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Solar LED Luminaires CN Series of Municipal Roadway

Regular street DC
Solar configuration
12 Volts DC, or 24 Volts DC Available

Applications:

Lone Star newest generation of Residential LED Street and Area Lighting, the CN, offers a sleek modern design weighing less than 7 pounds for models CN2 & CN3 and less than 12 pounds for models CN4 & CN6. It is ideal for 2 and 3 lane local and collector roadways, achieving IESNA RP8 standards up to 170' pole intervals. The performance is equivalent to 70W through 250W High Pressure Sodium (HPS) Luminaires and provides energy savings of 65% or greater. The CN is designed to meet the needs of Municipalities, Utilities, Electric Cooperatives, Parks, Paths, and other Roadway and Area applications.

Description:

This unit replaces 100 watt, 150 watt, 250 watt incandescent lighting (HID, high-pressure sodium, metal-halide, etc.), using only 40 watts maximum, saving significant electrical costs.

Excellent for parking lots, entryways, driveways, office buildings, warehouse exteriors, storage buildings, etc. Powerful, extra-bright LEDs deliver bright, even lighting in outdoor applications. LEDs rated at 100,000 hours (18 years at average use), reducing bulb replacement costs by up to 10 times. LED lighting provides instant-on illumination versus standard HID bulbs which require a warm-up period. Advanced heat dissipation technologies for long-term reliability.

High-quality driver components. Unlike standard outdoor lighting which attract bugs, LED light is invisible to most bugs, reducing "bug swarming" around light.

Construction:

Heavy-duty cast aluminum housing and corrosion-resistant hardware provides strength of construction and longevity in application. Powder-coated finish and IP65 construction provides durable resistance to the outdoor environment. Lightning protection.

On-Board Lighting Controls:

Includes replaceable high-quality Lumatrol photocontrol for dusk to dawn on operation.

Optics:

Precision-molded, high-impact, optical-grade PMMA lens providing uniform Type V wide oval distribution. Keyed lens assembly ensures consistent optical performance across a broad range of available outputs. Lens resists impact damage.

Dark Sky certified, full cut-off reduces light pollution. Fixture and lens design provides more focused, even lighting with better color rendition. Color temperature is 5,500K (natural white).

Electrical:

High-efficiency 5,500K, 70CRI LEDs are mounted to a metal core printed circuit board (COB) which is installed onto the finned LED heat sink to maximize thermal management and provide long operating life for the LEDs (rated life 100,000 hrs, 40°C ambient L85** based on 9,000 hours of LED testing per LM-80-08. LED life based on projected values per IESNA TM21-11). Variable voltage input drivers (12-60 volts DC) LED driver design provides long life of electrical components by providing thermal separation of electrical components from LED heat sink.

Mounting:

Mounts to standard 1.5" O.D. round pole arm (available at most home improvement stores).

Listings – DLC, ((cULus, ETL) **only in AC version**), ISO, CE, RoHS, IDA Dark Sky. IP65 rated. Suitable for ambient temperatures from -40° to 40°C.

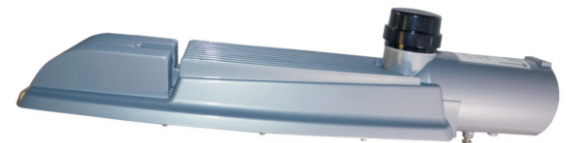
Warranty:

5-year limited warranty. Consult manufacturer for additional terms and conditions. Fully tested and certified.

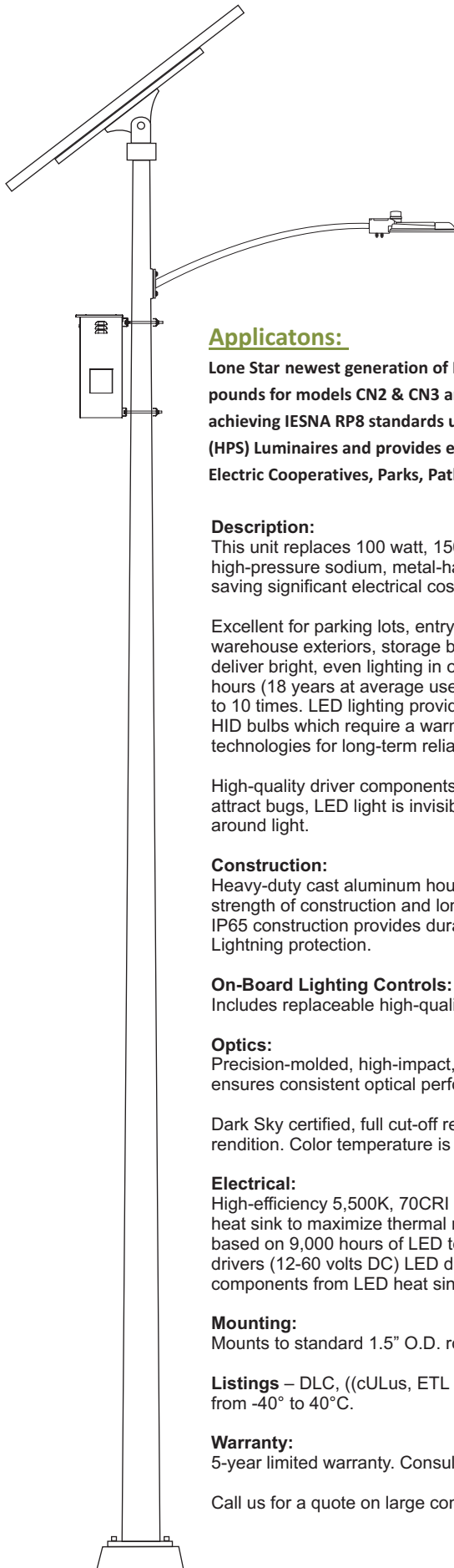
Call us for a quote on large commercial projects and quantity pricing.



