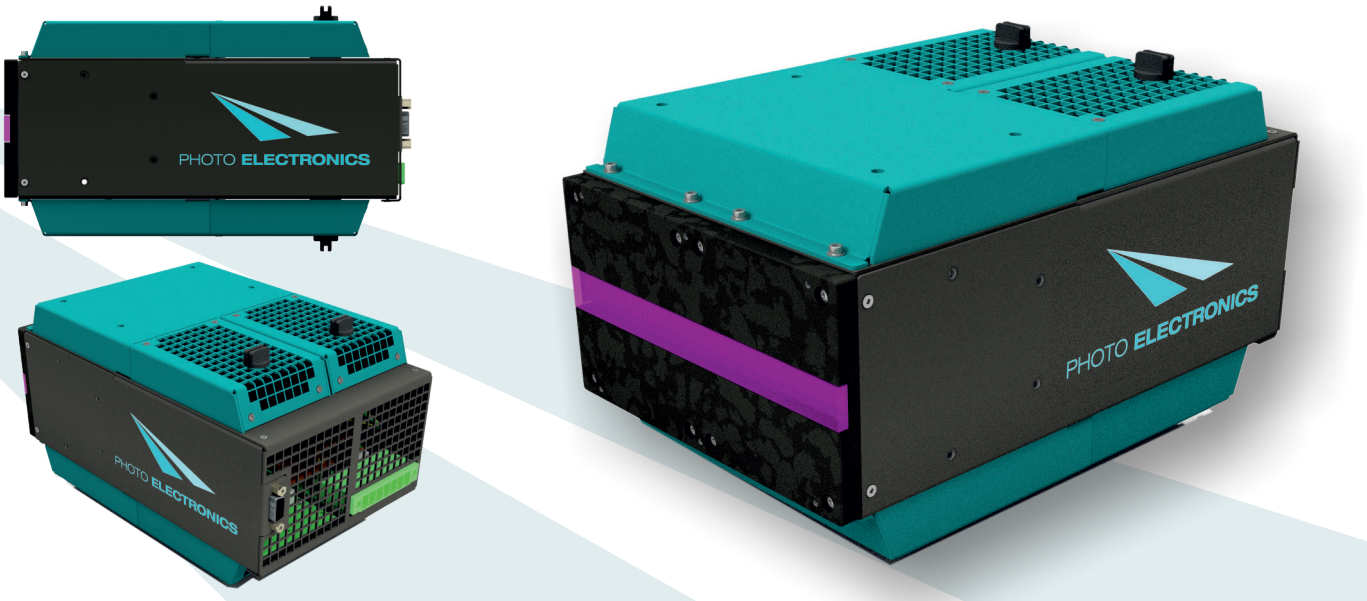
DROLED L70 UV LED Lamps
For UV Curing and Drying

PHOTO ELECTRONICS
U. V. CURING EQUIPMENTS



1. DROLED L70 UV LED lamps series - General features

The series of UV LED lamps called Droled L70 **represents the key products in terms of performance.**
These lamps are **ideal** to use on **automatic machines** or on production **lines** with **elevated productivity**, considering the high value of irradiance and dose emitted.
They stand out for their capability to polymerize in depth or in complex conditions, such as in pad printing or silkscreen printing.
They are available in **Flat Window** and **with Focused Lens** optical systems.

2. UV LED Lamps by Photo Electronics - Advantages

CONSUMPTION	Very low power consumption compared to traditional UV Mercury lamps.
INSTANT RELIGHTING	On and off instant switching. No preheating time, the lamp immediately emits 100% UV energy. Repeated starts and stops do not affect the lamp life.
HIGH PERFORMANCE	UV LED modular system, available in different Peak Wavelenghts 365, 385, 395 and 405nm and peak powers up to 20W / cm²
LOW HEATING	Low heat emission. It is possible to treat heat-sensitive substrates, avoiding deformation or thermal alterations
SAFETY	No production of ozone, no emission of UVB and UVC does not need vapour and ozone extraction systems, plastics and metal parts if irradiated do not oxidize.
INTEGRATED ELECTRONICS	Electronics microprocessor managed, integrated and complete. Alarm management and intelligent logic, allows it to be externally and easily controlled via digital/analog signals or via Modbus.
RELIABILITY AND MAINTENANCE	Long emitters lifetime, no replacement lamps need and minimal maintenance. Guaranteed lifetime of 20,000 hours. Power on / off does not reduce lamp life. High reliability even in heavy duty industrial conditions.

