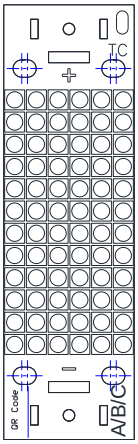


ProLight PB2M-3JLU-xDA72A0x
200W UV Power LED Module
Technical Datasheet
Version: 1.4

ProLight Opto ProEngine Series

Features

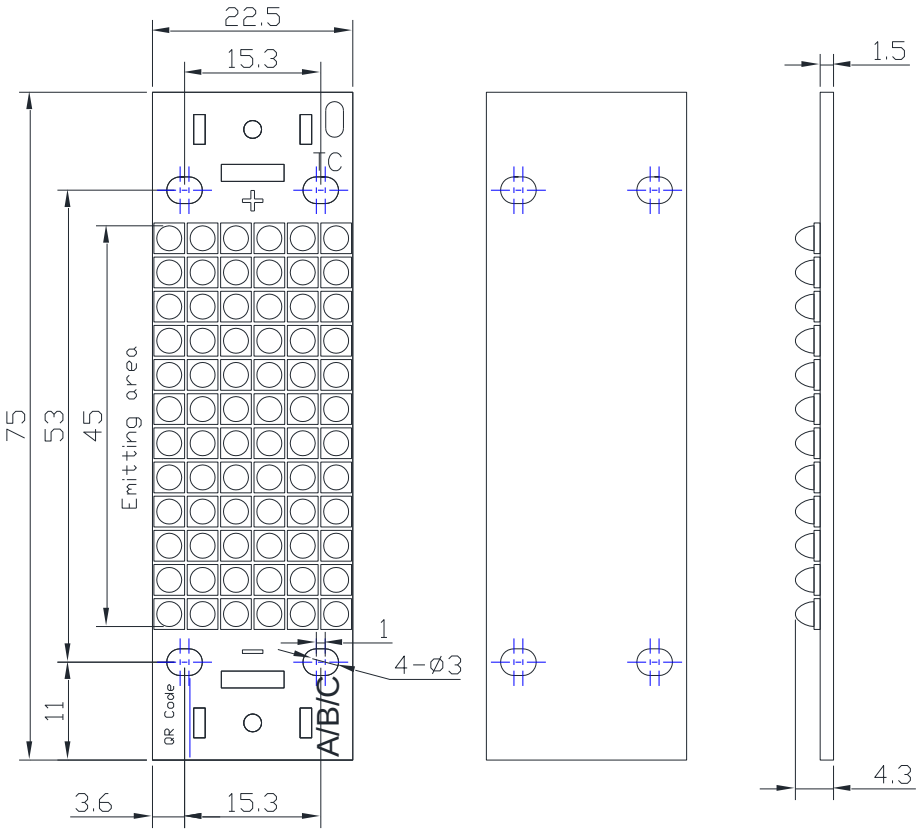
- RoHS compliant
- Quartz Glass Lens
- View angle 30˚

Main Applications

- UV gluing, UV curing, UV marking
- UV drying of printing inks and lacquers
- Currency inspection
- Forensic analysis - urine, protein stains
- Leak detection using fluorescent dyes
- Detects fluorescing minerals and gems

ProLight Opto Technology Corp.
No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)
Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Mechanical Dimensions



BIN Code = A/B/C
A = Radiomteric Power (mW)
B = Peak Wavelength
C = Voltage

Notes:
1. The cathode side of the device is denoted by the chamfer on the part body.
2. Electrical insulation between the case and the board is required. Do not electrically connect either the anode or cathode to the slug.
3. Drawing not to scale.
4. All dimensions are in millimeters.
5. Unless otherwise indicated, tolerances are ± 0.15mm.
6. Please do not solder the emitter by manual hand soldering, otherwise it will damage the emitter.
7. **Please do not use a force of over 3kgf impact or pressure on the lens of the LED, otherwise it will cause a catastrophic failure.**
8. Recommended connector TENGGUAM housing P/N WFN-09XX1-1L and terminal P/N JCN-WH06200-1805-01

*The appearance and specifications of the product may be modified for improvement without notice.

