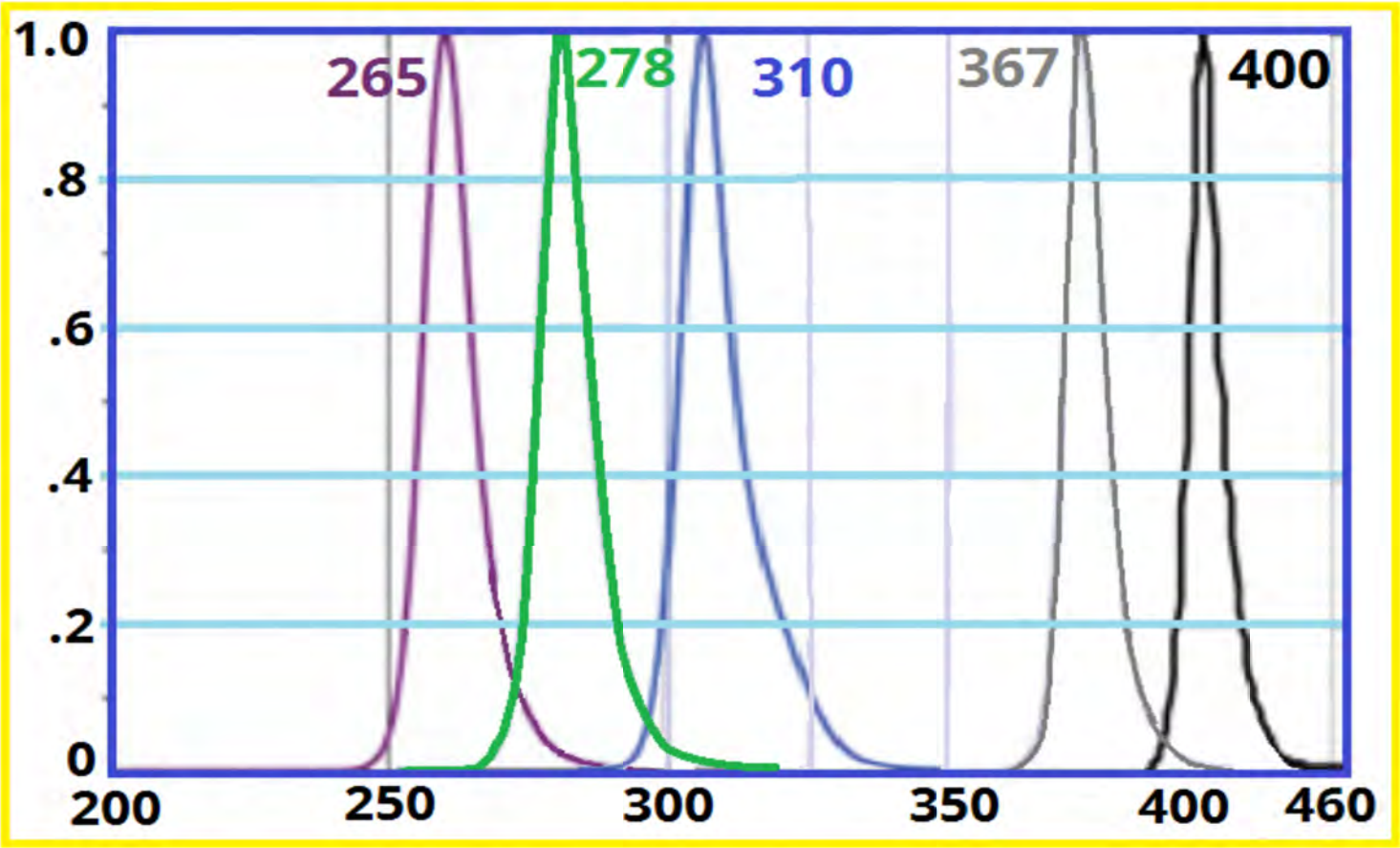
UV LED DATASHEET

ILT UV LED's with Silicon Lens come in five versions. UVA (400nm & 365nm), UVB (305 nm), UVC (273nm & 265 nm).

APPLICATIONS:
UVC & UVB: Flourescent spectroscopy, bio-analysis/detection, phototherapy, sterilization/germicidal, research and more.
UVA: Curing, security/banknote, lithography, photoresist, tanning, phototherapy, optical indicator and more.

