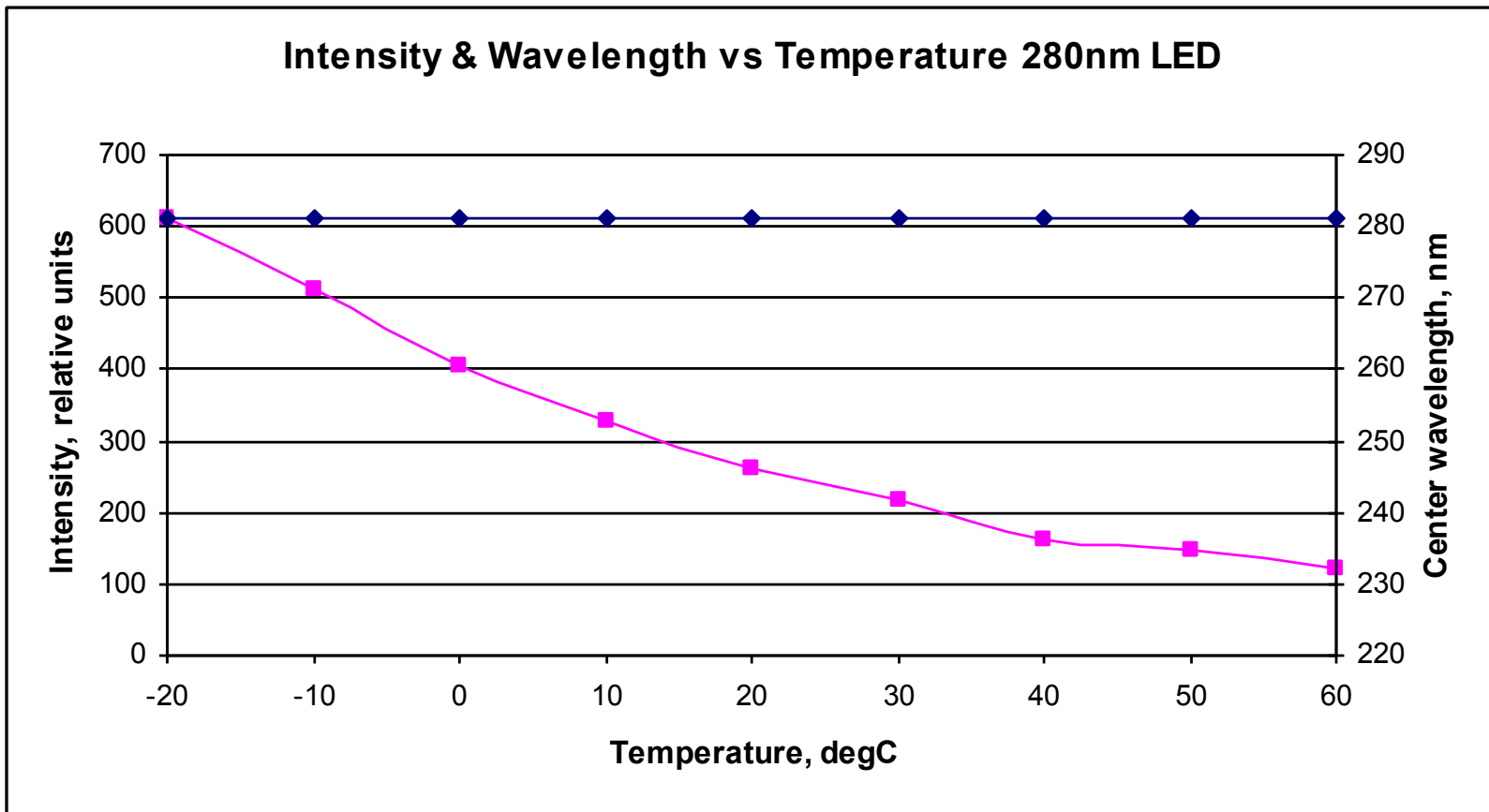


# 280nm LED performance information



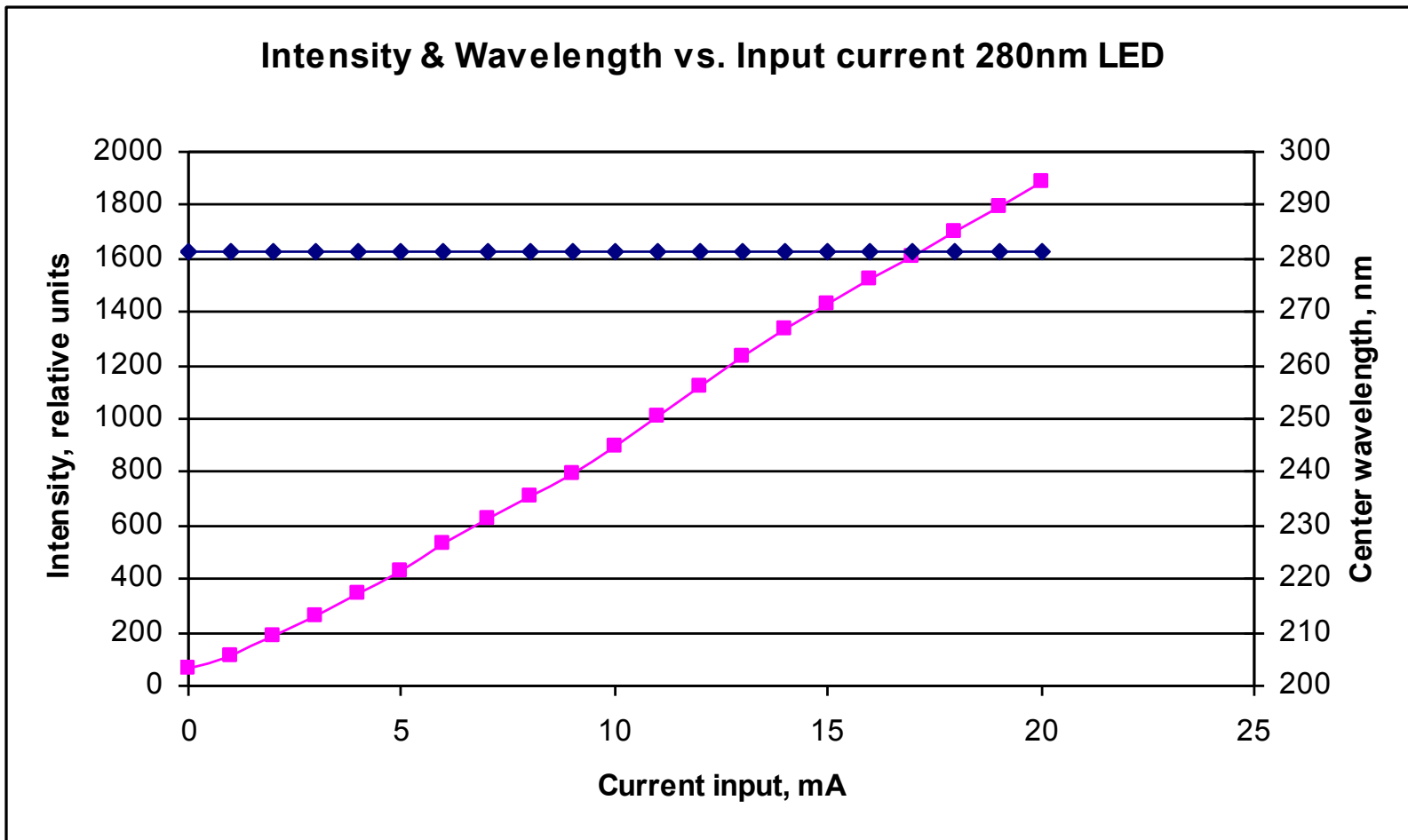
Intensity and wavelength stability vs Temperature for a fixed current of 10mA



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# 280nm LED performance information



