

# **30W** ALL IN ONE **SOLAR LED STREET LIGHT** **SPECIFICATION**





## INTRODUCTION

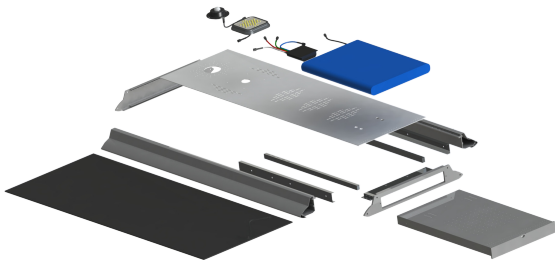
Integrated solar led street light is a new kind of solar led street light for the road lighting. Its solar panel, LED lamp, controller, battery are all integrated inside the lamp then it is very easy for the installation. In addition, there is a brightness sensor on the lamp. If the brightness is enough, the solar panel can absorb the solar energy for battery charging, while if the brightness is not enough, the LED lamp will be on automatically and the battery will supply the energy to the lamp for area illumination. What's more, the lamp can be customized with motion sensor or time control mode. Its brightness standard can be adjusted by movement or time schedule. It has solved the problem of complex installation and expensive transportation compared with traditional solar LED street light.

## PRODUCT SPECIFICATION:

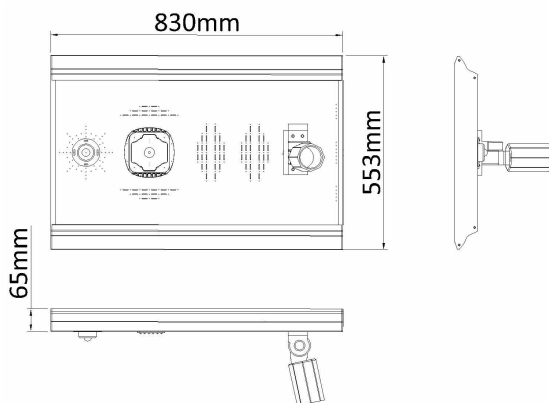
### 30W All-in-One Solar LED Street Light Parameter

|                           |                  |                         |
|---------------------------|------------------|-------------------------|
| Model No.                 |                  | DEL-DN1-30W             |
| LED Watt(W)               |                  | 30                      |
| LED Chip                  |                  | LM80 Nichia 3030        |
| Solar Panel(W)            |                  | 70                      |
| Lithium Battery(WH)       |                  | 307                     |
| Beam Angle(°)             |                  | 140*70                  |
| Color Temperature(K)      |                  | 2700-6500               |
| Typical Luminous Flux(LM) |                  | 4000                    |
| Lighting Mode             | Pole( $\leq$ 8m) | PIR Sensor/Time Control |
|                           | Pole(>8m)        | Time Control            |
| Charging Time(Hours)      |                  | 6                       |
| Min. Working Time(Hours)  | Full Bright      | 10                      |
|                           | Dim Mode         | 40                      |
| Product Size(MM)          |                  | 830*553*65              |
| Net Weight(KG)            |                  | 17.5                    |
| Package Size(MM)          |                  | 1002*652*160            |
| Gross Weight(KG)          |                  | 21                      |
| Height Advice(M)          |                  | 6-7                     |
| Distance Advice(M)        |                  | 20-25                   |
| Working Temperature(C)    |                  | -20~65                  |
| 20" Container(pcs)        |                  | 292                     |
| 40" HQ Container(pcs)     |                  | 678                     |

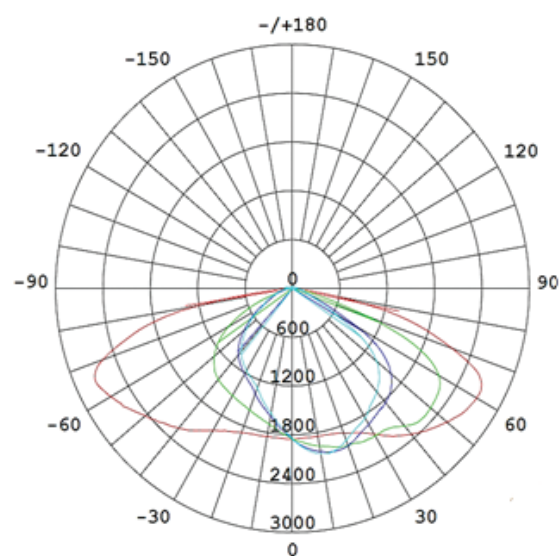
## PRODUCT STRUCTURE:



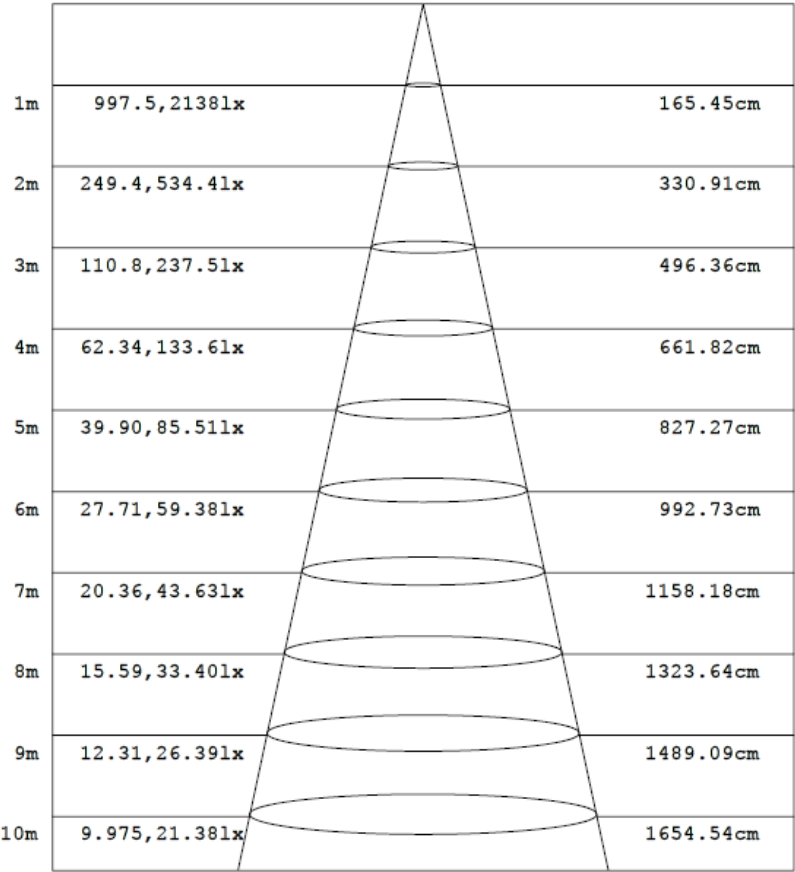
## PRODUCT SIZE:



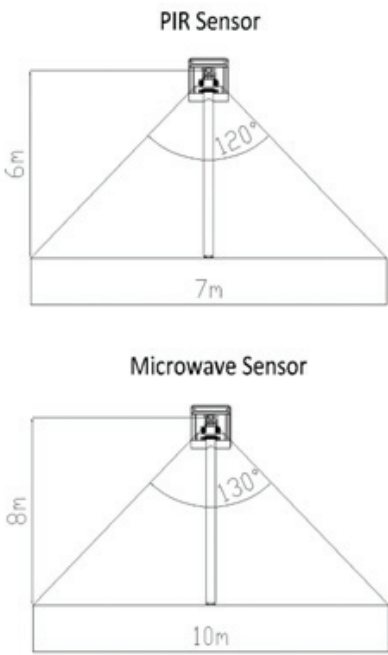
## LUMINOUS INTENSITY DISTRIBUTION DIAGRAM:



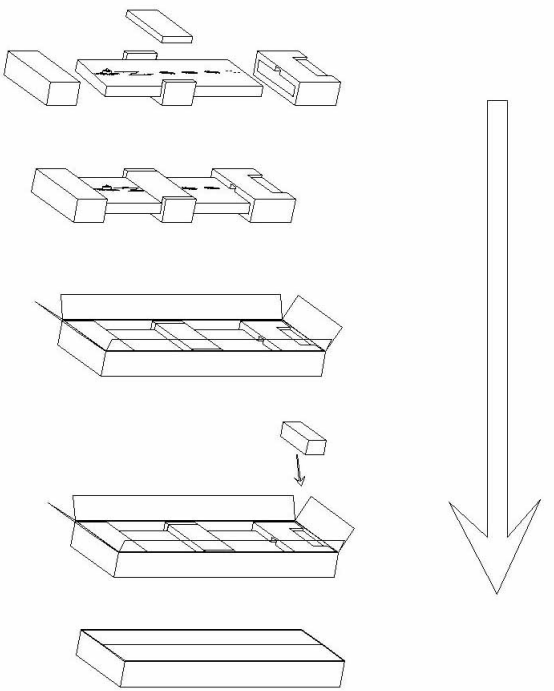
## LUMINOUS LUX DIAGRAM



## MOTION SENSOR DETECTION:



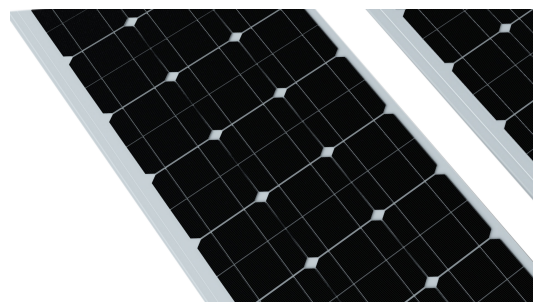
## PACKAGE INFORMATION:



| Item        | Pack               | Weight | 20" Container | 40" Container |
|-------------|--------------------|--------|---------------|---------------|
| DEL-DN1-30W | 1002mm*652mm*160mm | 17.5kg | 292pcs        | 678pcs        |

## SOLAR PANEL

- Quality solar cells with high solar energy conversion up to 24%
- Mono-crystalline silicon solar cells
- Transparent low-iron tempered glass and anodized aluminum frame to ensure modules working in extreme outdoor environment
- Lifespan up to 25 years ( 90% power output for 10 years, and 80% power output for 25 years)



| Model Name                          | DEL-MPV-70W   |
|-------------------------------------|---|
| Pm(W)                               | 70  |
| Number of cell(pcs)                 | 15  |
| Cell Dimension (mm)                 | 156*156   |
| Max System Voltage(V)               | 1000  |
| Vm(V)                               | 18.2  |
| Im(A)                               | 3.85  |
| Voc(V)                              | 22.2  |
| Isc(A)                              | 4.4   |
| Module Size(mm)                     | 490*820   |
| Module Net Weight(kg)               | 5.5   |
| Maximum system voltage (V)          | 1000  |
| Temperature coefficients of Isc (%) | +0.1%/°C  |
| Temperature coefficients of Voc (%) | -0.38%/°C   |
| Temperature coefficients of Pm (%)  | -0.47%/°C   |
| Temperature coefficients of Im (%)  | +0.1%/°C  |
| Temperature coefficients of Vm (%)  | -0.38%/°C   |
| Temperature Range                   | -40°C ---85°C   |
| Surface Maximum Load Capacity       | 60m/s (200kg/sq.m)  |
| Junction Box Type                   | PPO, black  |
| Connectors and Cables Type          | 2*2.5mm <sup>2</sup>  |
| Length of Cables (mm)               | 450   |
| Cell Efficiency (%)                 | ≥19.18%   |
| Output tolerance (%)                | ± 3%  |
| Glass                               | High transmissivity low-iron 3.2 mm toughened glass                           |
| Frame (Material, Corners, etc.)     | Anodized Aluminum Alloy   |
| Standard Test Conditions            | AM1.5 100MW/cm2 25°C  |
| Warranty                            | 10 years for the whole product, 90% power for 10years, 80% power for 25 years |
| FF (%)                              | ≥73.3%  |

## LED

- DEL LED waterproof modular is a classical road lighting solution to customers for all kinds of road. The excellent heat radiation and LED platform ensure long lifetime and reliability
- LM80 Nichia LED inside for low light decay
- Up to 70% energy saving with full compliance to road lighting safety standards compared to HPS & MH
- Professional 3030 LED Street Light Lens for wider and brighter lighting
- Waterproof and replaceable LED modular for easy maintenance



| Data Set | Case Temperature ([TS]) | Ambient Temperature ([TS]) | Drive Current [IF] | Lumen Maintenance at 10,000 hours | Chromaticity Shift ( $\Delta u'v'$ ) at 10,000 hours | TM-21 Projection L70(10K) |
|----------|-------------------------|----------------------------|--------------------|-----------------------------------|--|---------------------------|
| 1        | 55°C                    | >50°C                      | 100 mA             | 98.1%                             | 0.0014   | > 60600 hours             |
| 2        | 55°C                    | >50°C                      | 150 mA             | 98.3%                             | 0.0017   | > 60400 hours             |
| 3        | 55°C                    | >50°C                      | 200 mA             | 98.2%                             | 0.0020   | > 60500 hours             |
| 4        | 85°C                    | >80°C                      | 100 mA             | 96.4%                             | 0.0014   | > 60600 hours             |
| 5        | 85°C                    | >80°C                      | 150 mA             | 96.3%                             | 0.0020   | > 60400 hours             |
| 6        | 85°C                    | >80°C                      | 200 mA             | 93.9%                             | 0.0035   | > 55900 hours             |
| 7        | 105°C                   | >100°C                     | 100 mA             | 92.3%                             | 0.0019   | > 60600 hours             |
| 8        | 105°C                   | >100°C                     | 150 mA             | 93.4%                             | 0.0027   | > 60400 hours             |
| 9        | 105°C                   | >100°C                     | 200 mA             | 90.7%                             | 0.0034   | > 42800 hours             |