SPECTRAL OUTPUT: Typical deviation from the peak is +/- 2nm



CAUTION: UV LED'S ARE ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

Note: Special handling is required for successful use of UV LED's see pages 4-5.

SPECIFICATIONS:

Typical Characteristics of E265SL @T_a=25^{0}C, 20 mA					Maximum Ratings@T_a=25^{0}C		
	MIN.	TYP.	MAX.	UNITS		MAX.	UNITS
FORWARD VOLTAGE	5	6.6		V	**INPUT POWER**	0.12	W
OPTICAL POWER	0.2	0.35	0.5	mW	**CURRENT**	20	mA
PEAK WAVELENGTH	260	265	270	λp	**JUNTION TEMP.**	115	^{0}C
FWHM	9	10		nm	**OPERATING TEMP.**	-20 to +45	^{0}C
LIFE HOURS		1000		hrs	**STORAGE TEMP.**	-40 to +80	^{0}C
Temperature of Aluminum PCB do not exceed 45^{0}C					**SOLDERING TEMP.**	5 Sec@350	^{0}C

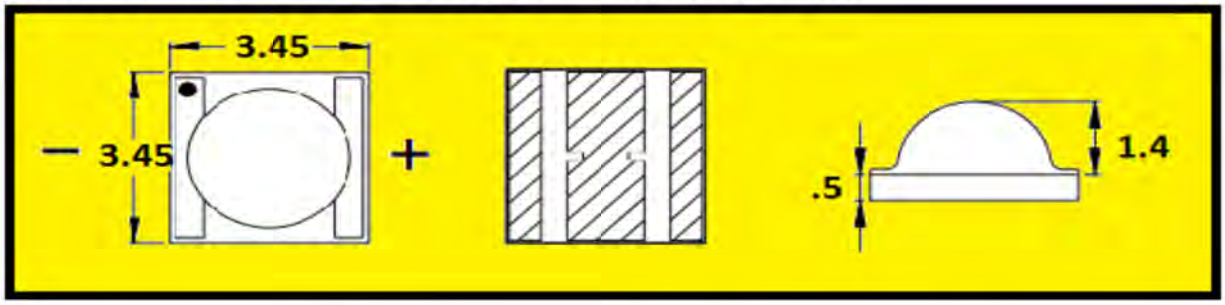
Not Available - Typical Characteristics of E273SL @T_a=25^{0}C, 20 mA					Maximum Ratings@T_a=25^{0}C		
	MIN.	TYP.	MAX.	UNITS		MAX.	UNITS
FORWARD VOLTAGE	5.5	6		V	**INPUT POWER**	0.12	W
OPTICAL POWER	0.9	1		mW	**CURRENT**	20	mA
PEAK WAVELENGTH	273	278	283	λp	**JUNTION TEMP.**	115	^{0}C
FWHM	9	10		nm	**OPERATING TEMP.**	-20 to +45	^{0}C
LIFE HOURS		1000		hrs	**STORAGE TEMP.**	-40 to +80	^{0}C
Temperature of Aluminum PCB do not exceed 45^{0}C					**SOLDERING TEMP.**	5 Sec@350	^{0}C

Typical Characteristics of E305SL @T_a=25^{0}C, 20mA					Maximum Ratings@T_a=25^{0}C		
	MIN.	TYP.	MAX.	UNITS		MAX.	UNITS
FORWARD VOLTAGE	4	5.5	7	V	**INPUT POWER**	0.12	W
OPTICAL POWER	0.5	1	1.5	mW	**CURRENT**	20	mA
PEAK WAVELENGTH	305	310	315	λp	**JUNTION TEMP.**	115	^{0}C
FWHM	8	10		nm	**OPERATING TEMP.**	-20 to +45	^{0}C
LIFE HOURS		1000		hrs	**STORAGE TEMP.**	-40 to +80	^{0}C
Temperature of Aluminum PCB do not exceed 45^{0}C					**SOLDERING TEMP.**	5 Sec@350	^{0}C