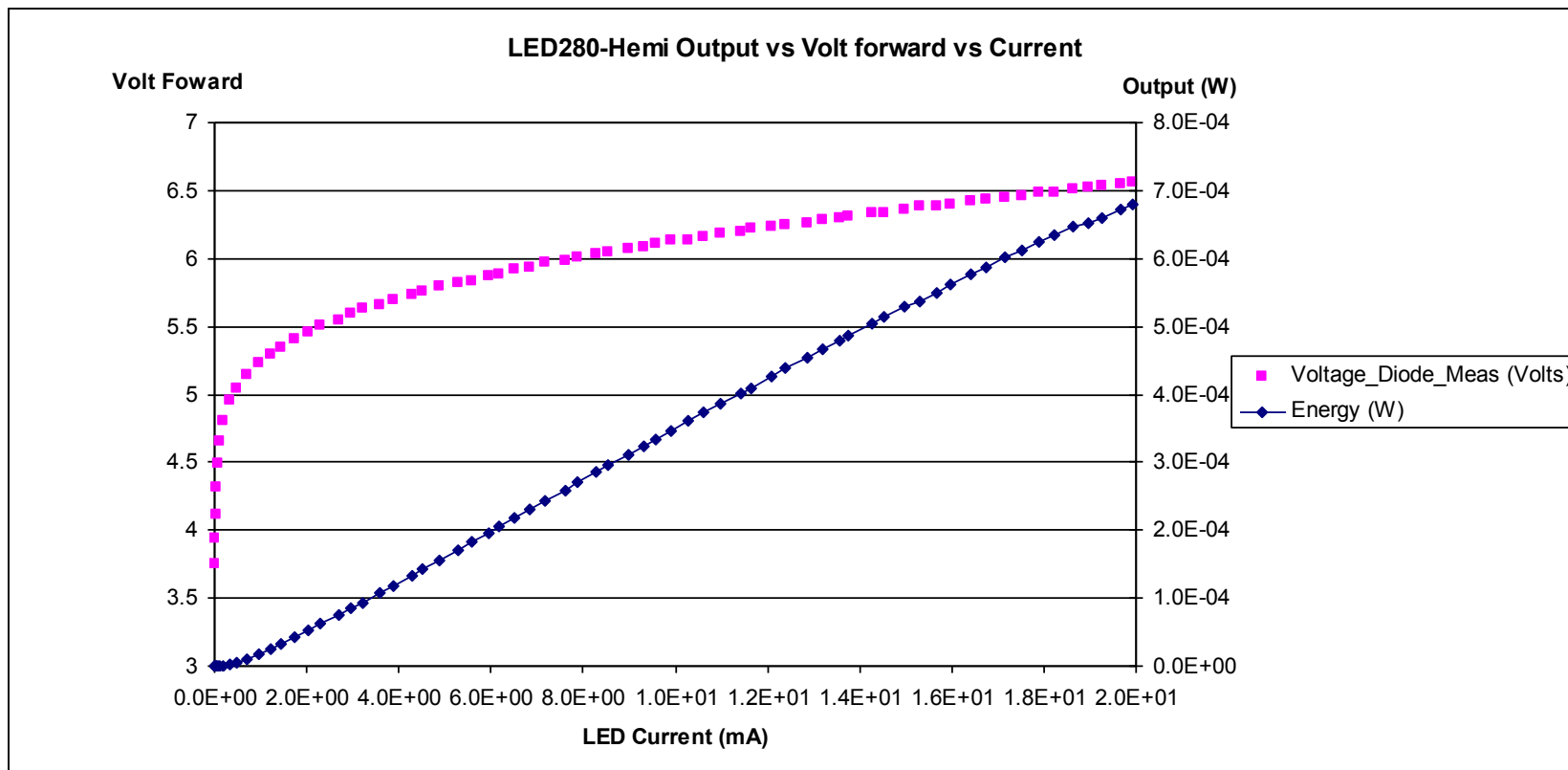
Intensity and Wavelength vs input current at a fixed temperature of 25C



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# UVLED280 output vs current vs forward bias voltage