CN 3



CN 4,6



Solar LED Luminaires CN Series of Municipal Roadway



Specifications:

Electrical Distribution:

Input Line Voltage: 12 Volts DC standard (V1)
 Power Draw: 40 Watt Max
 Power Factor (PF): >0.98
 Lighting Arrestor Protection: Delta 600 Volts DC (optional)
 Forward Current: 1050 mA

Optical:

Light Source: High-quality LumiLEDs, 100,000 hour life
 Correlated Color Temperature (Kelvin): 5,500K (pure white)
 Custom Design Lens Source: Ledil
 Delivered Light Efficiency: >90%
 Beam Pattern: Type II,III,IV,V
 Light Delivering Rating: Cutoff (Dark Sky certified)

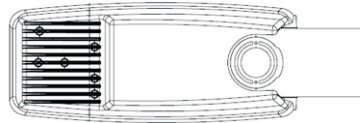
Operating Environment:

Operating Temperature: -40F to 110F, -40C to +40C

Certifications: ETL (to UL standards) **only in AC version**, CE, RoHS, NOM, FIDE, meets IP65, IESNA, Dark Sky

Mechanical:

Weights/Dimensions:



CN2, CN3
 EPA: 0.6 sq. f.
 Length: 17 in. (43.18 cm)
 Width: 3.41 in. (8.66 cm)
 Height: 3.75 in. (9.53 cm)
 Weight: 6.7 lbs.

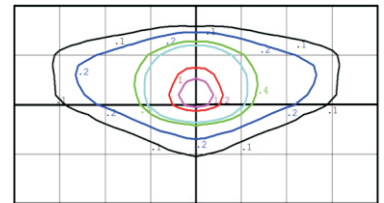


CN4, CN6
 EPA: 0.9 sq. f.
 Length: 25.23in. (64.08 cm)
 Width: 6.49 in. (16.48 cm)
 Height: 4.25 in. (10.8 cm)
 Weight: 11.25 lbs.



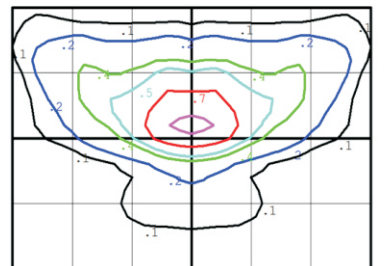
Photometrics:

CN3, 5700K, Type II Distributon



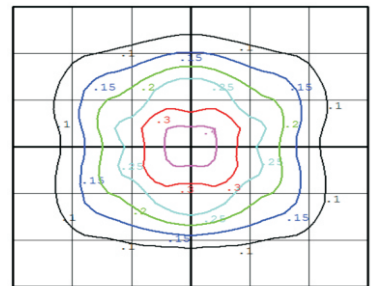
Sample Area 200X100 ft at 25 Height

CN3, 5700K, Type III Distributon



Sample Area 150X100 ft at 25 Height

CN3, 5700K, Type V Distributon



Sample Area 150X150 ft at 25 Height

Lum. Classifcaton System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	505.3	N.A.	11.9
FM (30-60)	1668.2	N.A.	39.2
FH (60-80)	914.3	N.A.	21.5
FVH (80-90)	11.9	N.A.	0.3
BL (0-30)	286.4	N.A.	6.7
BM (30-60)	514.8	N.A.	12.1
BH (60-80)	340.4	N.A.	8.0
BVH (80-90)	18.6	N.A.	0.4
UL (90-100)	0.0	N.A.	0.0
UH (100-180)	0.0	N.A.	0.0
Total	4259.9	N.A.	100.0

BUG Ratng B1-U0-G1

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Lamp Configurations:

The lamp comes in 2 configurations:

Package # 1

Comes with the **CN3 LED street lamp** that will produce **4,231 Lumens**, the lamp comes with the 12 Volts replaceable high-quality Lumatrol photocontrol for dusk to dawn on operation, or sealed cap in case the Solar Panel do the photo control job. it depend of the Charge controller used according the situation. 2- 80 watt Solar Modules, to produce 160 watt combined in the solar array, High Quality European made solar certified panels Italian *Peimar* this modules are designed to do the best performance in Off Grid operations. The panels have to be placed on top of the pole facing the south direction in 45 degrees angle.

