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# UVLUX270-5



- ► **Deep Ultraviolet Light Emission Source**
- ► **275 nm, 3-5 mW**
- ► **9 chip LED array**
- ► ⟶ **Water Sterilization, DNA Sequencing**

RoHS COMPLIANT Pb Pb-Free

## Description

**UVLUX270-5** is a series of **AlGaN** based deep UV multi chip LED arrays, utilizing 9 parallel connected chip dies, with a typical peak wavelength of **275 nm** and optical output power of **3-3 mW**. It comes in hermetically sealed TO39 metal can package with hemispherical lens or flat glass window. **UVLUX270-5** is widely used for forensic analysis, disinfection, water sterilization, protein analysis, DNA sequencing and drug discovery.

## Maximum Rating ($T_{CASE}$ = 25°C)

| Parameter | Symbol | Values | | Unit |
|---|---|---|---|---|
| | | Min. | Max. | |
| Power Dissipation, DC* | $P_D$ | | 1500 | mW |
| Forward Current *($T_A$=25°C)* | $I_F$ | | 180 | mA |
| Operating Temperature | $T_{OPR}$ | - 30 | + 55 | °C |
| Storage Temperature | $T_{STG}$ | - 30 | + 100 | °C |
| Soldering Temperature | $T_{SOL}$ | | + 190 | °C |

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

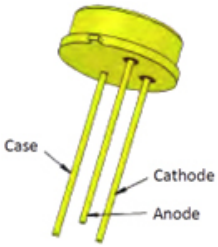
## Electro-Optical Characteristics ($T_{CASE}$ = 25°C, $I_F$ = 180 mA)

| Parameter | Symbol | Values | | | Unit |
|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | |
| Peak Wavelength[*1] | $\lambda_P$ | 270 | 275 | 280 | nm |
| Spectral Width (FWHM) | $\Delta\lambda$ | | 12 | 15 | nm |
| Forward Voltage[*2] | $V_F$ | | 6.2 | 7.5 | V |
| Radiated Power[*3] | *PO* | 3 | | 5 | mW |
| Beam Angle (hemispherical lens) | $2\Theta_{1/2}$ | | 20 | | deg. |
| Beam Angle (flat window) | $2\Theta_{1/2}$ | | 120 | | deg. |

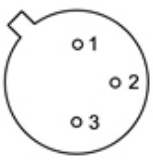
*[1]wavelength measurement tolerance: ± 2 nm
*[2]forward voltage measurement tolerance: ± 2 %
*[3]output power measurement tolerance: ± 10 %

## Electrical Connection

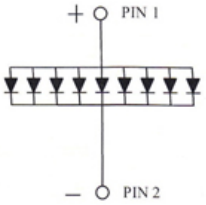
| Pin # | Function |
|---|---|
| Pin 1 | Anode |
| Pin 2 | Cathode |
| Pin 3 | *Case* |