This plot shows the Forward Voltage vs. Input Current.  
Also shows output as a function of forward Bias current.  
All this data is at Room Temperature operation

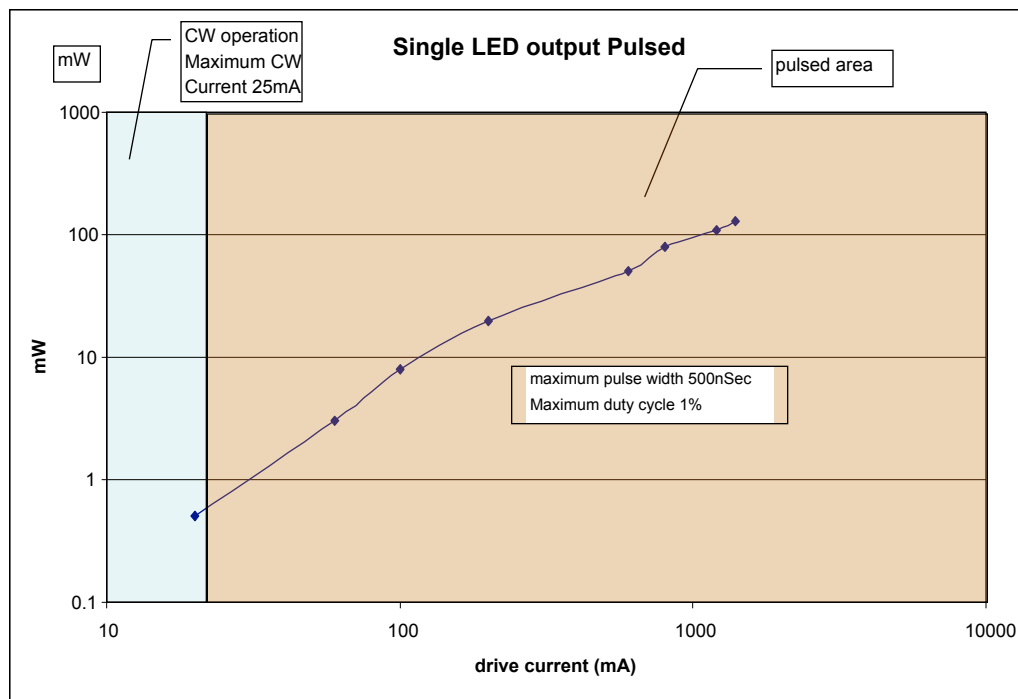


**PHOTON**  
S Y S T E M S

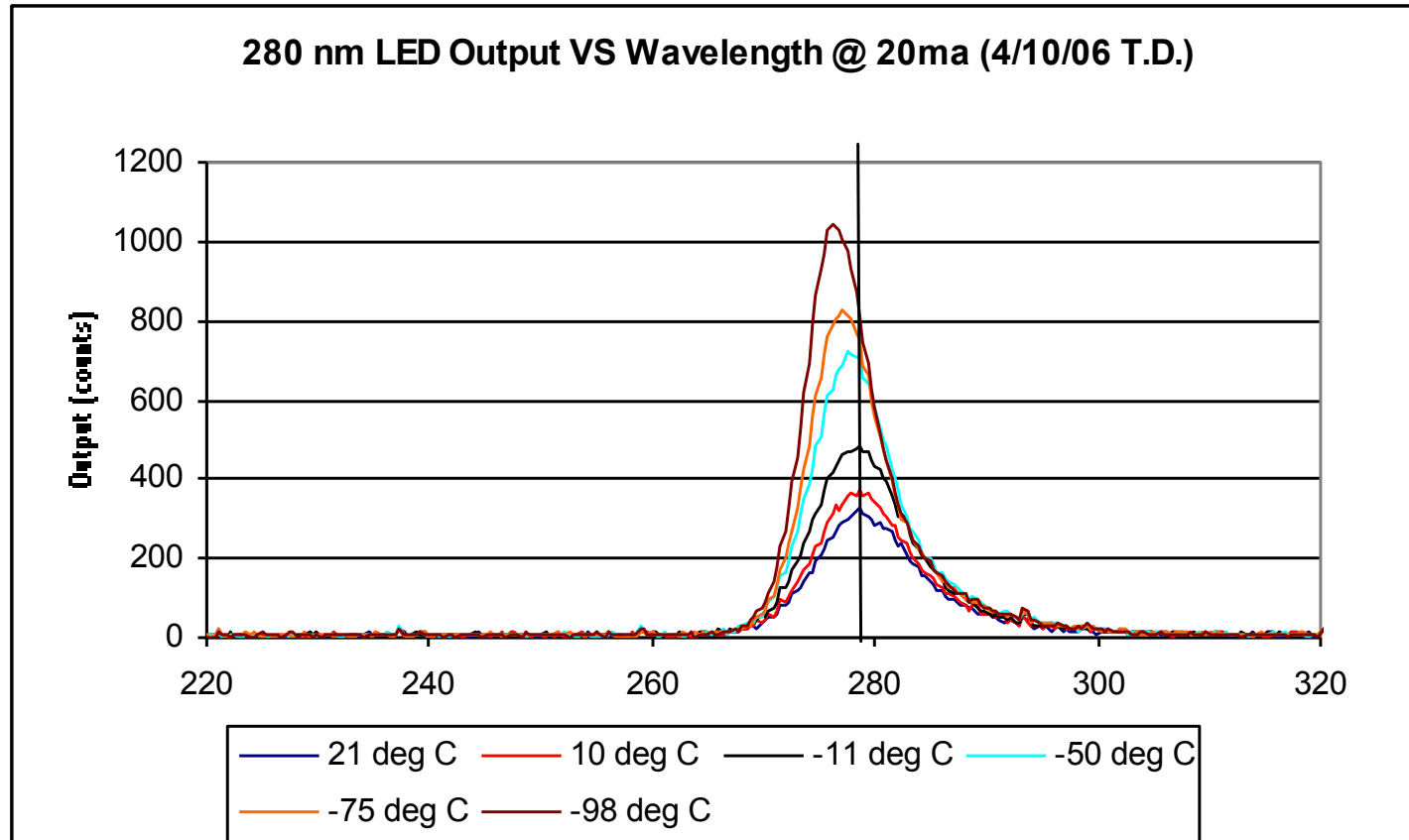
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# 280nm LED Performance