The battery box comes with brackets for 6 inches pole, the metal box is weather proof with accommodation for 2 -110 Ah Sealed AGM batteries. the Charge controller is pre-assembled on the box also the Lighting arrester in case the customer require it on the package.

The AGM batteries are standard sealed industrial grade AGM solar batteries, Absorbant Glass Mat (AGM) technology for superior performance. Valve regulated, spill proof construction allows safe operation in any position. Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified. U.L. recognized under file number MH 20567. **The Battery Box will hold 2,640 watt in storage capacity.** it means it will supply 5.5 cycles of 12 hours operation consuming 480 watt per night keeping 1.5 cycle as battery backup to avoid battery drainage the system will be **categorized as 4 days duty** setup system.

Package # 2

Comes with the **CN3 LED street lamp** that will produce **4,231 Lumens**, the lamp comes with the 12 Volts replaceable high-quality Lumatrol photocontrol for dusk to dawn on operation, or shorting cap in case the Solar Panel do the photo control job. it depend of the Charge controller used according the situation. 2- 80 watt Solar Modules, to produce 160 watt combined in the solar array, High Quality European made solar certified panels Italian *Peimar* this modules are designed to do the best performance in Off Grid operations.

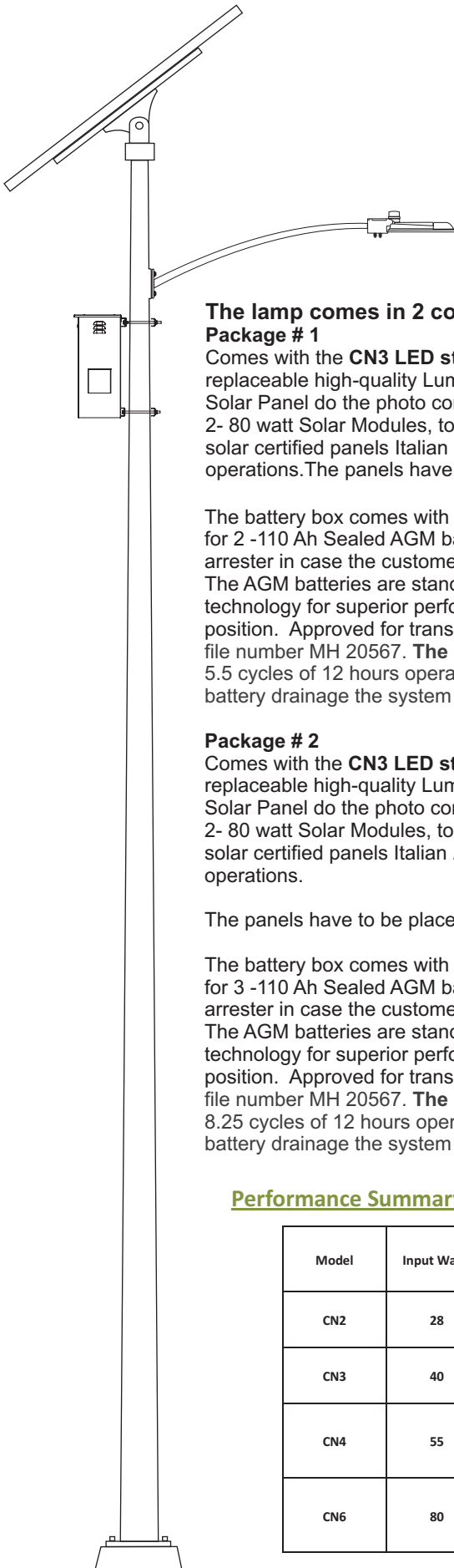
The panels have to be placed on top of the pole facing the south direction in 45 degrees angle.

The battery box comes with brackets for 6 inches pole, the metal box is weather proof with accommodation for 3 -110 Ah Sealed AGM batteries. the Charge controller is pre-assembled on the box also the Lighting arrester in case the customer require it on the package.