Typical* Characteristics *of E365SL @T_a=25^{0}C, 350 mA					Maximum Ratings@T_a=25^{0}C		
	MIN.	TYP.	MAX.	UNITS		MAX.	UNITS
FORWARD VOLTAGE	3.3	3.4		V	**INPUT POWER**	1.31	W
OPTICAL POWER	120	135		mW	**CURRENT**	350	mA
PEAK WAVELENGTH	361	367	371	λp	**JUNTION TEMP.**	115	^{0}C
FWHM	9	10		nm	**OPERATING TEMP.**	-20 to +45	^{0}C
LIFE HOURS	1500	2000		hrs	**STORAGE TEMP.**	-40 to +80	^{0}C
Temperature of Aluminum PCB do not exceed 45^{0}C					**SOLDERING TEMP.**	5 Sec@350	^{0}C

Typical* Characteristics *of E400SL @T_a=25^{0}C, 350 mA					Maximum Ratings@T_a=25^{0}C		
	MIN.	TYP.	MAX.	UNITS		MAX.	UNITS
FORWARD VOLTAGE	3.3	3.4	3.8	V	**INPUT POWER**	1.2	W
OPTICAL POWER	530	557	560	mW	**CURRENT**	350	mA
PEAK WAVELENGTH	395	400	405	λp	**JUNTION TEMP.**	115	^{0}C
FWHM	8	10	13	nm	**OPERATING TEMP.**	-20 to +45	^{0}C
LIFE HOURS	1500	2000		hrs	**STORAGE TEMP.**	-40 to +80	^{0}C
Temperature of Aluminum PCB do not exceed 45^{0}C					**SOLDERING TEMP.**	5 Sec@350	^{0}C

DIMENSIONS: 3.45 L x 3.45 W x 1.9 H, PCB .5 Silicon top 1.4 mm



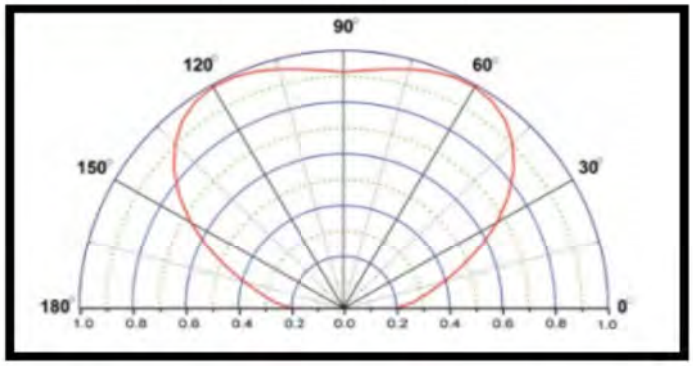
LIGHT DISTRIBUTION: See Graph

Emission Angle: 120 Deg. C

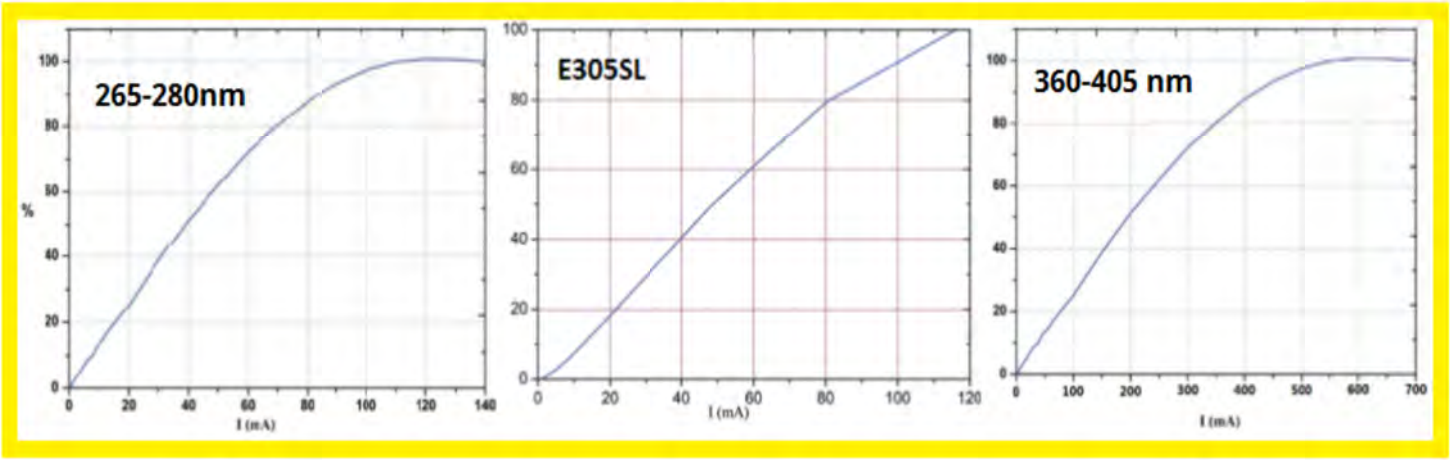
Effective vertical emission distance: 1-3cm