## CW and Pulsed operation



## UVLED280, Wavelength and output vs Temperature



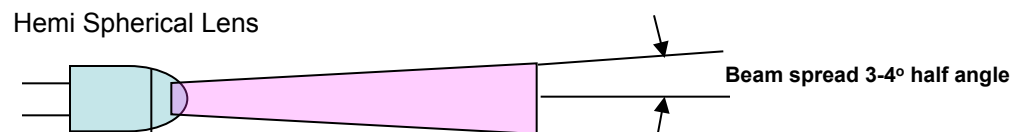
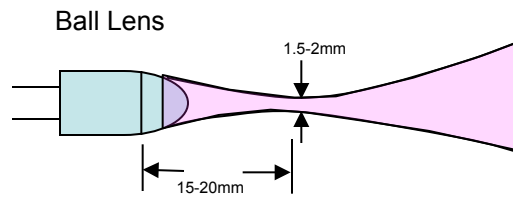
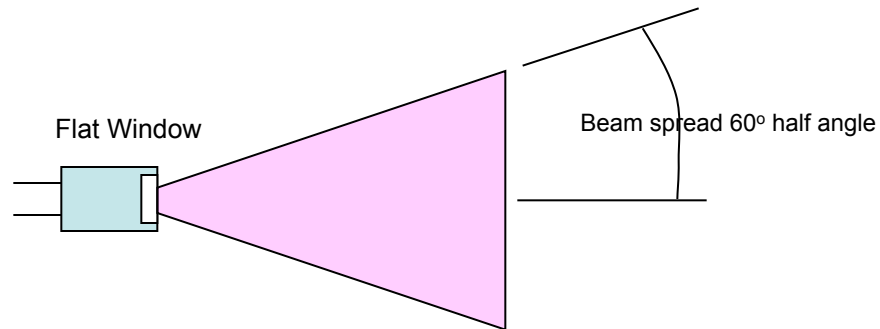
Data on a 280nm LED. The output improved about 350% when the LED was cooled from room temperature to  $-98^{\circ}\text{C}$ . There was also a shift to deeper UV by over 5nm.