**Bottom view:**




**Electrical layout:**

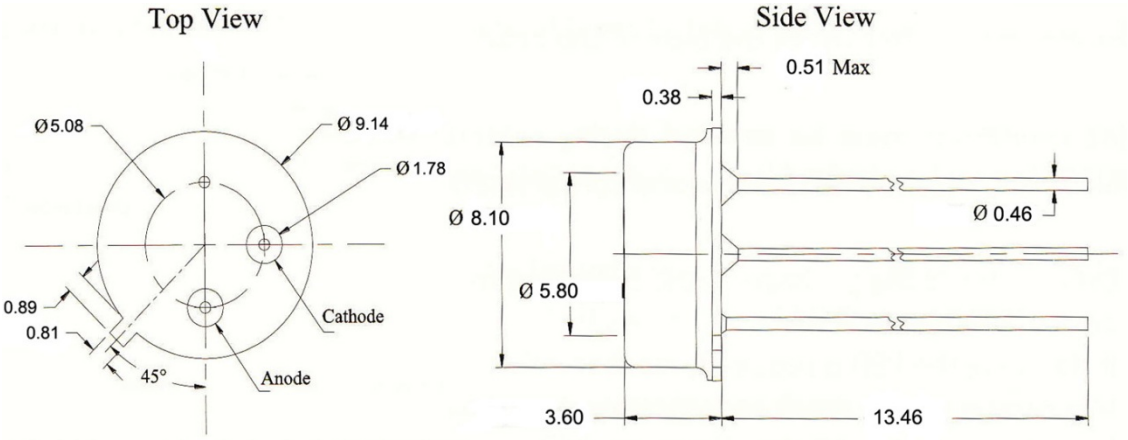


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# Outline Dimensions

## FW - Flat window

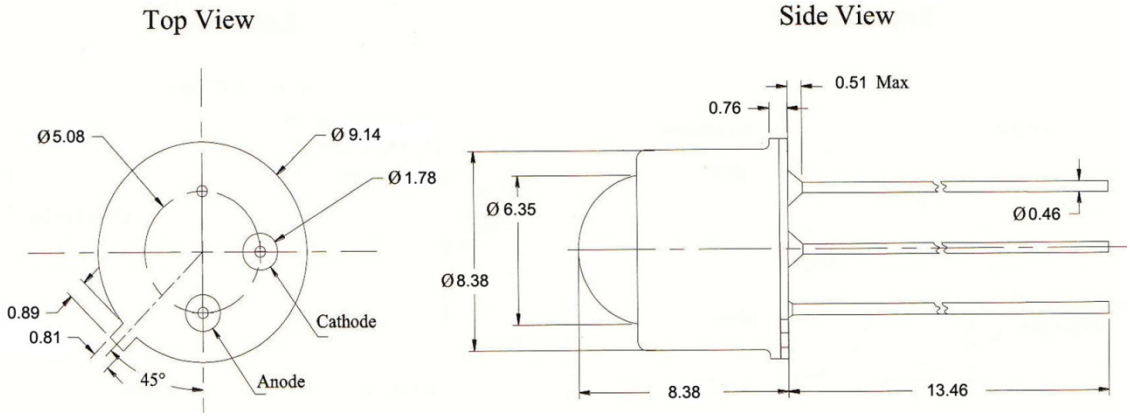





**All dimensions in mm**

## HL - Hemispherical lens






**All dimensions in mm**

# Device Materials

| Part | Material |
|---|---|
| Header | Fe-Ni alloy, plated Ni-Au |
| Leads | Fe-Ni alloy, plated Ni-Au |
| Bonding wires | Au |
| Lens | $SiO_2$ |

RoHS COMPLIANT

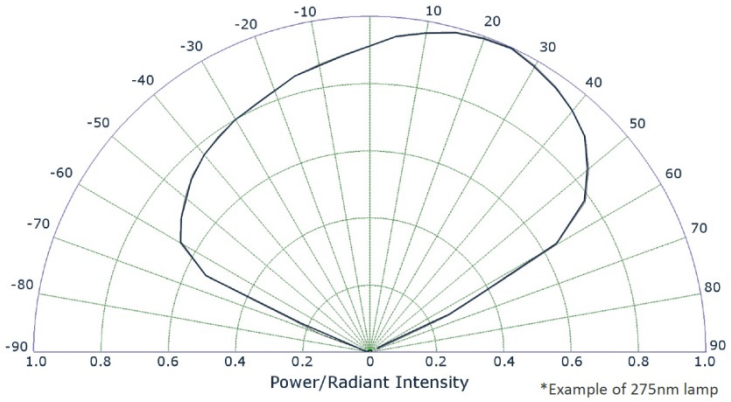
Pb Pb-Free

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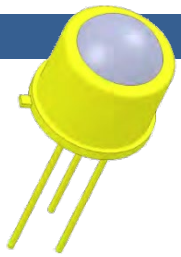
# Emission Characteristics

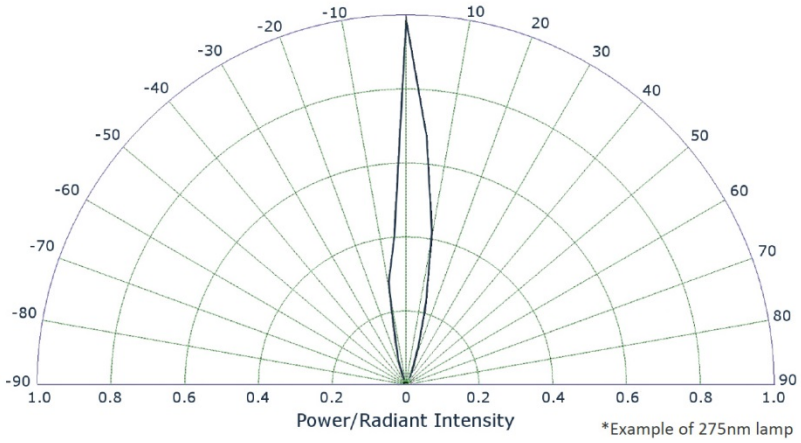
## FW - Flat window






## HL - Hemispherical lens





# 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, chloroseen, trichloroethylene, or MKS
DO NOT USE ultrasonic cleaners

## Static Electricity:

**UVTOP 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**




## Operation:

**Do *only* operate UVTOP 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

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