## BATTERY

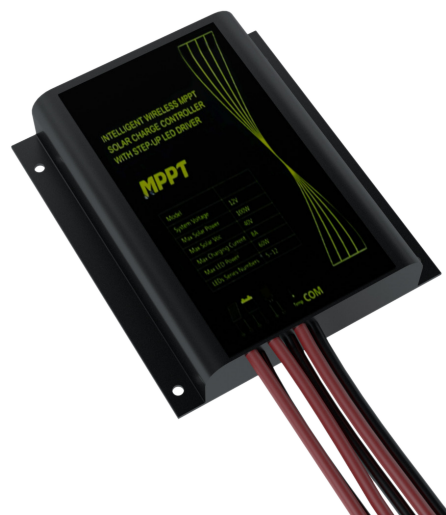
- Lithium battery
- In-ground solution and on-pole solution are available.
- Completely maintenance-free
- Long service life
- Environmental & Non-pollution
- Safety & Reliability



| NO. | Item                                    | General Parameter  |                | Remark  |
|-----|---|--|----------------|---|
| 1   | Rated Capacity                          | Typical<br>Minimum   | 25Ah<br>24.6Ah | Standard Charge and Discharge   |
| 2   | Normal Voltage                          | 12.8V  |                | Operation Voltage   |
| 4   | Charging End Voltage                    | 14.6V  |                |   |
| 5   | Charge Mode                             | CC,CV  |                |   |
| 6   | Charging Current                        | 0.5C   |                | Charging Current  |
| 7   | Charging Cut-off Current                | 0.02C  |                | /   |
| 8   | Charging Time                           | 6-7 hours  |                | /   |
| 9   | Over-Charge Voltage Protection(Cell)    | 3.9±0.025V   |                | /   |
| 10  | Discharging Current                     | 5A   |                | /   |
| 11  | Maximum Continuous Discharge Current    | 7A   |                | /   |
| 12  | Over-Discharge Voltage Protection(Cell) | 2.3±0.08V  |                |   |
| 13  | Over-Current Discharge Protection       | 20±5A  |                |   |
| 14  | Short Circuit Protection                | With Protection  |                |   |
| 15  | Short Circuit Protection Release        | Cut Off Load   |                |   |
| 16  | Battery Dimension                       | Length(L) Max(mm)  |                | 60±25%R.H. at the shipment state  |
| 17  |   | Width(W) Max(mm)   |                |   |
| 18  |   | Height(H) Max(mm)  |                |   |
| 19  | Weight                                  | 6.0kg  |                |   |
| 20  | Operation Temperature Range             | Charge: 0~45℃  |                | 60±25%R.H.Bare Cell   |
| 21  |   | Discharge: -10~60℃   |                |   |
| 22  | Storage Temperature Range               | 1 Month: -20~45℃   |                | 60±25%R.H. at the shipment state  |
| 23  |   | 3 Month: -20~45℃   |                |   |
| 24  |   | 1 Year: -20~20℃  |                |   |
| 25  | Cycle Life                              | 1. Charge:0.2c to 14.6V<br>2.Constant voltage to 0.02c<br>Rest time : 10 min<br>3. Discharge: 0.2c to 8.0V<br>4. Rest Time between Charge and Discharge: 10min<br>5. Temperature:25±5℃ |                | Higher than 70% of the Initial Capacities of the Cells above 1000 times |

## CONTROLLER

- Three types advanced controller provide three optimal solar solutions with different function and cost.
- Features
- IP67 Water proof protection
- PWM charging mode with high charging efficiency
- Protection for over charge, over discharge, over load and anti-reverse connection