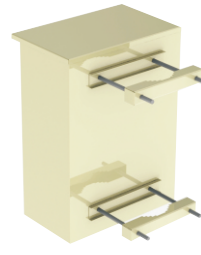
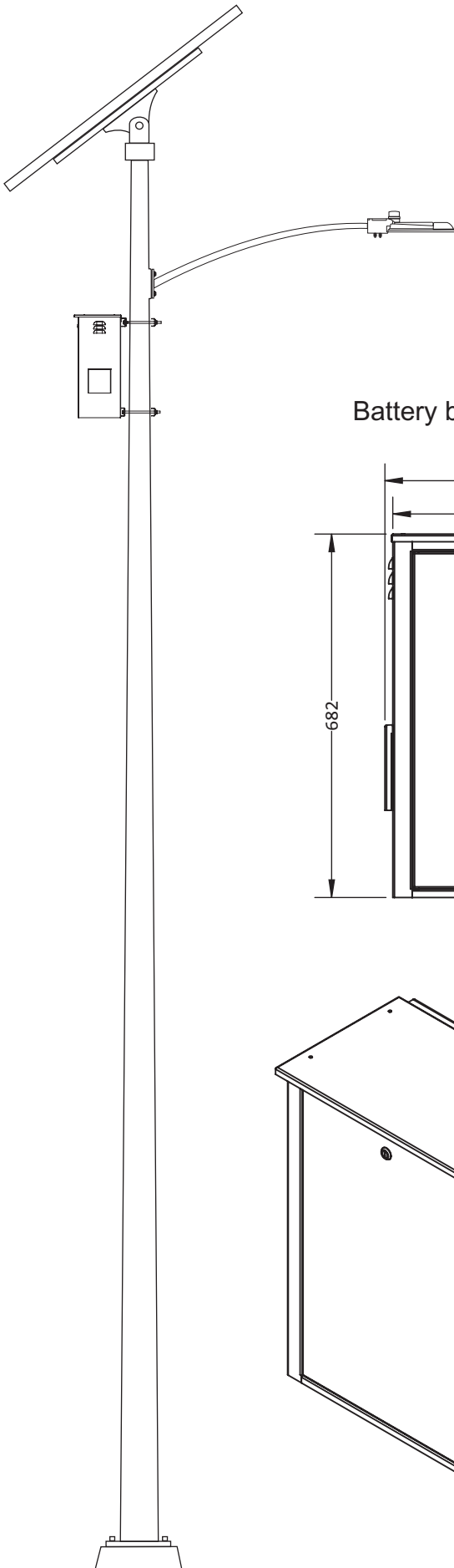
The AGM batteries are standard sealed industrial grade AGM solar batteries, Absorbant Glass Mat (AGM) technology for superior performance. Valve regulated, spill proof construction allows safe operation in any position. Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified. U.L. recognized under file number MH 20567. **The Battery Box will hold 3,960 watt in storage capacity.** it means it will supply 8.25 cycles of 12 hours operation consuming 480 watt per night keeping 1.25 cycle as battery backup to avoid battery drainage the system will be **categorized as 7 days duty** setup system.

Performance Summary:

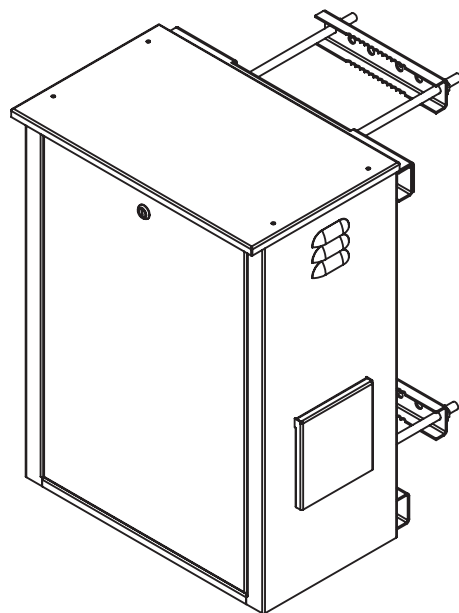
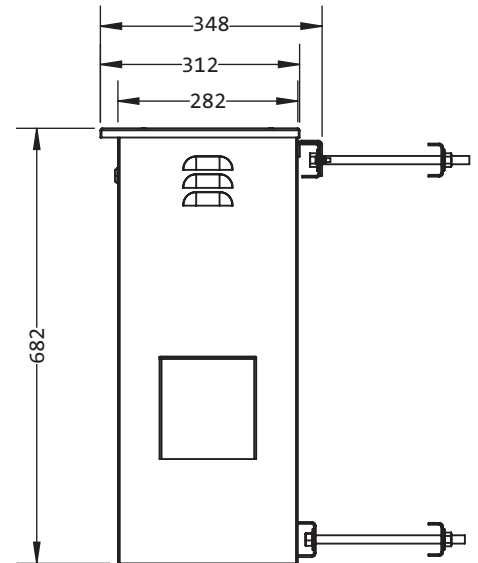
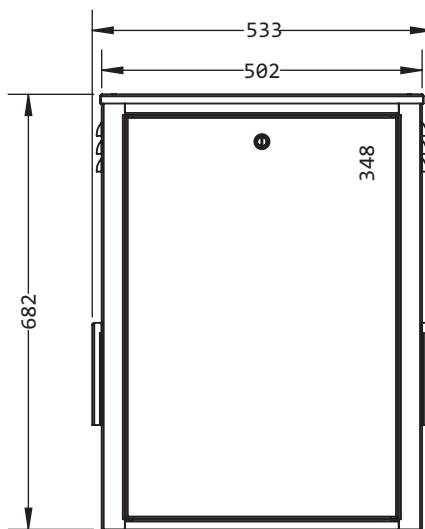
Model	Input Wats	Input Current (A) variable driver			Distributon Type	4100K		5700K	
		12V	24V	36V		Lumens	Efcacy (LPW)	Lumens	Efcacy (LPW)
CN2	28	1050 mA	1050 mA	N/A	II III V	2821	101	2860	102
CN3	40	1050 mA	1050 mA	N/A	II III V	4231	103	4260	104
CN4	55	1050 mA	1050 mA	N/A	II III IV V	5425	102	5465	103
CN6	80	2100 mA	2100 mA	N/A	II III IV V	8138	104	8198	105



