

UVTOP280

Absolute Maximum Ratings at $T_A = 25\text{ }^\circ\text{C}$

| Parameter | Unit | Maximum Rated Value |
|---|------------------|---------------------|
| Power Dissipation, DC | mW | 180 (TO-39) |
| Forward Current, DC | mA | 30 |
| Pulse Forward Current (Duty Factor = 1%, Frequency = 1KHz) | mA | 200 |
| Reverse Voltage | V | 6 |
| Operating Temperature Range | $^\circ\text{C}$ | - 30 to + 55 |
| Storage Temperature | $^\circ\text{C}$ | - 30 to +100 |

Electro-Optical Characteristics at $T_A = 25\text{ }^\circ\text{C}$, $I_F = 20\text{ mA}$

| Peak Wavelength λ_p (nm) | PKG Type | Lens Type | Part Number | Optical Power P_{out} (μW) | | Forward Voltage V_F (V) | | Viewing Angle $2\theta_{1/2}$ ($^\circ$) | FWHM (nm) | |
|-------------------------------------|----------|-----------|----------------------|--|------|------------------------------|-----|---|-----------|-----|
| | | | | Min | Typ. | Typ. | Max | | Typ. | Max |
| 285 Min: 280 nm Max: 290 nm | TO-18 | FW | UVTOP280 TO18FW | 300 | 500 | 5.8 | 7.0 | 120 | 12 | 15 |
| | | BL | UVTOP280 TO18BL | 300 | 500 | 5.8 | 7.0 | 10 | 12 | 15 |
| | TO-39 | FW | UVTOP280 TO39FW | 480 | 800 | 5.8 | 7.0 | 120 | 12 | 15 |
| | | HS | UVTOP280 TO39HS | 360 | 600 | 5.8 | 7.0 | 7 | 12 | 15 |
| | | BL | UVTOP280 TO39BL | 360 | 600 | 5.8 | 7.0 | 7 | 12 | 15 |
| | | TFW | UVTOP280 TO39TFW | 180 | 300 | 5.8 | 7.0 | 120 | 12 | 15 |
| | | TFWR | UVTOP280 TO39TFWR | 240 | 400 | 5.8 | 7.0 | 120 | 12 | 15 |

Notes:

Peak wavelength measurement tolerance is +/- 2 nm

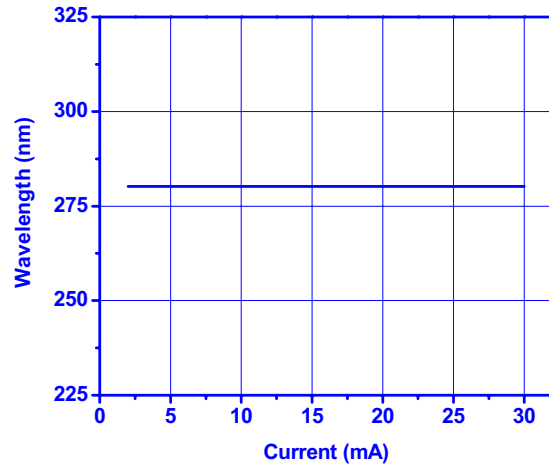
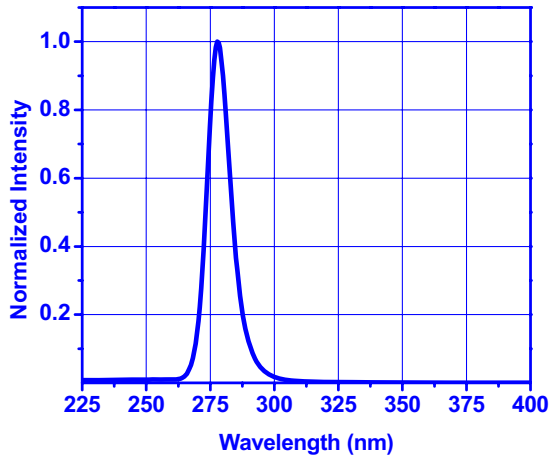
Optical power output measurement tolerance is +/- 10%