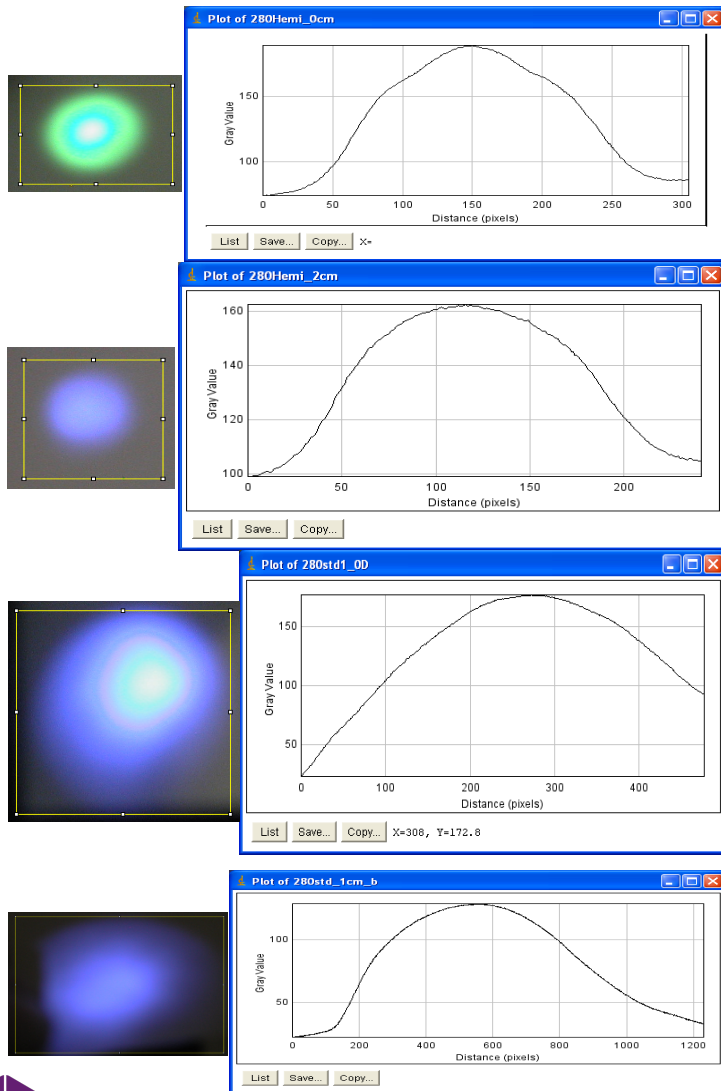
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# Beam Patterns