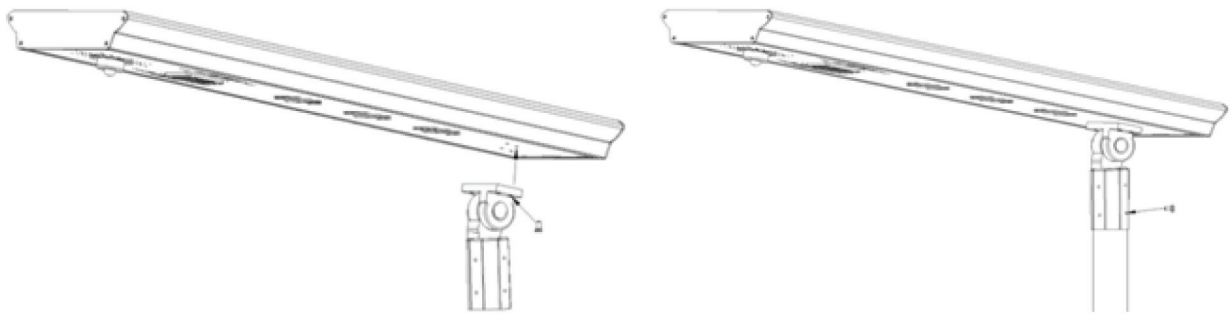


| Model No.                          | DEL-MPPT-10A  |
|------------------------------------|---|
| Rated Load Current                 | 10A   |
| System Voltage                     | 12V/24V AUTO  |
| Output voltage range               | 15V~60V   |
| Circuit conversion efficiency      | ≤95%  |
| MPPT tracking efficiency           | >99%  |
| Charging voltage limit             | 15.5V; ×2/24V   |
| Overvoltage protection             | 17.0V; ×2/24V   |
| Charging Below 0 °C                | Yes   |
| Charging Methods                   | 7.5V~15.5V; ×2/24V(14.6V by default)  |
| Overcharge Voltage                 | 7.5V~15.5V; ×2/24V(13.6V by default)  |
| Overcharge recovery voltage        | 7.5V~15.5V; ×2/24V(12.6V by default)  |
| Over-discharge recovery voltage    | 7.5V~15.5V; ×2/24V(11.0V by default)  |
| Output Current Range               | 70-4200mA(900mA by default)   |
| Output current accuracy            | ±3% or ±30 mA   |
| Light control voltage              | 5V~15V; ×2/24V(10.0V by default)  |
| Light control on time delay        | 1~50min   |
| Light control off time delay       | 1min  |
| Operating temperature              | -40℃ ~+60℃;   |
| Inside over-temperature protection | 70℃ to 85 °C: progressively decreases power; over 85 °C: shuts down charging or the load.   |
| Protection functions               | 1) IP68 waterproof and dustproof;<br>2) solar panel and battery reverse-connection protection;<br>3) inside overheat protection;<br>4) solar panel overvoltage and short-circuit protection;<br>5) overcharge and over-discharge protection;<br>6) nighttime reverse-charging protection;<br>7) solar panel TVS protection;<br>8) load short-circuit and open-circuit protection;<br>9) battery open-circuit protection |



## INSTALLATION GUIDE:

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Use 4 screws each to fix the support on the lamp and fix the lamp on the pole.

## OPERATION METHOD:

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When you press on the switch bottom, the lamp will start to work. That is all. It is easy to operate without any other operation.

## INSTALLATION INSTRUCTION:

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- Integrated solar led street light cannot work without sunshine charging, please select the suitable product model according to the local sunshine radiation and the annual total radiation.
- Integrated solar led street light adopts the long life Lithium battery for storing energy, charging temperature at day time is between:  $0^{\circ}\text{C}\sim+65^{\circ}\text{C}$ , when temperature goes lower than  $0^{\circ}\text{C}$ , the control system will stop automatically to protect the battery, and it will revive to charge the battery while temperature goes higher than  $0^{\circ}\text{C}$ . Discharging temperature at night is between:  $-20^{\circ}\text{C}\sim+65^{\circ}\text{C}$ , any ambient beyond will bring damage to the battery. Please confirm your local extreme temperature is suitable for above while selecting the street light.
- Battery of the “integrated solar led street light” can be stored for 6 months long after full charged, and please examine, charge it periodically after long time transportation to prevent damage.
- While installed in Northern Hemisphere, please make sure the surface of the solar panel to be facing the South to collect maximum sunshine radiation, while installed in Southern Hemisphere, please make sure the surface of the solar panel to be facing the North to collect maximum sunshine radiation. At the same tie please keep it away from any shadow of house, trees etc.
- Keep cleaning the surface of the integrated solar led street light with normal detergent to get maximum power generation, clean the dust or tree leaves or any grease.

## CAUTIONS:

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1. If you do not use the lamp for a long time, please does not leave the switch bottom on in case of low battery.
2. Without the guidance of trained technical staff, please do not open the product yourself.
3. Please avoid trees, building and other blocks for the installation application.
4. When installing or transporting it, please try to avoid collision and handle with care.