BATTERY BOX ENCLOSURE



Battery box dimensions in mm



General Characteristics

Brand : Lone Star

Code : LME-02-PM

Description : Metal enclosure for 2 batteries
Pole mount type

Box Construction:

Material : Rolled steel sheet

Gauge : 18, 11

Color : Beige

Applications : Exterior

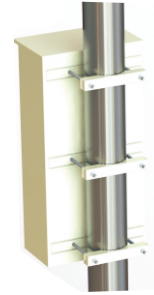
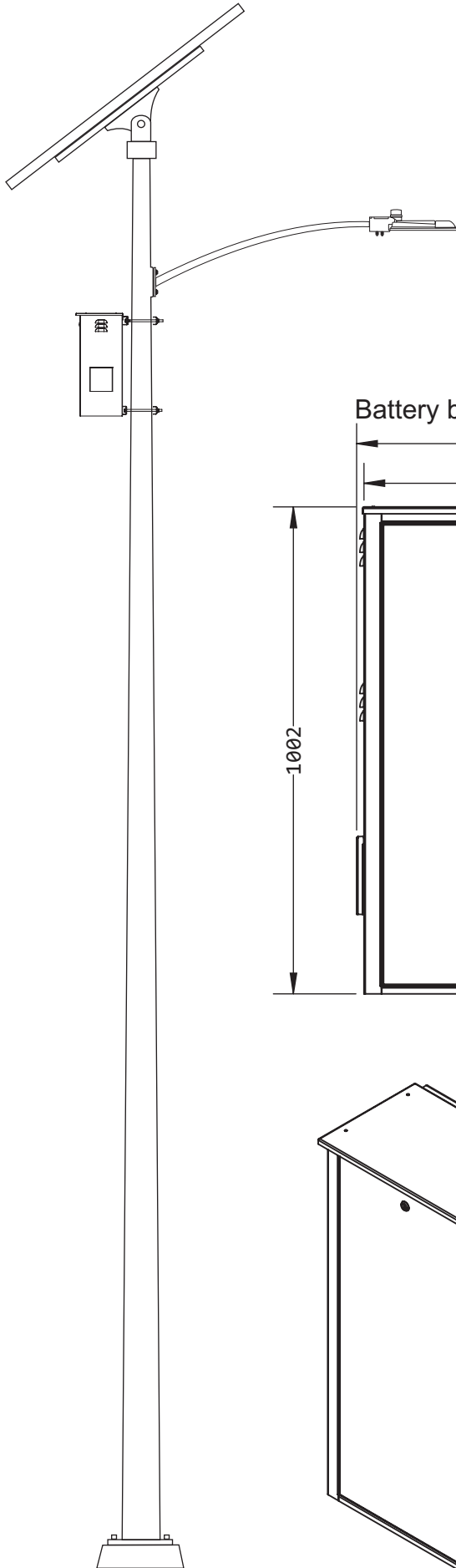
Paint finish:

Powder coated

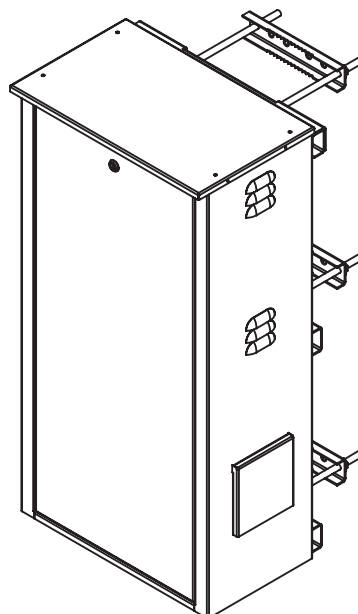
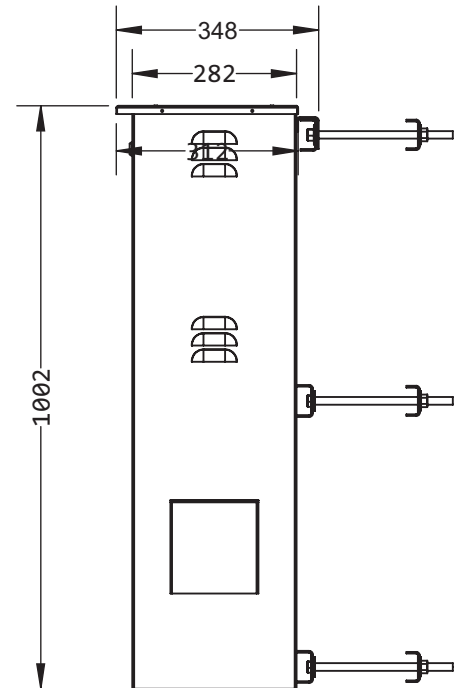
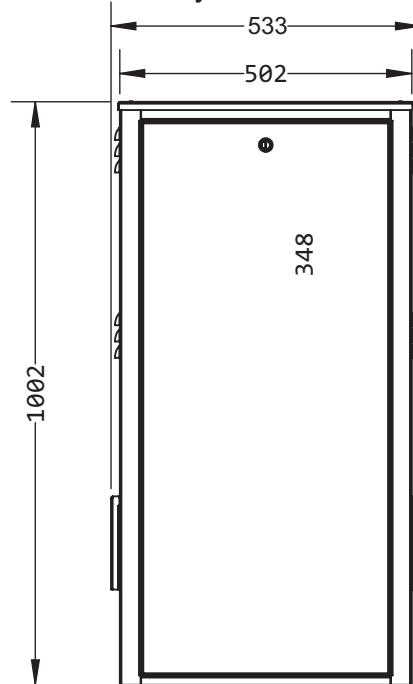
Weight