Forward voltage measurement tolerance is +/- 2%

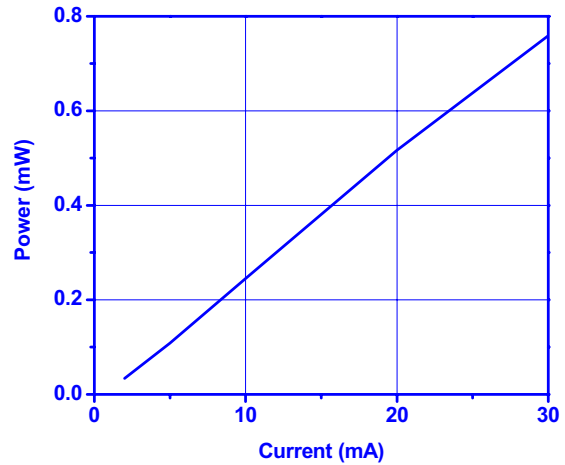
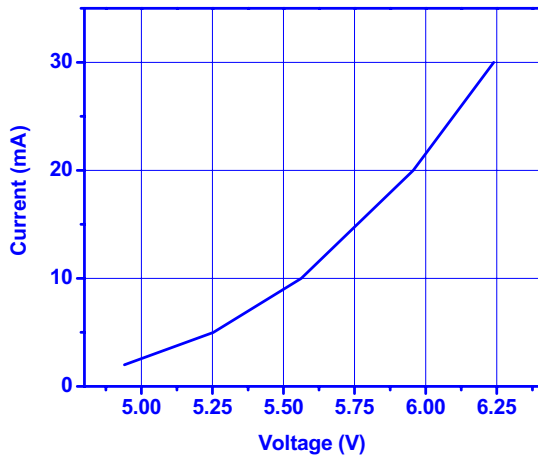


- This UV LED radiates intense UV light during operation. Do not expose any part of a human body to UV light. This can be harmful especially to the eyes and skin, even for a brief period due to the intense UV light.
- If viewing the UV light is necessary, please use UV filtered glasses to avoid damage by the UV light.
- If the UV LED in your product might be viewed directly, please affix a caution label to your production to that effect.

Typical Spectral Characteristics



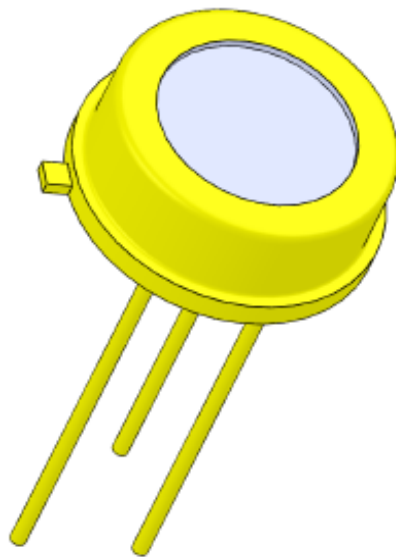
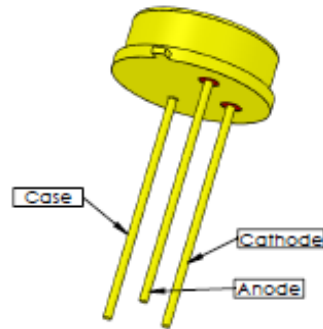
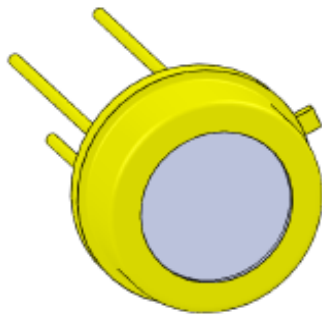
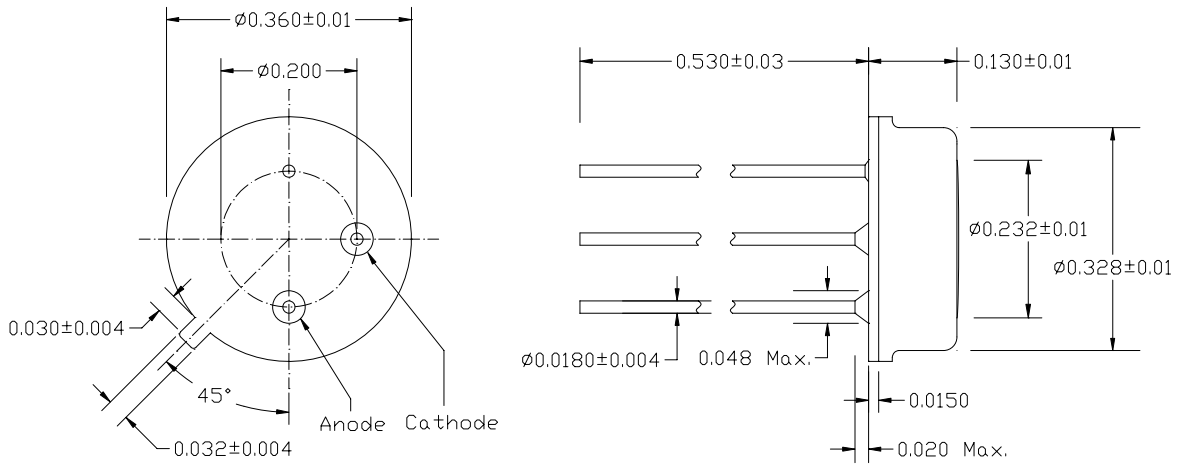
Typical LED Performance at $T_A = 25^\circ\text{C}$ (UVTOP280TO39BL)