# Beam Patterns



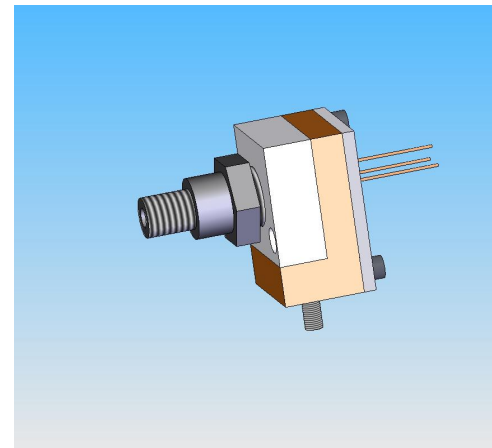
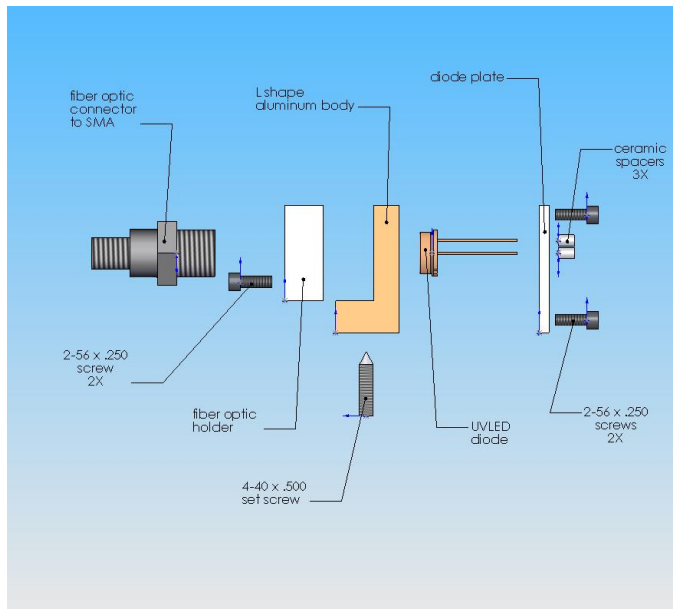
UVLED280-Hemi at 0.5cm from surface of LED

UVLED280-Hemi at 2.0cm from surface of LED

UVLED280 at surface of LED

UVLED280 at 1.0cm from surface of LED

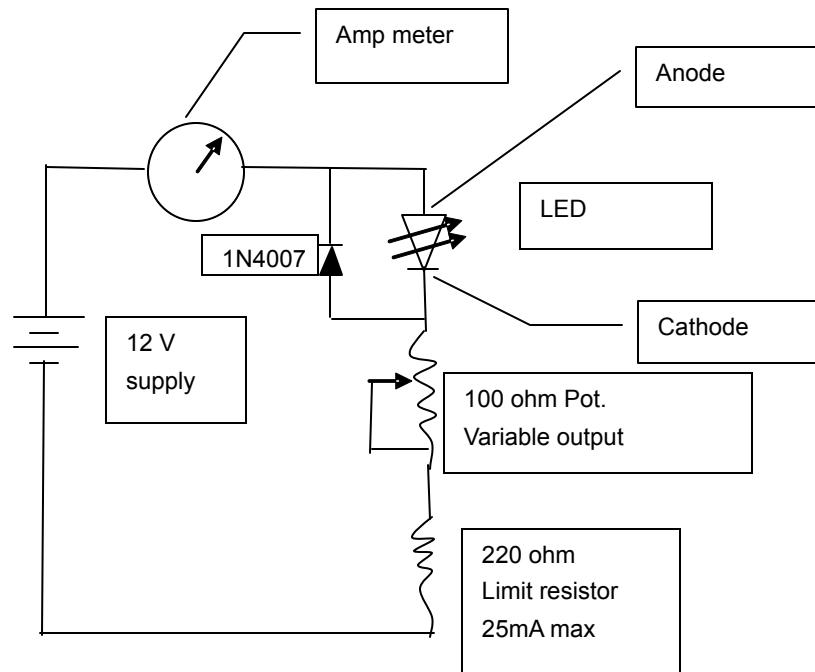
# SMA Fiber mount





# Typical Deep UV LED Driver Circuit

Drive circuit



•Optimal drive current is 5-20mA with a max CW of 25mA, with a 12VDC Supply and a 220ohm limit resistor the Max current for the typical 280nm LED is 25mA and the typical 255nm LED is 23mA.

•For 9 VDC Battery operation use a 100ohm limit resistor and monitor the current to set the variable resistance for the desired output operation.