22.32 Kg

BATTERY BOX ENCLOSURE



Battery box dimensions in mm



General Characteristics

Brand : Lone Star

Code : LME-03-PM

Description : Metal enclosure for 3 batteries
Pole mount type

Box Construction:

Material : Rolled steel sheet

Gauge : 18, 11

Color : Beige

Applications : Exterior

Paint finish:

Powder coated

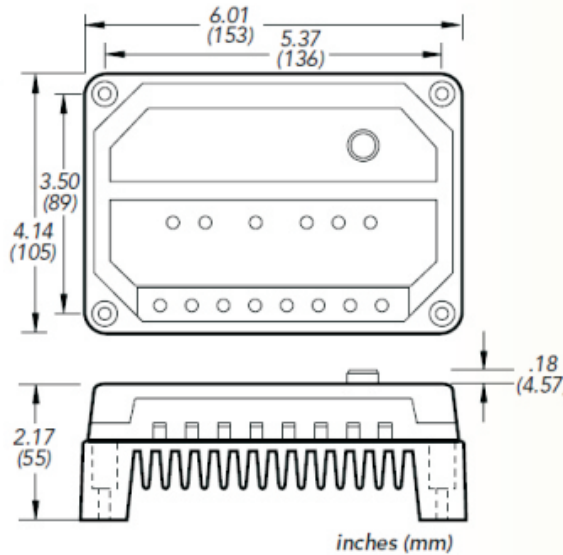
Weight

30.93 Kg

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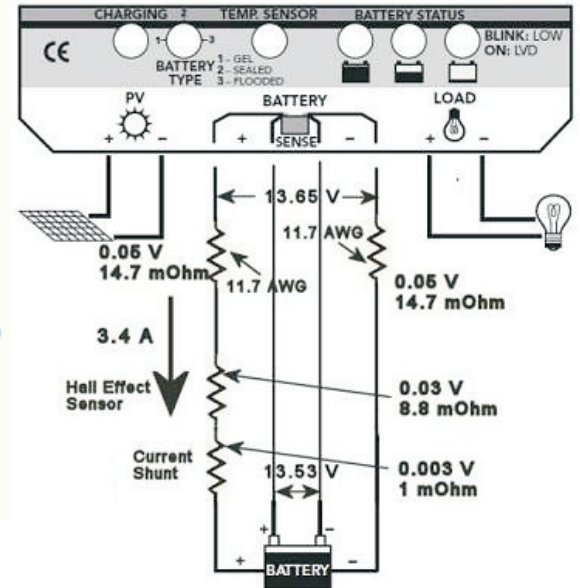
BOX CONTROLLER

Controller option #1 using PWM charge controller, LED driver and Nema 3 pin Photocontrol

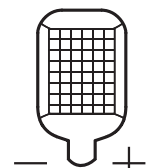
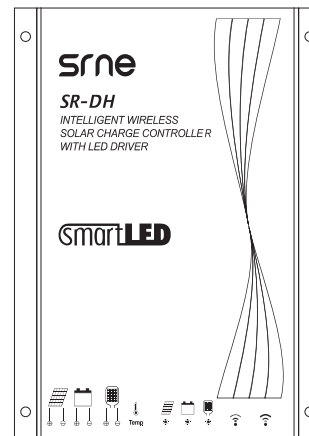
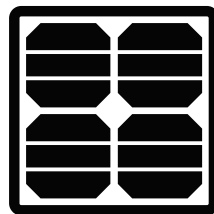


Charge controller model will change according to the project requirements

WIRING DIAGRAM



Controller option #2 using the solar panel as Photocontrol and the all in one smart LED driver with charge controller and programable features.