Effective emission area: $9cm^2$-$84cm^2$

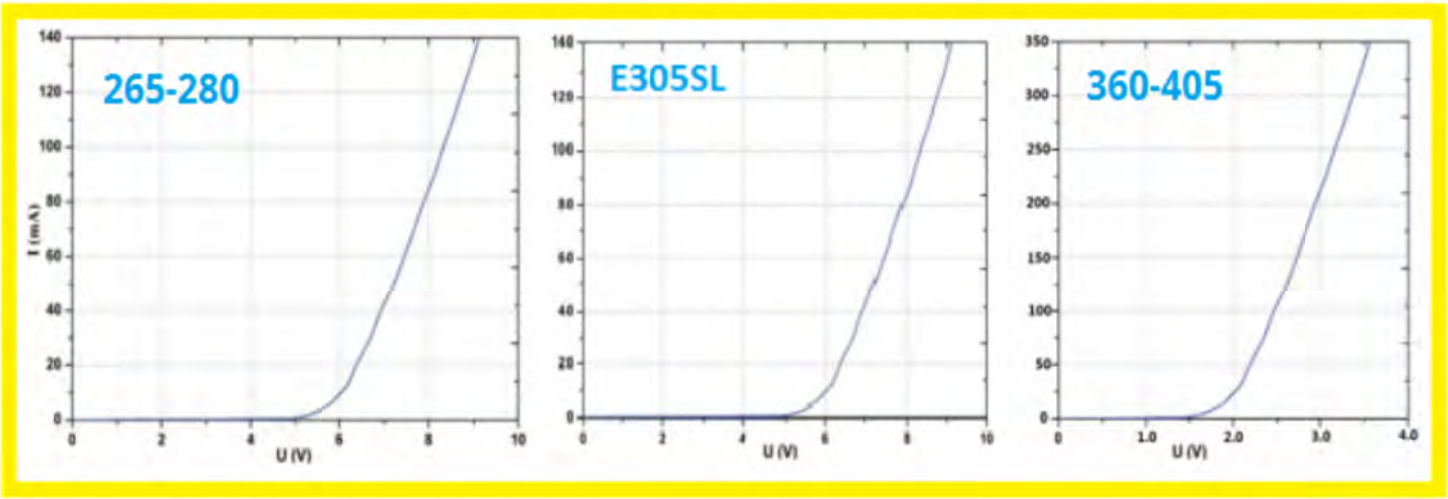
Center of the emission area: Center of the package.