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Outline Drawings

TO-39 with Flat Window



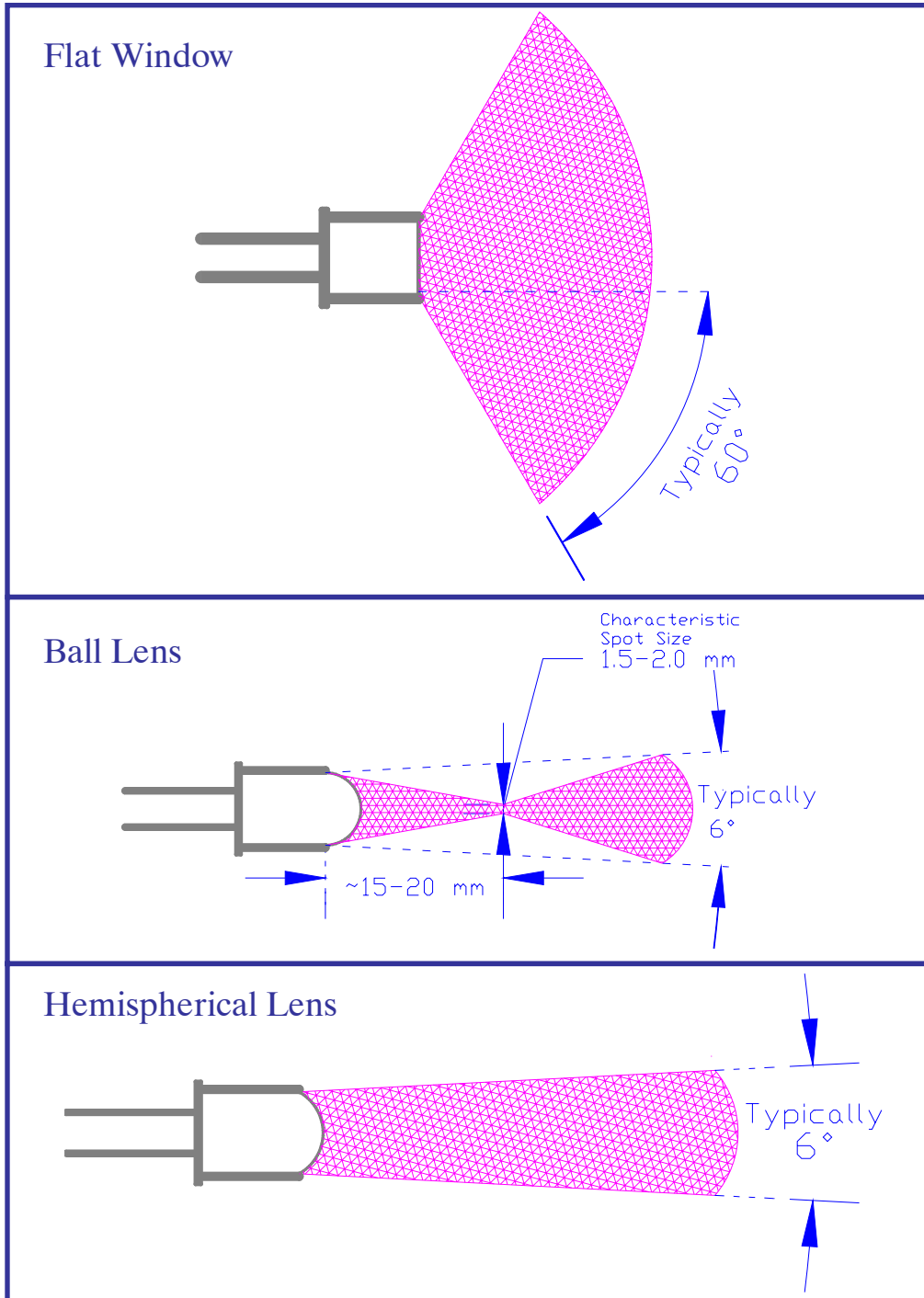
Notes: All dimensions are in inches. Dimensions without tolerances are nominal.

