16 for CSA C860 luminance data**

**See attachment A-20 for UL924 luminance data.**

General: The unit is similar to the one described in Part-E above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction Photos P-27 & P-30**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14.

The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)



Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet -Red

**PART FF**

**LUXNET EAM-L SERIES**

**Or BEGHELLI MICRA MC-L Series**

**Or BEGHELLI MICRA MCA Series ( US version)**

**Photos P-14 & P-15**

**See Attachment A-22 for CSA C860 luminance data.**

**See Attachment A-20 for UL924 luminance data.**

General: The unit is similar to the one described in Part-E above except that it is not equipped with a battery.

The AC unit is made with a capacitive circuit. A sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is :

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

This unit may use 2 Capacitive drive units, each of which power one of the following circuit boards.

The circuit boards may be mounted in channels formed into both the top and bottom of the frame ( see photo)

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet –Red

**PART GG**

**LUXNET EVL SERIES**

**Or BEGHELLI FORTE – FR SERIES**

**PHOTO P-19 & P-20**

**See Attachment A-18 for CSA luminance data**

General: The unit is similar to the one described in Part-G above except that it is not equipped with a battery.

Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet –Red

**PART HH**  
**LUXNET EDRY SERIES**  
**OR BEGHELLI AQUA AQ-L SERIES**

**PHOTOS P-15A & P-16**

**See appendix A24 for CSA C860 luminance data**

General: The unit is similar to the one described in Part-H above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is :

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet –Red

**PART JJ**  
**LUXNET EP-X SERIES**  
**OR BEGHELLI ESCO EC SERIES**

**PHOTO P-17 & P-18**

**See Attachment A-19 for CSA C860 luminance data.**

General: The unit is similar to the one described in Part-J above except that it is not equipped with a battery. Some components are also not provided on the PCB has shown on the electric diagram attached on A-4 and Component layout on PCB on A-5.

Note: As an option, this unit may also have a terminal for connection to a remote 6V dc source. This option is illustrated on the electric diagram attached on A-6 and Component layout on PCB on A-7.

**Alternate construction**

The unit is available with a capacitive circuit. In this case the transformer is replaced with a sealed circuit as shown on attachments A8 Schematic & parts list drawing is on attachment A9 .The BOM is on attachment A-14. The part number is:

WH-63016-CAP (120 Volt input)

Or WH-63017-CAP (120/277 Volt input)

Or WH-63018-CAP (120/347 Volt input)

The above combinations are approved under CSA file 1320085.

The circuit board is part number CB641 for the AC only version. BOM is on attachment A-10. The schematic and artwork is on attachment A-11.

The circuit board is part number is CB642 for the AC version with capability to be powered from a 6 volt, 12 volt or 24 volt input (-UDC option) BOM is on attachment A-12. The schematic and artwork is on attachment A-13.

Colour connections for the DC connections are as follows:

6V	Violet- Yellow
12V	Violet –Blue
24 V	Violet -Red

**PART KK**  
**BEGHELLI Protegga PTG-B6L SERIES**

General: The unit is similar to the one described in Part-K above except that it is not equipped with a battery. Refer to LED Circuit boards as listed at the beginning of the Report for the Universal AC/DC(UDC) LED Board, Universal AC(UAC) LED Board , Dual AC LED Board , 120VAC or 120VDC LED Board plus LED Extension Board.

## **TEST REPORT**

Tests were performed as per CSA Standard C22.2, No. 141-M1985 with satisfactory results. Test results are kept in the CSA Principal File and are available upon request.

### **On Model C EGL-BP:**

- **Rating**, Clause 6.4
- **Temperature**, Clause 6.5
- **Leakage**, Clause 6.6
- **Dielectric Strength**, Clause 6.7
- **Impedance Test**, Standard C22.2 No. 0.4, Clause 4.1

Model C EGL-BP was considered representative of Model CLDE-BP, C EGL and CLDE.

### **Edition 2 - Application LR 110823-9**

Addition of Series CLDC-BP and CLDC:

Model C EGL-BP previously tested in edition 1 is considered representative of Model CLDC-BP and CLDC.