3. Models available

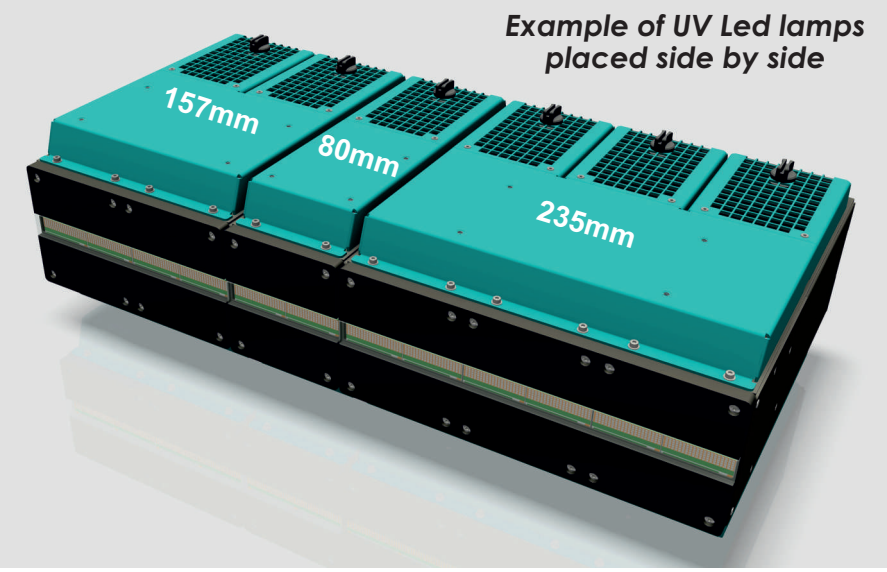
DROLED L70 UV LED lamp series are available in the following models (see table) with modular configuration, allowing you to compose the most suitable system for your purpose.

Standard emission wavelenght 365 or 395nm. Wavelenght 385 and 405nm available at request.

Peak wavelenght (nm)	365nm												385 / 395 / 405nm					
Peak Irradiance value (W/cm²)	8 W/cm²						12 W/cm²						8 W/cm²					
Emitting windowlenght(mm) **FLAT WINDOW VERSION**	43	80	157	235	313	390	43	80	157	235	313	390	43	80	157	235	313	390
Emitting windowlenght(mm) **FOCUSED VERSION**	43	80	161	242	323	403	43	80	161	242	323	403	43	80	161	242	323	403
Typical power consumption (48Vin)	180W 3,75A	350W 7,3A	700W 14,6A	1050W 21,9A	1400W 29,2A	1750W 36,5A	270W 5,60A	525W 11A	1050W 21,9A	1575W 32,8A	2100W 43,8A	2625W 54,7A	120W 2,5A	240W 5A	480W 10A	720W 20A	960W 30A	1200W 40A
Maximun power consumption (48Vin)	220W 4,6A	420W 8,8A	840W 17,6A	1260W 26,1A	1680W 34,9A	2100W 43,7A	330W 4,5A	630W 13,2A	1260W 26,4A	1890W 26,1A	2520W 52,3A	3150W 65,5A	145W 3A	290W 6A	580W 12A	870W 18A	1150W 24A	1450W 30A

Peak wavelenght (nm)	385 / 395 / 405nm																	
Peak Irradiance value (W/cm²)	12 W/cm²						16 W/cm²						20 W/cm²					
Emitting windowlenght(mm) **FLAT WINDOW VERSION**	43	80	157	235	313	390	43	80	157	235	313	390	43	80	157	235	313	390
Emitting windowlenght(mm) **FOCUSED VERSION**	43	80	161	242	323	403	43	80	161	242	323	403	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Typical power consumption (48Vin)	200W 4,2A	400W 8,4A	800W 16,8A	1200W 25,2A	1600W 33,6A	2000W 42A	220W 4,6A	475W 9,9A	950W 19,8	1425W 29,7A	1900W 39,6A	2375W 45,5A	265W 5,5A	530W 11,0A	1060W 22,0A	1590W 33,0A	2120W 44,0A	2650W 55,0A
Maximun power consumption (48Vin)	250W 5,2A	480W 10A	960W 20A	1440W 30A	1929W 40A	2400W 50A	264W 5,5A	570W 11,9A	1140W 23,8	1710W 35,7A	2280W 47,6A	2850W 59,4A	330W 6,9A	660W 13,8A	1320W 27,6A	1980W 41,4A	2640W 55,2A	3300W 69,0A