ProLight Opto Technology Corp.
No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)
Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Flux Characteristics, T_J = 25˚C

Color	Part Number Emitter	Radiometric Power (W) @4200mA		Refer @3000mA
		Minimum	Typical	Typical
UV-S	PB2M-3JLU-GDA72A0S	49.3	67	48.2
UV-M	PB2M-3JLU-DA72A0M	49.3	68.4	49.3
UV	PB2M-3JLU-DA72A0	49.3	68.4	49.3

- ProLight maintains a tolerance of ± 7% on flux and power measurements.
- Please do not drive at rated current more than 1 second without proper heat sink.

Electrical Characteristics, T_J = 25˚C

Color	Forward Voltage V_F (V) @4200mA			Refer @3000mA
	Min.	Typ.	Max.	Typ.
UV-S	40.8	46.8	52.8	43.2
UV-M	38.4	42.0	48.0	40.8
UV	38.4	42.0	48.0	40.8

- ProLight maintains a tolerance of ± 1V for Voltage measurements.

Optical Characteristics at 4200mA, T_J = 25˚C

Color	Peak Wavelength λ_P			Total included Angle (degrees)	Viewing Angle (degrees)
	Min.	Typ.	Max.	$\theta_{0.90V}$	$2\theta_{1/2}$
UV-S	365 nm	367.5 nm	370 nm	60	30
UV-M	380 nm	385 nm	390 nm	60	30
UV	390 nm	395 nm	400 nm	60	30

- ProLight maintains a tolerance of ± 1nm for dominant wavelength measurements.

ProLight Opto Technology Corp.
No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)
Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Absolute Maximum Ratings

Parameter	UV-S/UV-M/UV
DC Forward Current (mA)	4200
Peak Pulsed Forward Current (mA)	5000 (less than 1/10 duty cycle@1KHz)
ESD Sensitivity (HBM per MIL-STD-883E Method 3015.7)	±1000V
LED Junction Temperature	125°C
Operating Board Temperature at Maximum DC Forward Current	-40°C - 85°C
Storage Temperature	-40°C - 100°C
Reverse Voltage	Not designed to be driven in reverse bias

Radiometric Power Bin Structure at 4200mA

Color	Bin Code	Minimum Radiometric Power (W)	Maximum Radiometric Power (W)	Available Color Bins
UV-S	T1	49.3	54.4	All
	T2	54.4	59.8	【1】
	U1	59.8	65.5	【1】
	U2	65.5	72	【1】
	V1	72	79.2	【1】
UV-M	T1	49.3	54.4	All
	T2	54.4	59.8	【1】
	U1	59.8	65.5	【1】
	U2	65.5	72	【1】
	V1	72	79.2	【1】
UV	T1	49.3	54.4	All
	T2	54.4	59.8	【1】
	U1	59.8	65.5	【1】
	U2	65.5	72	【1】
	V1	72	79.2	【1】

- ProLight maintains a tolerance of ± 7% on flux and power measurements.
- The flux bin of the product may be modified for improvement without notice.
- 【1】 The rest of color bins are not 100% ready for order currently. Please ask for quote and order possibility.

ProLight Opto Technology Corp.

No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)

Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Peak Wavelength Bin Structure

Color	Bin Code	Minimum Peak Wavelength (nm)	Maximum Peak Wavelength (nm)
UV-S	2	365	370
UV-M	B	380	385
	A	385	390
UV	1	390	395
	2	395	400

- ProLight maintains a tolerance of ± 1nm for peak wavelength measurements.

Forward Voltage Bin Structure

Color	Bin Code	Minimum Voltage (V)	Maximum Voltage (V)
UV-S	E	40.8	43.2
	F	43.2	45.6
	G	45.6	48.0
	H	48.0	50.4
	J	50.4	52.8
UV-M	D	38.4	40.8
	E	40.8	43.2
	F	43.2	45.6
	G	45.6	48.0
UV	D	38.4	40.8
	E	40.8	43.2
	F	43.2	45.6
	G	45.6	48.0

- ProLight maintains a tolerance of ± 1V for Voltage measurements.

Note: Although several bins are outlined, product availability in a particular bin varies by production run and by product performance. Not all bins are available in all colors.