Fixture can be ordered with a pig tail instead of a terminal block with preterminated TYCO Insulation Displacement IP67 Gel Connectors. Check with your Sales rep for more informaton.



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BATTERY SPECS

UPG No. D5751

UB121100

Maintenance-Free

Sealed Lead-Acid Battery

Absorbant Glass Mat (AGM) technology for superior performance. Valve regulated, spill proof construction allows safe operation in any position. Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified. U.L. recognized under file number MH 20567.

Specification

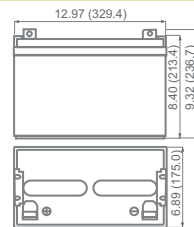
Nominal Voltage	12 volts		
Nominal Capacity	77° F (25° C)		
20-hr. (5.50A)	110.0 Ah		
10-hr. (10.23A)	102.3 Ah		
5-hr. (18.70A)	93.5 Ah		
1-hr. (66.00A)	66.0 Ah		
Approximate Weight	65.7 lbs (29.8 kgs)		
Internal Resistance (approx.)	5m?		
Shelf Life (% of normal capacity at 77° F (25° C))			
3 Months	6 Months	12 Months	
91%	82%	64%	
Temperature Dependency of Capacity (20 hour rate)			
104° F (40 C)	77° F (25 C)	32° F (0 C)	5° F (-15 C)
102%	100%	85%	65%
AGM Operational Temperature			
Charge	32° F to 104° F (0° C to 40° C)		
Discharge	5° F to 113° F (-15° C to 45° C)		
AGM Storage Temperature	5° F to 104° F (-15° C to 40° C)		



Charge Method (Constant Voltage)

Cycle Use (Repeating Use)	
Initial Current	33 A or smaller
Control Voltage	14.6 - 14.8 V
Float Use	
Control Voltage	13.6 - 13.8 V

Physical Dimensions: in (mm)



L: 12.97in (329.4 mm)
W: 6.89in (175.0 mm)
H: 8.40in (213.4 mm)
TH: 9.32in (236.7 mm)
Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.

Terminals



L Series (L Type Terminal)

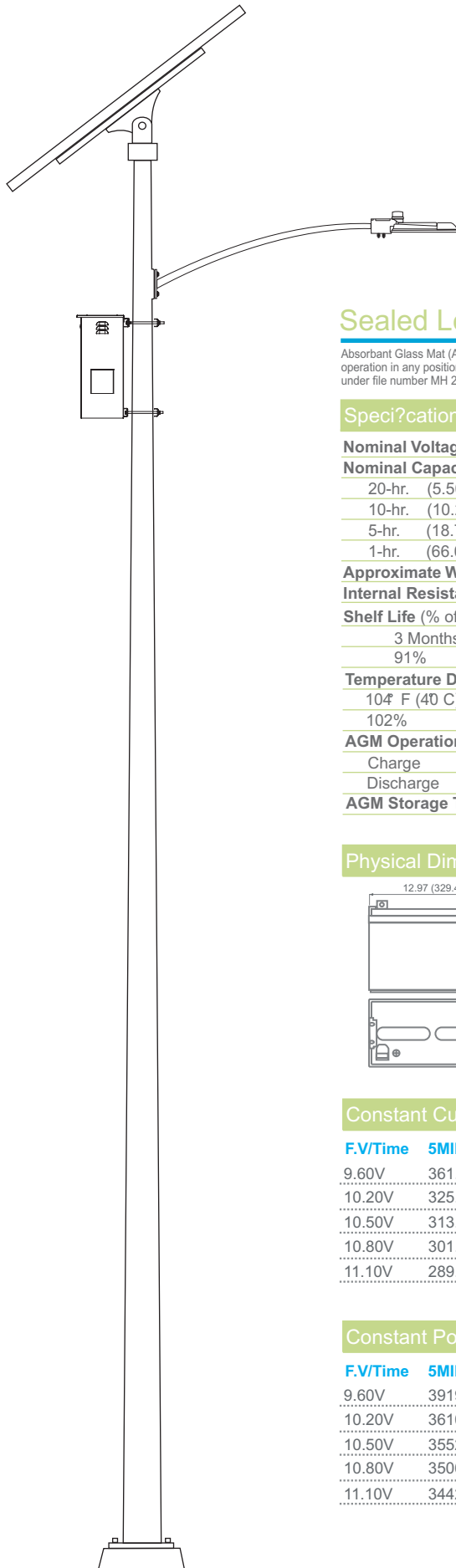
Dimension Type	L	W	H	h	Ø
La	25.5	7.0	22.0	10.5	8.5

Constant Current Discharge Characteristics Unit:A (25°C, 7

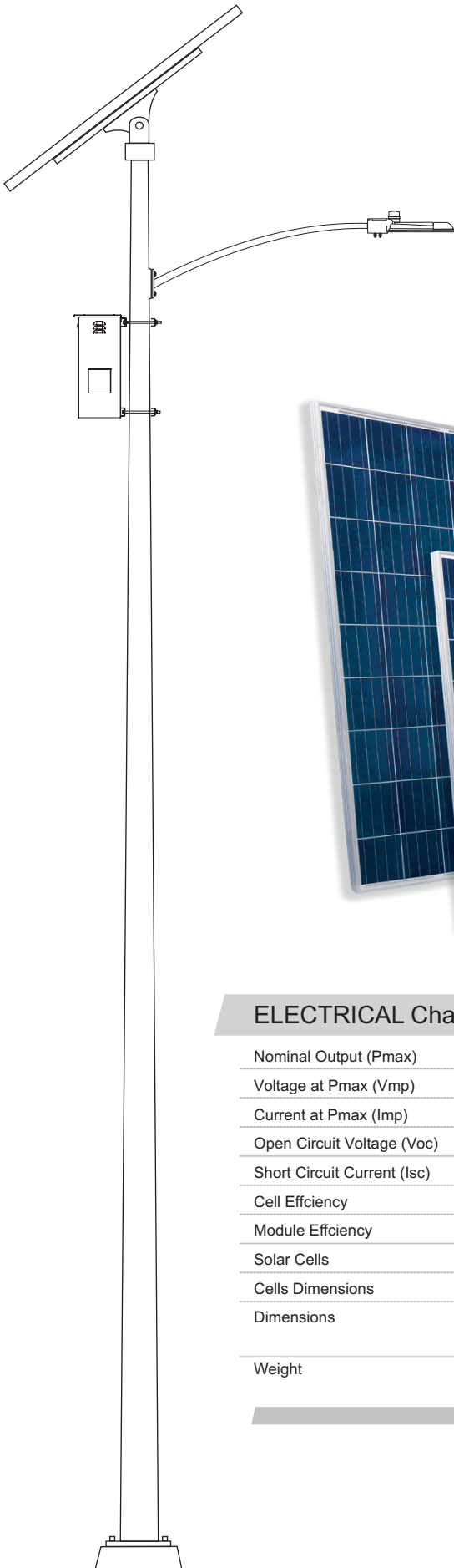
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	361.1	269.3	189.5	114.7	59.9	34.9	25.6	20.0	16.5	11.6	10.5	5.7
10.20V	325.2	245.4	169.6	108.7	56.3	33.3	24.9	19.5	16.2	11.4	10.2	5.5
10.50V	313.2	233.4	159.6	105.7	54.9	32.5	24.3	19.2	16.0	11.3	10.0	5.5
10.80V	301.2	221.4	149.6	102.7	52.9	31.7	23.7	18.9	15.6	11.0	10.0	5.4
11.10V	289.3	209.5	139.7	99.8	50.9	30.9	22.9	18.3	15.2	10.7	9.5	5.1

Constant Power Discharge Characteristics Unit:W (25°C, 7

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	3919.2	2959.6	2013.0	1217.9	693.3	404.0	297.3	231.4	190.5	134.7	121.7	65.5
10.20V	3610.0	2724.2	1882.3	1207.0	651.4	386.0	289.3	225.4	149.7	131.7	118.7	63.8
10.50V	3552.1	2647.4	1809.5	1199.0	630.4	377.1	282.3	221.4	184.5	130.7	116.7	63.0
10.80V	3506.2	2577.5	1741.6	1196.0	613.5	369.1	276.3	217.5	181.5	127.7	115.7	62.7
11.10V	3442.4	2492.8	1661.8	1187.0	605.5	368.1	273.3	216.5	180.5	126.7	112.7	60.8



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SOLAR PANEL SMALL



12V DC MODULES
FOR OFF-GRID SOLUTIONS



SUITABLE FOR: SOLAR KITS, RVs, BOATS
AND CABINS



MAXIMUM ADAPTABILITY

Poly- SMALL PANELS FROM OS80P TO OS130P

ELECTRICAL Characteristics (STC)*

	OS80P	OS100P	OS130P
Nominal Output (Pmax)	80 W	100 W	130 W
Voltage at Pmax (Vmp)	17.78 V	17.80 V	17.64 V
Current at Pmax (Imp)	4.50 A	5.62 A	7.37 A
Open Circuit Voltage (Voc)	21.33 V	21.36 V	21.17 V
Short Circuit Current (Isc)	5.03 A	6.26 A	8.25 A
Cell Efficiency	14.69 %	15.22 %	14.84 %
Module Efficiency	12.48 %	13.12 %	13.01 %
Solar Cells	36 (4x9)	36 (4x9)	36 (4x9)
Cells Dimensions	156x97 mm / 6x3.8"	156x117 mm / 6x4.6"	156x156 mm / 6x6"
Dimensions	951x674x35 mm 37.4x26.5x1.4"	1131x674x35 mm 44.5x26.5x1.4"	1482x674x35 mm 58.3x26.5x1.4"
Weight	7.15 Kg / 15.76 lb	8 Kg / 17.64 lb	8.9 Kg / 19.62 lb

*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5