4. Modular lamps placed side by side to cover large working widths



The assembly example is composed by the following lamps (placed side by side):

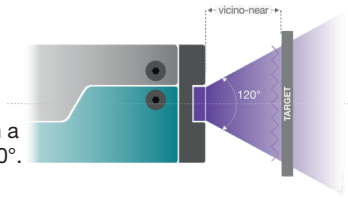
- Nr.1 L70 157mm width lamp unit
- Nr.1 L70 80mm width lamp unit
- Nr.1 L70 235mm width lamp unit

All UV LED lamps are designed to be placed **side by side** in groups, even with **different irradiation** width, thus obtaining UV Led systems with specific working dimension.

The **irradiation** resulting from more lamps side by side is always **homogeneus** across the **entire width**.

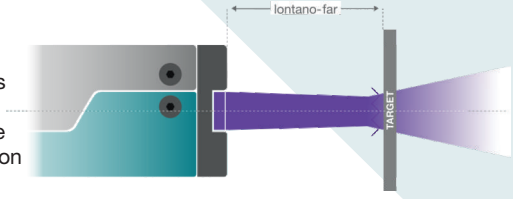
5. Optical systems available

FLAT WINDOWS
It permits to achieve an high exposure time in the Curing phase.
The radiation comes out with a wide angulation, of about 120°.



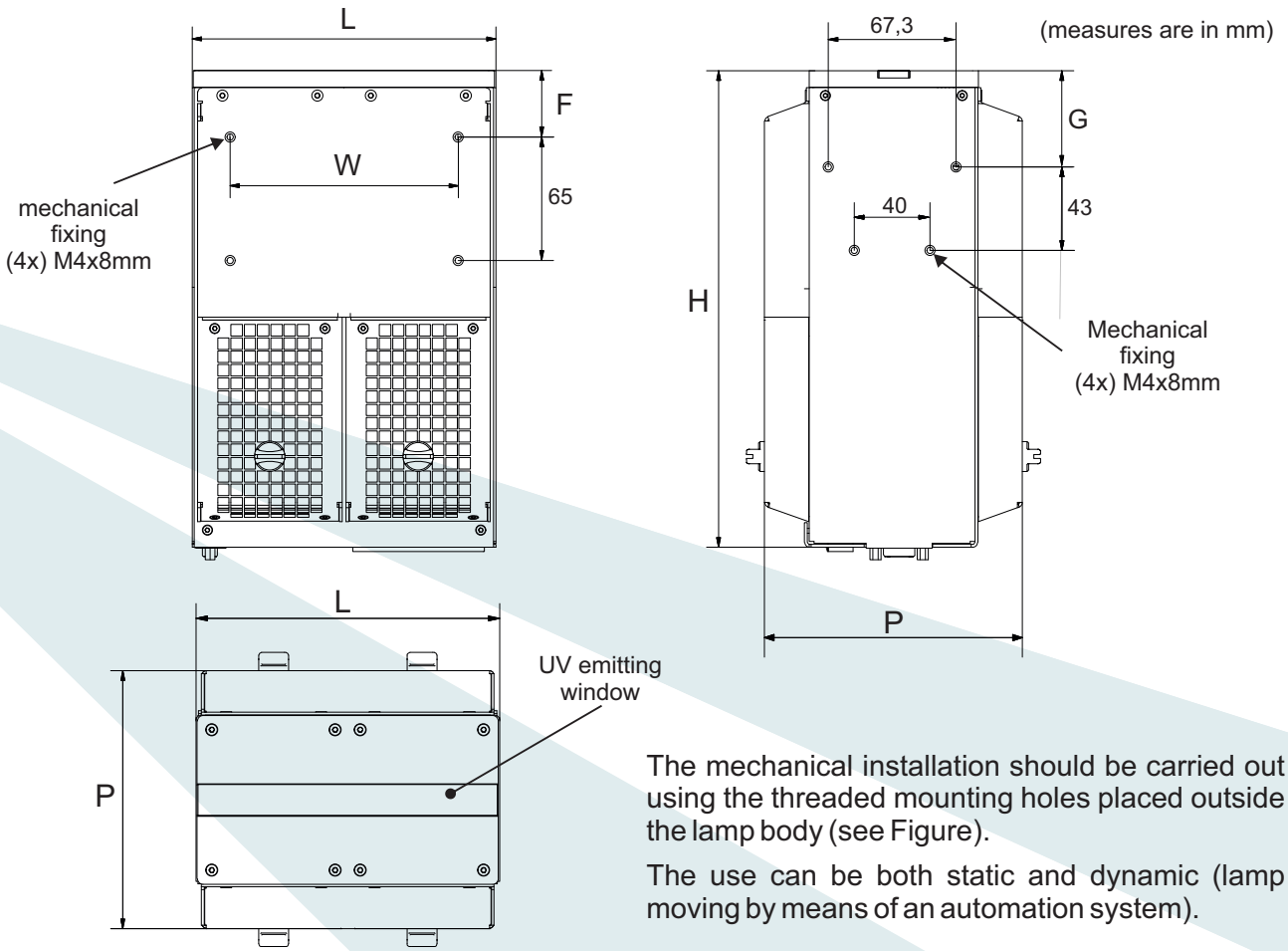
Application: Complete polymerization few mm. from the emitting window.