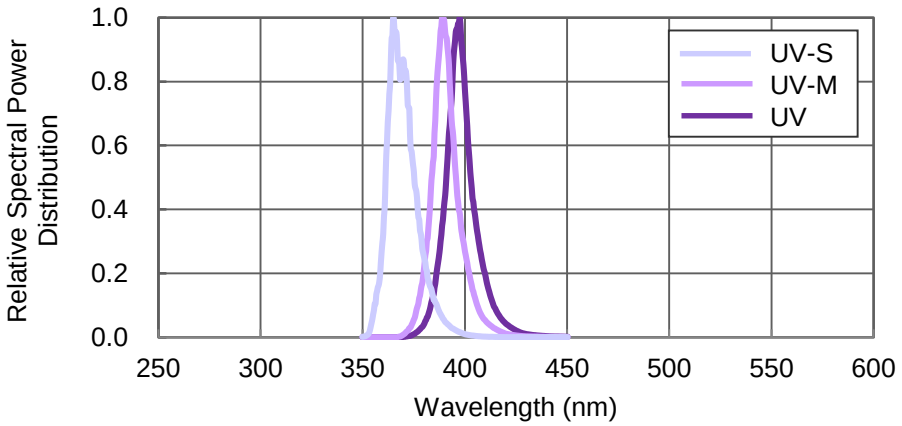
ProLight Opto Technology Corp.

No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)

Tel ：+886-3-461-8618 Fax：+886-3-461-8677

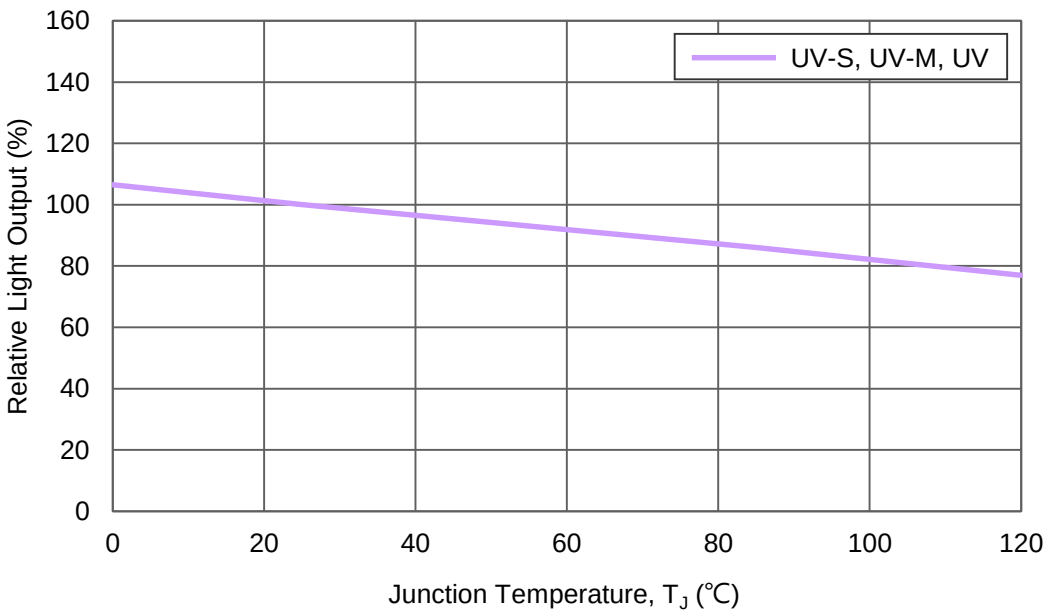
Color Spectrum, T_J = 25˚C

1. UV-S, UV-M, UV



Light Output Characteristics

Relative Light Output vs. Junction Temperature at 4200mA



ProLight Opto Technology Corp.

No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)

Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Forward Current Characteristics, T_J = 25˚C

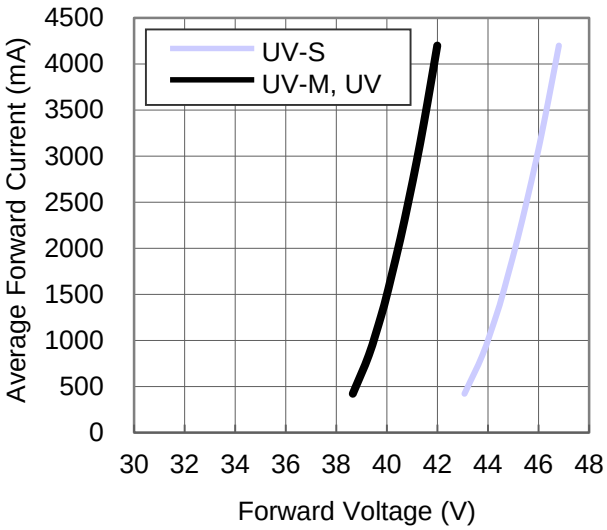


Fig 1. Forward Current vs. Forward Voltage for UV-S, UV-M, UV.