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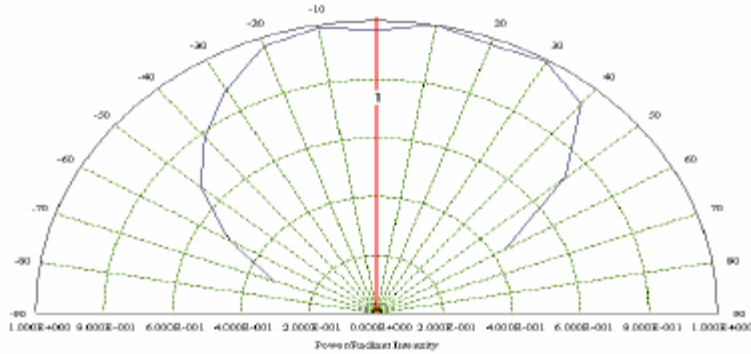
Typical Emission Pattern



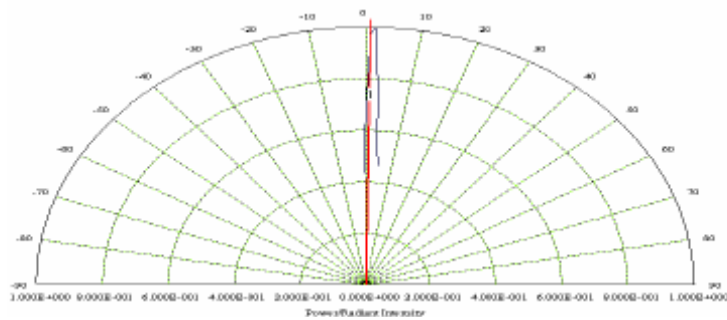
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Typical Angular Diagrams

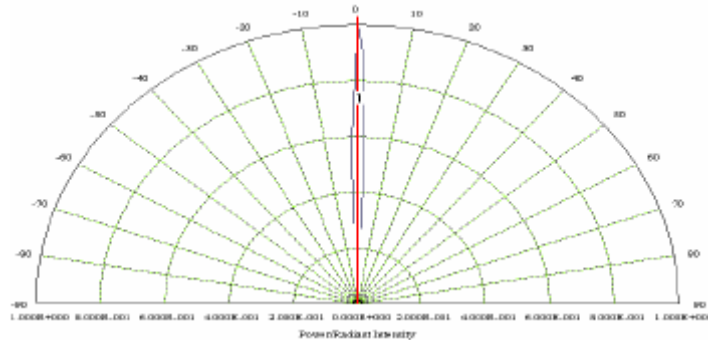
Flat Window



Ball Lens



Hemispherical Lens



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Recommended Soldering Conditions

Dip soldering (for TO-18, TO-39, TO-5 only):

| | |
|-------------------------------|---|
| Pre –heat time, Max. | 30 seconds |
| Solder Bath temperature, Max. | 190 °C |
| Dipping time, Max. | 5 seconds |
| Dipping Positioning on leads | No closer than 3 mm from the base of the header |

Soldering 1 (for TO-18, TO-39, TO-5):

| | |
|-----------------------------------|---|
| Temperature of solder point, Max. | 190 °C |
| Soldering time, Max. | 5 seconds |
| Soldering position on leads | No closer than 3 mm from the base of the header |

Soldering 2 (TO-3, TO-3-TEC, TO-5-TEC, TO-18-fiber):

| | |
|-----------------------------------|---|
| Temperature of solder point, Max. | 160 °C |
| Soldering time, Max. | 5 seconds |
| Soldering position on leads | No closer than 3 mm from the base of the header |
| Soldering to header/cap/ferrule | Will destroy the device |

Following conditions should be avoided during soldering: Overheating, Static Electricity, Mechanical Shock, Vibration, Ultrasonic Shock, Mechanical Damage and Contamination.

- Soldering must be done to the package leads only. Soldering to the LED header or cap will destroy the device.
- If clamping of LED is required, mechanical stress on the LED should be minimized.
- Soldering point must be no closer than 3 mm from the base of the header.
- Mechanical stress, shock and vibration must be avoided during soldering.
- It is not recommended to mount the LED directly on a PC board or a heat sink by soldering to the LED header or cap.
- Only non-corrosive flux must be used.
- Do not use dip soldering for TO-3 based, TO-18-fiber and TO-5-TEC packages.
- If it is necessary to cut the device leads, do so at room temperature using the ESD protected tool only. Do not apply any stress to the leads when heated.
- Do not apply current to the device until it cools down to room temperature after soldering.
- Failure to follow the recommendations may cause breakdown of the LED.



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