



UVMAX335-15

- Deep Ultraviolet Light Emission Source
- 335 nm, 10-15 mW
- Multi chip LED array
- Thermistor
- TEC (optionally)
- TO3 metal can with SiO₂ glass lens
-  UV Curing, Optical Sensing



Description

UVMAX335 is a series of **AlGaN** based deep UV multi chip LED arrays, utilizing up to 4 parallel strings (common cathode) carrying up to 9 pcs of parallel connected chip dies each. **UVMAX335** features total optical output power of **10-15 mW** at a nominal current draw of 360mA, and typical emission wavelength of **340 nm**. It comes in hermetically sealed TO3 metal can package in hemispherical lens or flat glass window configuration, with **integrated thermistor**. **UVMAX335** is widely used for UV curing, optical sensing, and imaging of dyes, inks and markers. **UVMAX335** can optionally be equipped with an **integrated thermo electric cooler**.

Maximum Rating (T_{CASE} = 25°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation, DC*	P _D		4.3	W
Forward Current (T _A =25°C)	I _F		720	mA
Operating Temperature	T _{OPR}	- 30	+ 55	°C
Storage Temperature	T _{STG}	- 30	+ 100	°C
Soldering Temperature (max 5s)	T _{SOL}		+ 190	°C

* **Maximum dissipated power must not exceed 200mW without thermal management**

Electro-Optical Characteristics (T_{CASE} = 25°C, I_F = 360 mA)

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength* ¹	λ _P	335	340	345	nm
Spectral Width (FWHM)	Δλ		12	15	nm
Forward Voltage* ²	V _F	4.0	5.0	6.0	V
Radiated Power* ³	P _O	10		15	mW
Beam Angle (hemispherical lens)	2θ _{1/2}		35		deg.
Beam Angle (flat window)	2θ _{1/2}		120		deg.

*¹wavelength measurement tolerance: ± 2 nm

*²forward voltage measurement tolerance: ± 2 %

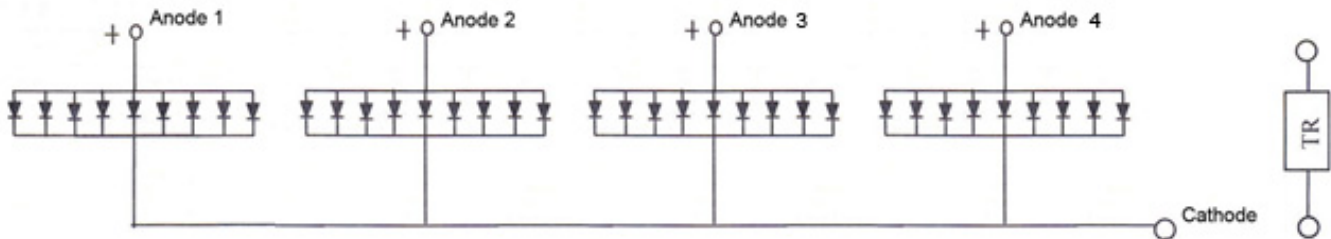
*³output power measurement tolerance: ± 10 %

NOTE: UVMAX LEDs are accompanied by a test report, overriding the electrical characteristics given in this datasheet





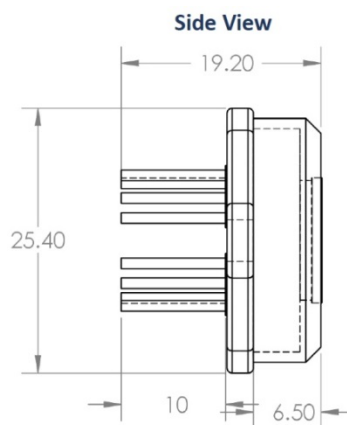
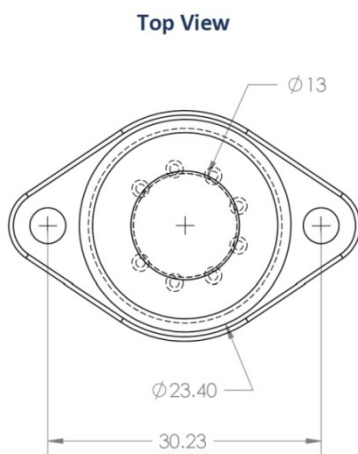
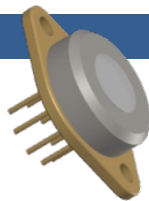
Electrical Layout



NOTE: quantity and arrangement of anodes and quantity of dies per each anode may vary