Addition of the 277V input voltage on Series CLDE, C EGL and CLDC.

The following additional tests were performed as per CSA Standard C22.2, No. 141-M1985 with satisfactory results. Test results are kept in the CSA Principal File and are available upon request.

### **On Model CLDC-BP:**

- **Rating**, Clause 6.4

Other tests were not deemed necessary to be repeated.

## **PROJECT 1320085**

Refer to attachments A15 to A26 for Photometric Results for compliance to C860 or UL 924 where applicable in the report and for performance to C22.2 No 141 for battery units.

## **PROJECT 2174722**

The following luminance measurements tests which are stored in the CSA Test Folder were conducted by Beghelli for acceptance of the new LED Circuit boards into the enclosures and the tests for the Edgelit Exit, Self Powered and the STX Exit, UDC were witnessed by Ken McDowell for CSA under the witness testing program to verify their capability on October 8, 2008.

Also additional light output tests were done for the following units

M-ESPLR2MBA

Quadra Exit Self-powered #QR-E-SP-L-R-2-W

SLELRUM-120VAC-120VDC-2 WIRES

AQESPLR2U

OTE

OTSSPLRCROC10

FTZSALR2C

MC-ELR2CLR

MC-SLR2CLR

SL-B6L-ESSPLR2C

SLE  
SL-B6L-ESSPLR2C  
SLSSPLRUM  
SLELRUM-UDC  
STXELR AC/DC  
OTTICA Edgelite Self-Powered  
STX/SLE

In addition the following tests were conducted on the new Protegga Units

PTG-B6L-EOS Luminance measurement test of Exit & Sortie at 4.2vdc at 0 Lux ambient  
Luminance measurement test of Exit & Sortie at 120V AC at 0 Lux ambient  
Luminance measurement test of Exit & Sortie at Non Energized at 100 Lux ambient

PTG-B6L-ES Luminance measurement test of Exit & Sortie at 4.2vdc at 0 Lux ambient  
Luminance measurement test of Exit & Sortie at 120V AC at 0 Lux ambient  
Luminance measurement test of Exit & Sortie at 120V AC at 0 Lux ambient

### **PROJECT 2286813**

The following tests were conducted on the Oval Ottica unit refer to ATT 6

Luminance measurement test of Exit at 4.2vdc at 0 Lux ambient  
Luminance measurement test of Exit at 120V AC at 0 Lux ambient  
Luminance measurement test of Exit at 100 Lux ambient

### **Project 2494406**

The following tests have been performed by submittor (Peter Shilling) under the SMTC Program to CSA Std 141-10 and these results have been reviewed and witnessed by P. Hew, C.E.T. for CSA with Satisfactory results.

1. Mechanical Rigidity Test
2. Luminance Measurement Test
3. Color Test

Detailed Test Results are stored as Att7 Tests in Documentum.

### **Project 2580793**

In view of the minor construction changes, no testing deemed necessary.

**Project 2717388**

The following tests have been performed by submittor (Peter Shilling) under the SMTC Program to CSA Std 141-10 and these results have been reviewed by P. Hew, C.E.T. for CSA with Satisfactory results.

**1. Mechanical Rigidity Test B 2.3.2**

A mass of 1 kg ± 100 g shall be applied over an area of 6.45 cm<sup>2</sup> (1 in<sup>2</sup>) in the central part of the panel for 1 min. The applied force shall not dislodge the panel, and the sign shall remain intact after the force has been removed.

Result – Pass

**2. Diffuser Flammability Test E 1.3 (b)**

Exception 1:

(b) a CSA relative thermal ratings as described in CAN/CSA-C22.2 No. 0.17 or a UL relative thermal index (RTI) as described in Table 34.1 of UL 746C. If the temperature of the diffuser measured during the normal temperature test is less than 65 °C or if the diffuser is subjected to the thermal conditioning test, the diffuser does not have to comply with this requirement.

Result:	stablized temperature	<u>23.4</u>	deg C	<u>23.4</u>	+ 15 min deg C	<u>23.2</u>	+ 30 min deg C
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Results: Pass

**3. Luminance Measurement Test**

See Attachment 12 for detailed test results