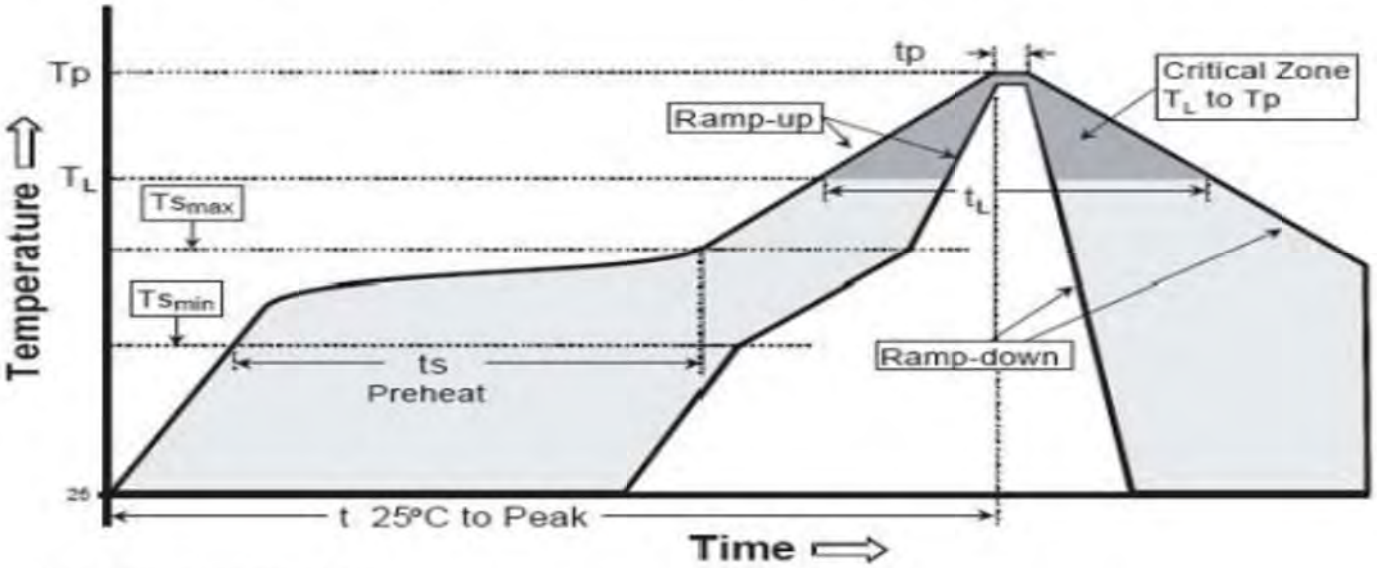
Po vs If



U-I

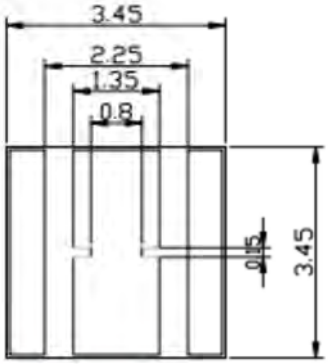


SOLDERING: UV LED'S ARE DESIGNED FOR REFLOW SOLDERING. See warnings below



SOLDERING WARNINGS:

1. Wave peak and soak-stannum soldering etc. is not suitable for this products.
2. Reflow soldering should not be done more than once.
3. The peak reflow temperature is 180 +10℃, do not exceed 40 seconds
4. Repair should not be performed after the LEDs have been soldered. When repair is unavoidable, suitable tools are required.
5. Do not put stress on the LEDs during heating.
6. Do not warp the LED.
7. Do not stack PCBS or assemblies-Nothing should rest on the LED lens.



Using Heat table to mount LED onto PCB.

1. Use syringe to apply tin onto the solder pad of the PCB.
2. Use tweezers to carefully place the LED onto to tin on the solder pad.
3. Place the mounted PCB/LED onto heat plate at proper temperature to warm tin

(Note: in example tin melt occurs at 237 and we have set heat to 250)

4. Allow tin to melt (5-10 seconds only) **Use caution: Over heating will cause PCB to oxidize.**
5. Carefully remove from heat using tweezers and allow to cool slowly.

HEAT DISSIPATION:

UV LED SHOULD BE MOUNTED ONTO A HEATSINK TO PREVENT DAMAGE.
The UV LED's mounted on aluminum metal-core printed circuit boards can be lighted directly, but we do not recommend this. Lighting the high power products for more than a few seconds without the appropriate heat dissipation equipment can cause permanent damage.

STORAGE:

LED's should be stored in dry location, in a sealed package, with a desiccant. The storage temperature is 5 to 30℃ with a maximum of 60% humidity.

HANDLING:

1. Soldering should be done right after opening the package (or within 24Hrs). If the package has been opened longer than 1 week or if the desiccants has changed color, components should be dried for 10-12 Hrs at 60± 5℃.
2. Avoid rapid cooling after soldering.
3. Avoid mechanical force, shock and excess vibration during cooling process
4. This device should not be used in any fluid such as water, oil, organic solvent etc. If washing is required isopropyl alcohol should be used.
5. Components should not be mounted on warped PCB.
6. Do not use metal suction nozzle. Rubber or silica gel suction nozzle is recommended.
7. Avoid touching Lens, especially with sharp metal tools such as tweezers.
8. Do not apply pressure diagonally on the silicone lens. 1000g impact will cause fatal damage.
9. Do not cover the silicone resin of the LEDs with other resin.
10 A 2 cm clearance between stacks of PCBs or assemblies containing the LEDs is recommended so that nothing abrades or rests on the LED lens. Force applied to the LED resin will damage LED.

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