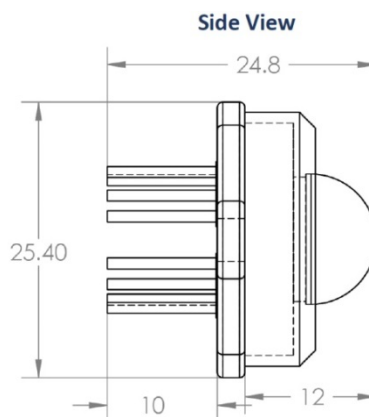
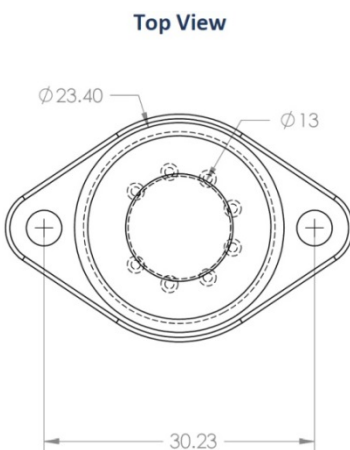
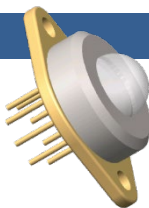
Outline Dimensions

FW - Flat window



All dimensions in mm

HL - Hemispherical lens

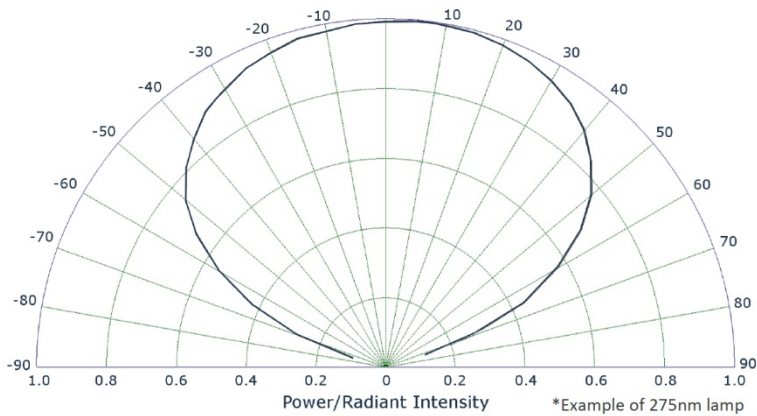
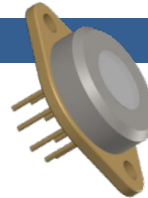


All dimensions in mm

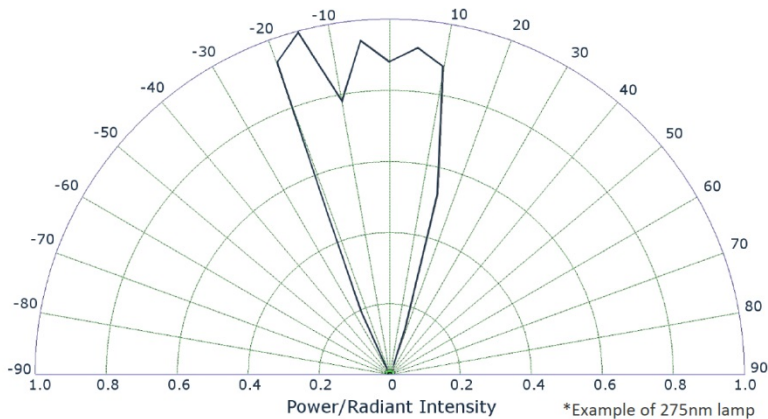
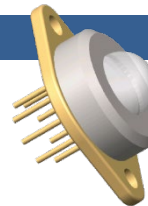


Emission Characteristics

FW - Flat window



HL - Hemispherical Lens



Device Materials

Pin #	Material
Header	Fe-Ni alloy, plated Ni-Au
Leads	Fe-Ni alloy, plated Ni-Au
Bonding wires	Au
Lens	SiO ₂





Precautions

Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux.
- Do only solder the leads. Soldering of header or cap will damage the LED
- Do only cut the leads at room temperature with an ESD protected tool
- Do not solder closer than 3 mm from base of the header
- Do form leads prior to soldering
- Do not impose mechanical stress on the header when forming the leads
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Recommended soldering conditions:

dip soldering		hand soldering	
pre-heat time	max 30 s	soldering time	max 5 s
dipping time	max 5 s		
solder bath temperature	max 190 °C	solder temperature	max 190 °C

It is strongly advised to perform soldering at the shortest time and lowest temperature possible.



Cleaning:

Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended

DO NOT USE acetone, chloroform, trichloroethylene, or MKS

DO NOT USE ultrasonic cleaners

Static Electricity:

LEDs are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

UV-Radiation:

During operation these LEDs do emit **high intensity ultraviolet light**, which is hazardous to skin and eyes, and may cause cancer. Do avoid exposure to the emitted UV light. **Protective glasses are recommended.** It is further advised to attach a warning label on products/systems that do utilize UV-LEDs:

Class 1		WARNING
		UV LEDs High intensity ultraviolet light Eye and skin hazard - avoid exposure to eyes/skin Do not look directly at light - use eye protection Use warning labels on systems containing UV LEDs

Operation:

Do only operate UVMAX LEDs with a current source.

Running these LEDs from a voltage source *will* result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory