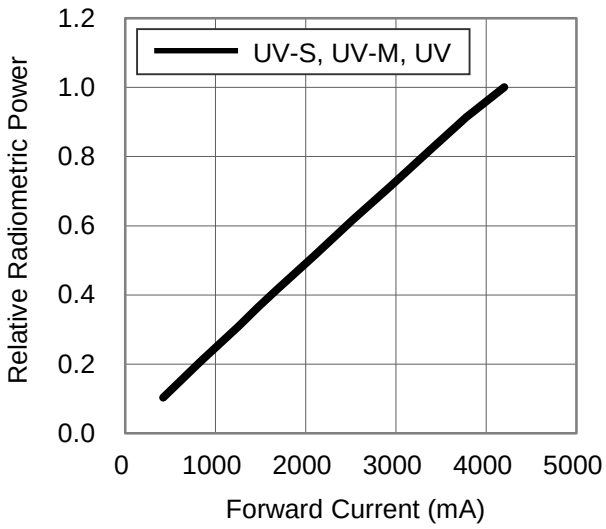
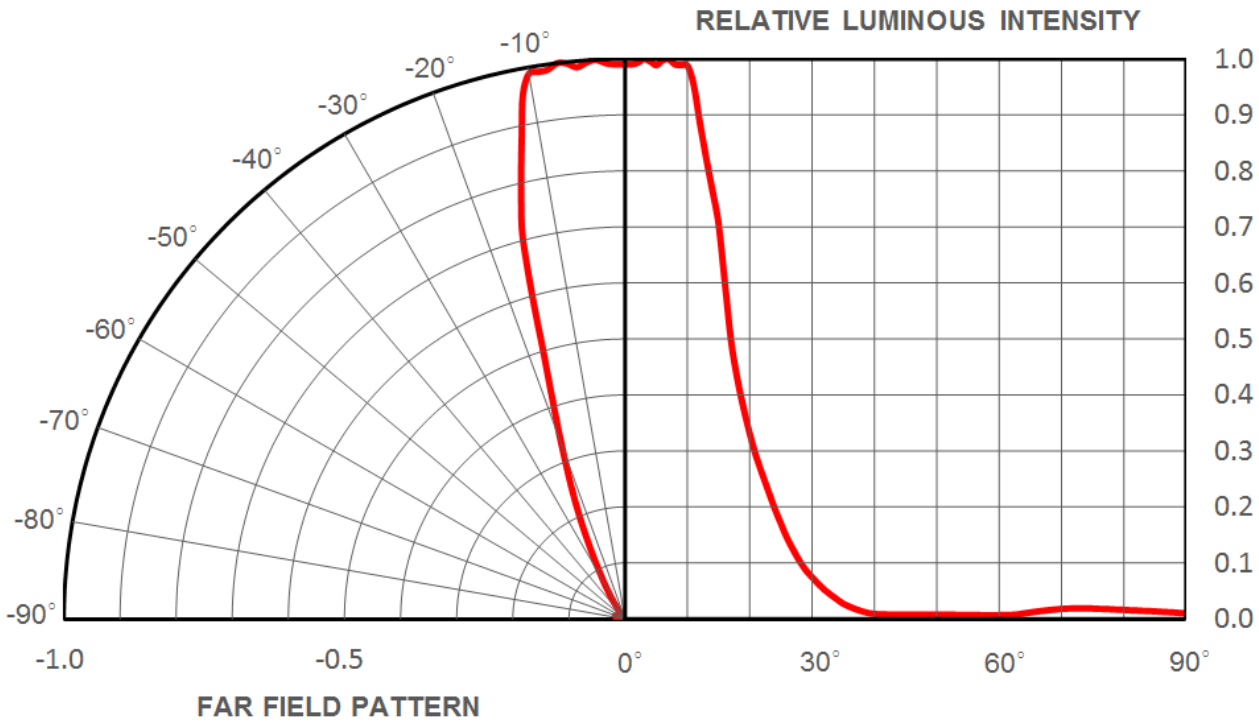


Fig 2. Relative Radiometric Power vs. Forward Current for UV-S, UV-M, UV at T_J=25 maintained.

Typical Representative Spatial Radiation Pattern



ProLight Opto Technology Corp.