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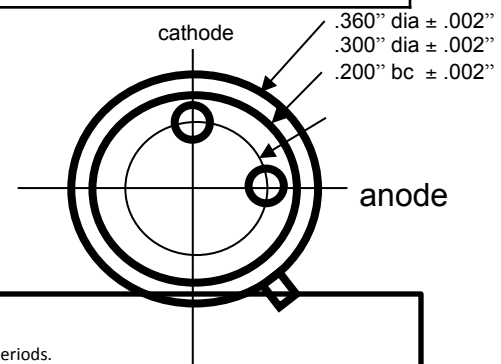
## Deep UV Semiconductor Light Emitting Diodes (LEDs)

Emission Range: 250nm to 350nm

LED devices between 250 nm and 350 nm are available now.

Specifications	Model UV LED-280	Model UV LED-255
CW output power:	>0.5 mW	>0.1 mW
Center wavelength:	280 ± 10 nm	255 ± 10 nm
Spectral linewidth:	<20nm FWHM	<20nm FWHM
CW Drive current, forward:	<25 mA, max.	<25 mA, max.
Reverse current:	<100uA max.	<100uA max.
Operating voltage, reverse:	6 VDC	
Forward voltage:	7.5V max.	
Max.pulsed drive current:	200 mA at 1% duty cycle(50nsec max width)	
Package:	TO-39 hermetic package, per diagram below	
Window/Lens choices:	flat, hemispheric, or ball lens window	

Window/Lens style	Beam Pattern
Flat window	60° wide area lambertian pattern
Hermispheric lens	6° divergent beam pattern
Ball lens	2mm dia. spot at 20mm



Warning

- This UV LED radiates intense Ultraviolet Light during operation.
- Do not expose any part of the human body especially eyes to the UV Radiation even for brief periods.
- If viewing the UV Light please use appropriate UV filter eyewear to avoid exposure to direct UV Radiation.
- If the UV LED is to be viewed directly in your application please affix an appropriate caution label to the produce indicating the danger of UV Light.



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## Recommended Soldering and handling procedures

1. Following factors should be avoided during the LED device mounting: Over heating, static, mechanical shock, vibration and ultra-sonic shock, damage and contamination.
2. Solder the wires to the package leads only. Soldering to header or cap will destroy the device.
3. The Clamping of the LED during soldering is required as minimum stress to the devise in clamps should be applied.
4. Soldering point to leads must not be closer than 3mm to the header.
5. During the soldering period no mechanical stress should be applied to any of the package parts: leads, header, and cap.
6. The LED device is strongly not recommended to mount on PC boards or heat sink by soldering to the Header or Cap.
7. Use non-corrosive flux only
8. Do not use dip soldering for TO-3 based, to 19 fiber and TO-5-TEC packages.
9. If it is necessary to cut the device leads, do so at room temperature using a static protected tool only.
10. Do not apply current to the device until it has cooled down to room temperature after soldering.
11. Deviation for these recommendations can cause the LED to Fail.
12. Recommended soldering conditions:

<b>Dip Soldering (for TO-18, TO-39 and TO-5 only)</b>	
<b>Pre-heat time Max</b>	<b>30s</b>
<b>Solder Bath temperature, max</b>	<b>190oC</b>
<b>Dipping time, max</b>	<b>5sec</b>
<b>Dipping Positioning on leads</b>	<b>No Closer than 3mm to header</b>
<b>Soldering 1 (for TO-18, To-39, TO-5)</b>	
<b>Temperature of soldering point, max</b>	<b>190oC</b>
<b>Soldering time, max</b>	<b>5sec</b>
<b>Soldering position on leads</b>	<b>No Closer than 3mm to header</b>
<b>Soldering 2 (TO-3, TO-3-TEC, TO-5-TEC, TO-18-fiber)</b>	
<b>Temperature of soldering point, max</b>	<b>160oC</b>
<b>Soldering time, max</b>	<b>5sec</b>
<b>Soldering position on leads</b>	<b>No Closer than 3mm to header</b>
<b>Soldering to header/cap/ferrule</b>	<b>WILL DESTROY THE DEVICE</b>



# T0-39 specifications

T0-39 Metal Can Package



T0-39  
Metal Can Package

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG

All dimensions are in mm.



PIN CONFIGURATION  
1. EMITTER  
2. BASE  
3. COLLECTOR