FOCUSED LENS
It permits to focus the radiation in long distances and obtain an high irradiance value, using the light r ection and refraction principles.



Application: Complete polymerization far from the emitting window.

6. Dimensions, weights and mechanical fixing



The mechanical installation should be carried out using the threaded mounting holes placed outside the lamp body (see Figure).

The use can be both static and dynamic (lamp moving by means of an automation system).

DROLED L70 dimensions

Dimension L = lamp maximum irradiation width

DROLED L70 (Flat Window version)

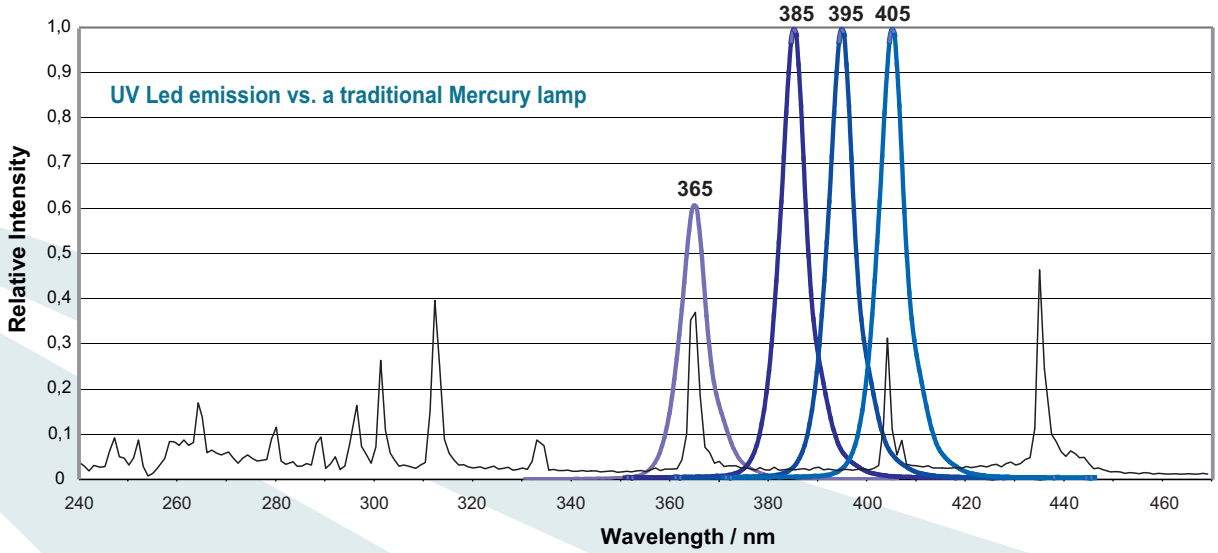
Dimensions	Emitting window (mm)	40 x 17mm	80 x 17mm	157 x 17mm	235 x 17mm	313 x 17mm	390 x 17mm
	L	40	80	157	235	313	390
	P	136	136	136	136	136	136
	H	289	258	258	258	258	258
	W	20	56	120	120	240	240
	F	35,2	35,2	35,2	35,2	35,2	35,2
	G	51	51	51	51	51	51
	Weight(Kg)	1,05	1,55	2,9	4,4	5,9	7,4

