## Part B

# LED DRIVER SPECIFICATION


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ISO 9001-2008
CERTIFIED COMPANY

# Material Specifications/Requirements

| CHARACTERISTICS | DESCRIPTION |
|---|---|
| Supply Source | 90 - 270 Vac,50 Hz |
| Power | 20W, 45W, 60W, 100W - (tolerance +/- 10% allowable) |
| Total Lumen output of product | More than 100 Lumens/watt |
| Make of LED (Efficacy 130 lumens/watt or above) | NICHIA / OSRAM / SEOUL / PHILIPS / LUMILED / CREE / EDISON |
| Usage hours | 12 hrs per day |
| Power factor | 0.95 (min.) Lag |
| Total Harmonic Distortion(V) | Less than 10% |
| Total Harmonic Distortion(I) | Less than 10% |
| Color Rendering Index(CRI) | More than 80% |
| Correlated Color Temperature(CCT) | Cool white:4000 K to 6000 K<br>Warm White:2000 K to 3000 K |
| Surge protection | 6 kV |
| Operating ambient temperature | -25 Deg C to 65 Deg C |
| High Voltage withstanding | 440V AC (for min. 3 hours) |
| IP | For outdoor – IP 65/66,<br>For indoor - IP 60 |
| Life expectancy | More than 50,000 glow hours at $35^0$C constant temperature with 70%lumen maintenance. |
| Casing/Heat sink | Pressure Die cast Aluminum |
| Warranty | 3 years minimum from the date of Commissioning |

**1. LED Section**

1. PCB: MCPCB, Minimum industrial grade.
2. LED circuit with reverse polarity protection.
3. Thermal interface material between MCPCB and heat sink.
4. For street lights, optics-Class 3.
5. Battery charging and discharging LED Indicators for Solar applications.

**2. Driver Section**

1. PCB: Minimum industrial grade.
2. IP 20 based serviceable enclosure.
3. Separate power and control grounds preferable.
4. Short circuit, overload, under voltage & over voltage protection.
5. Constant Current output.
6. Efficiency: more than 90%.
7. Driver dimension preferable for 20W – 750mm*450mm*30mm.

**Solar application**

a. 12VDC output with Microcontroller based solution.
b. Automatic dusk to dawn control.
   If Timer based circuit (working hours-06:30pm to 06:00am) is available.
c. CCU – PWM based separate circuit.
d. Auto dimming on low battery condition.

**Normal application**

1. Separate Sensor circuit for automatic control.
   If Timer based circuit (working hours-06:30pm to 06:00am) is available
2. Separate Surge protection circuit.

## 9. Product certification required

1. IEC would be more appreciable.
2. BIS Certification (IS: 16101-16108).
3. LM -79 Certificate from any approved Lab.
4. LM-80 Certification from the LED manufacturer.
5. Test certificate from any NABL approved lab for IP65/IP66, Total Power, LED operating Current (Power drive current), Power factor, Total harmonic distortion (THD), Efficacy.
6. Photo biological safety certificate.
7. Test certificate from any approved lab for High voltage withstanding capacity:440 Volt for minimum 3 hrs.
8. Surge Test IEC 61000- 4-5 for 6.0 kV.