No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)

Tel ：+886-3-461-8618 Fax：+886-3-461-8677

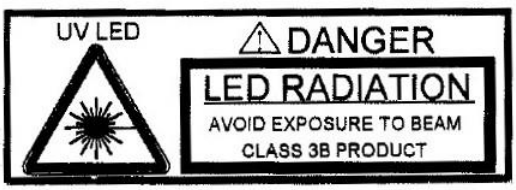
Precaution for Use

- Storage
  Please do not open the moisture barrier bag (MBB) more than one week. This may cause the leads of LED discoloration. We recommend storing ProLight's LEDs in a dry box after opening the MBB. The recommended storage conditions are temperature 5 to 30°C and humidity less than 40% RH. It is also recommended to return the LEDs to the MBB and to reseal the MBB.
- LEDs are ESD (electrostatic discharge) sensitive; static electricity and surge voltages seriously damage UV LEDs and can result in product failure
  (1) Ensure that tools, jigs and machines being used are properly grounded
  (2) LED mounting equipment should include protection against voltage surge
  (3) Use proper ESD protection, including grounded wrist straps, ESD footwear and clothes
- The slug is is not electrically neutral. Therefore, we recommend to isolate the heat sink.
- **We recommend using the M705-S101-S4 solder paste from SMIC (Senju Metal Industry Co., Ltd.) for lead-free soldering.**
- **Do not use solder pastes with post reflow flux residue>47%. (58Bi-42Sn eutectic alloy, etc) This kind of solder pastes may cause a reliability problem to LED.**
- Any mechanical force or any excess vibration shall not be accepted to apply during cooling process to normal temperature after soldering.
- Please avoid rapid cooling after soldering.
- Components should not be mounted on warped direction of PCB.
- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a heat plate should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- This device should not be used in any type of fluid such as water, oil, organic solvent and etc. When cleaning is required, isopropyl alcohol should be used.
- When the LEDs are illuminating, operating current should be decide after considering the package maximum temperature.
- The appearance, specifications and flux bin of the product may be modified for improvement without notice. Please refer to the below website for the latest datasheets.
  http://www.prolightopto.com/

Eye Safety Guidelines

- During operation, the LED emits high intensity ultraviolet (UV) light, which is harmful to skin and eyes. UV light is hazardous to skin and may cause cancer. Avoid exposure to UV light when LED is operational. Precautions must be taken to avoid looking directly at the UV light without the use of UV light protective glasses. Do not look directly at the front of the LED or at the LED's lens when LED is operational.

- Attach warning labels on products/systems that use UV LEDs.



ProLight Opto Technology Corp.
No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)
Tel ：+886-3-461-8618 Fax：+886-3-461-8677

Use Handling of Quartz Lens LEDs

Notes for handling of quartz lens LEDs

- Please do not use a force of over 3kgf impact or pressure on the quartz lens, otherwise it will cause a catastrophic failure.
- The LEDs should only be picked up by making contact with the sides of the LED body.
- Avoid touching the quartz lens especially by sharp tools such as Tweezers.
- Avoid leaving fingerprints on the quartz lens.
- Please store the LEDs away from dusty areas or seal the product against dust.
- When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the quartz lens must be prevented.
- Please do not mold over the quartz lens with another resin. (epoxy, urethane, etc)

DISCLAIMER

- The information in this document has been compiled from reference materials and other sources believed to be reliable, and given in good faith. No warranty, either expressed or implied, is made, however, to the accuracy and completeness of the information, nor is any responsibility assumed or implied for any loss or damage resulting from inaccuracies or omissions. Each user bears full responsibility for making their own determination as to the suitability of Prolight products, recommendations or advice for its own particular use. Prolight makes no warranty or guarantee, express or implied, as to results obtained in end-use, nor of any design incorporating its Products, recommendation or advice.

- Each user must identify and performall tests and analyses necessary to ensure that it's finished application incorporating Prolight products will be safe and suitable for use under end-use conditions. Each user of devices assumes full responsibility to become educated in and to protect from harmful irradiation. Prolight specifically disclaims any and all liability for harm arising from buyer's use or misuse of UVC devices either in development or end-use.

ProLight Opto Technology Corp.

No. 89, Xiyuan Rd., Zhongli Dist., Taoyuan City 32057, Taiwan (R.O.C.)

Tel ：+886-3-461-8618 Fax：+886-3-461-8677