DROLED L70 (Focused Lens version)

Dimensions	Emitting window (mm)	40 x 20mm	80 x 20mm	161 x 20mm	242 x 20mm	323 x 20mm	403 x 20mm
	L	40	80	161	242	323	403
	P	136	136	136	136	136	136
	H	297	266	266	266	266	266
	W	20	56	120	120	240	240
	F	43,7	43,7	43,7	43,7	43,7	43,7
	G	59,5	59,5	59,5	59,5	59,5	59,5
	Weight(Kg)	1,6	3,2	4,8	6,4	8	9,6

7. Emission frequencies available

DROLED L70 UV LED lamps are available in **4 Peak Wavelenghts** to best suit the chemistry of the products that must be polymerized.



8. Cooling System and connections

Each UV LED Droled lamp is equipped with a **forced air cooling system**, which is **integrated** into the lamp housing and it operates independently. Cooling air enters through the filtered grids, present on both sides of the lamp, and comes out from the back grid. The internal electronics manages and controls independently the cooling system.
The lamp has to be powered by **standard 48 Volt switching AC/DC power supply** available on the market. The lamp can be easily managed through **analog/digital signals** present on the connector or through **Modbus Serial Protocol**

PINOUT SIGNALS CONNECTOR DB15-HD MODBUS Serial Protocol Version		
PIN	**FUNCTION**	**DETAILED DESCRIPTION**
1	VOLTAGE REFERENCE	Voltage reference +10Vdc FIXED, useful for wiring a potentiometer directly on entrance INTENSITY CONTROL (pin.2)
2	INTENSITY CONTROL	Analog input 0-10 Vdc for the lamp intensity control. **1,0V corresponds to 10%** and **10,0V corresponds to 100%**. The voltage reference can come from an external PLC of the custode or from a potentiometer directly wired on the connector IN case of potentiometer use as reference +10Vdc (pin.1)
3	ENABLING	Digital input 0-24Vdc, push pull type. **0Vdc is interpreted as OFF**, **24Vdc is interpreted as ON**. Voltage reference can come from an external generator (which it will have the 0Volt connected in common with the GND) or from a switch directly wired on the connector. In this case, for the switch use as reference +24Vdc (pin.6).
4	OUT RS485-	Serial communication OUT RS485-
5	LAMP READY	Digital output 0-24Vdc by NPN transistor. It advises that the lamp is ready to be turned on or it is on and there are no anomalies. **0Vdc= not ready, 24Vdc= ready lamp** (via 1.2K Ohm Pull-up resistor).
6	VOLTAGE REFERENCE	Voltage reference +24Vdc FISSO, useful for wiring a switch directly at the entrance ENABLE (pin.3)
7	INTERLOCK	Digital input to use with circuits of external interlock of the custode (ex. Barriers or safeties) **Connected to GND = Lamp unlocked** (lamp enable, it works). **Not connected = lamp locked** (disable lamp, it doesn't work). If you don't use safety circuits, connect this pin.7 directly to a GND.
8,10, 14	GND	GND
9	OUT RS485+	Serial communication OUT RS485+
11	ALLARM	Digital output 0-24Vdc by NPN transistor. It advises that the lamp has an anomaly. **0Vdc= fault lamp**, **24Vdc= not fault lamp** (via 1.2K Ohm Pull-up resistor).
12	IN RS485-	Serial communication IN RS485-
13	IN RS485+	Serial communication IN RS485+
15	TEMPERATURE MONITOR	Analog output 0-10 Vdc proportional to the lmap's temperature (convention factor 0,1 Vdc/° C) example 2,0 V = 20°C recorded, 10,0 V = 100°C recorded