



## UCUBE-30 DATASHEET

**Very Powerful UV LED curing floodlight**

**Full UV LED range available: UVC, UVB and UVA**

**Long lifetime & few maintenances thanks to LED technology**

**Easy-to-use with a PLC thanks to integrated smart electronics.**

Made In France

| | | |
|---|---|---|
| **Electronics** | Power supply | 48 VDC ± 10% (maximal power consumption: 1400W) |
| | Connector | Power: SUBD9W4<br>Signals: M12 8pins for mono version M12 12pins for bi & quadri versions. |
| | Illumination mode | Continuous with a direct DIM signal [0-10V] |
| **Optics** | Wavelength | UVC: 255, 265, 275 nm<br>UVB: 295, 305, 325, 340 nm<br>UVA: 365, 385, 395, 405 nm<br>VIS: 450, 455, 465 nm (Blue), 525 nm (Green), 625 nm (Red), Other on request. |
| | Irradiance | Up to 2000 mW/cm$^2$ in the UVA range<br>Up to 100 mW/cm$^2$ in UVC & UVB range |
| **Mechanics** | Width x Height x Length | 374mm x 354mm x 179mm |
| | Weight | 14 kg |
| | Material | Device body: Aluminum alloy |
| | IP rating | IP4X |
| **Environment** | Operation | Temperature: 10°C to 35°C – Humidity: 20% to 80% humidity (with no condensation) – Altitude: Up to 2000m |
| | Regulations & Marking | CE - UKCA - FCC - ICES-3/NMB-3 |
| | Environmental standards | RoHS III Directives - REACH Regulation - WEEE Regulation |

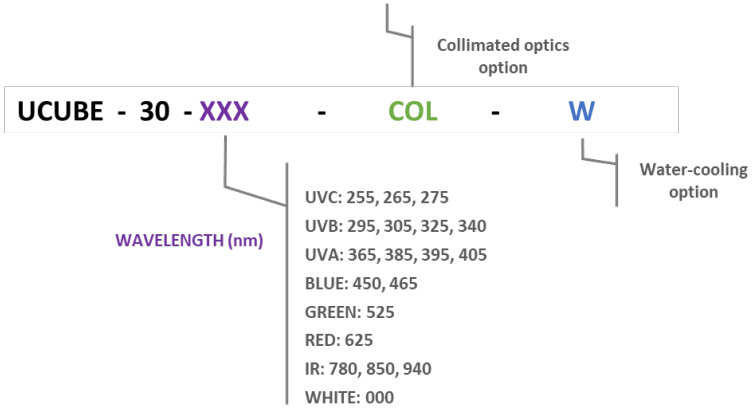


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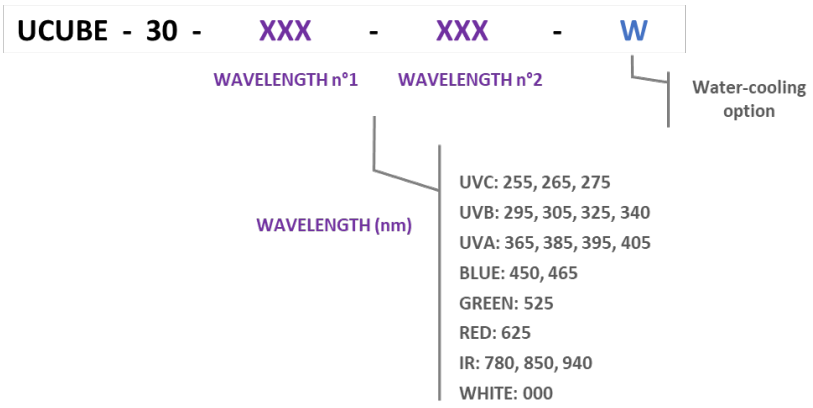
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## Product reference

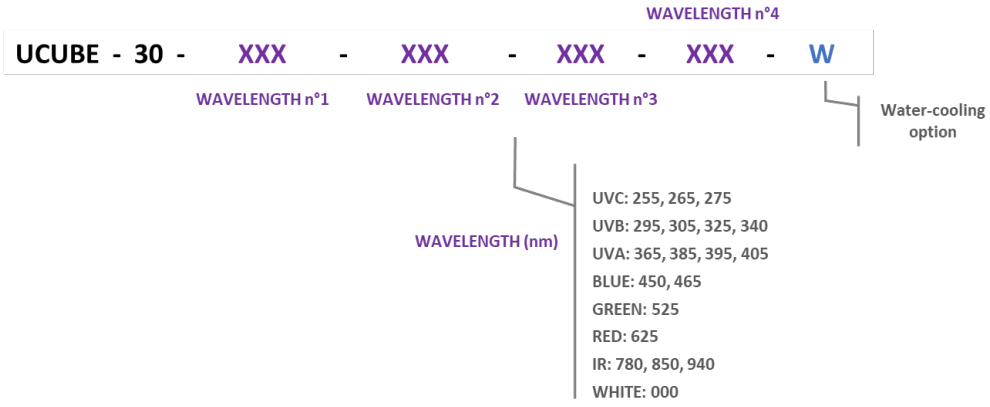
### MONO wavelength version:




### DUAL wavelength version:

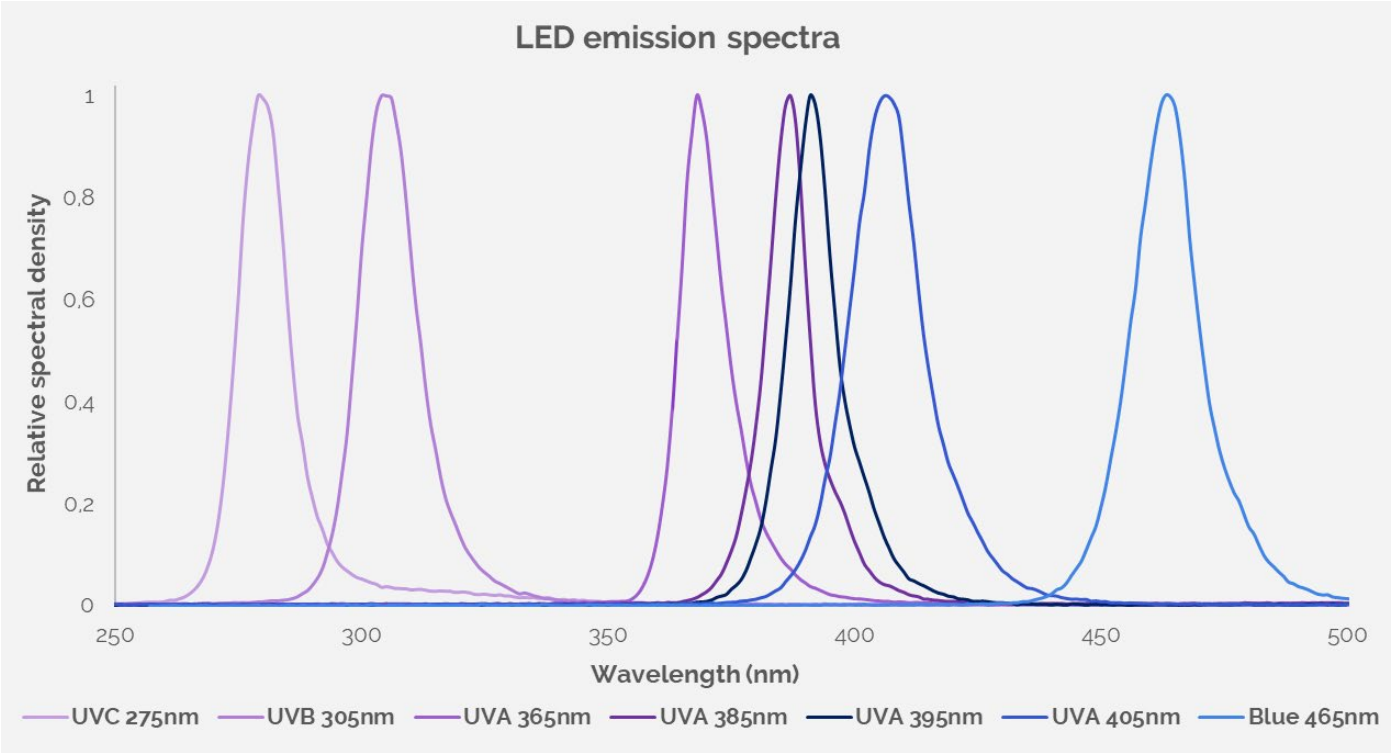



### QUADRI wavelength version:



## Optical characteristics

### LED spectra




For other wavelengths (UVC / UVB / UVA / VISIBLE / IR), feel free to ask us!

### Collimation optics option (-COL)

The UCUBE-30-XXX has a dispersive UV illumination, but an optional collimation optical system (6° light beam) can be added to strongly increase irradiation uniformity.

**1 Without COL option**

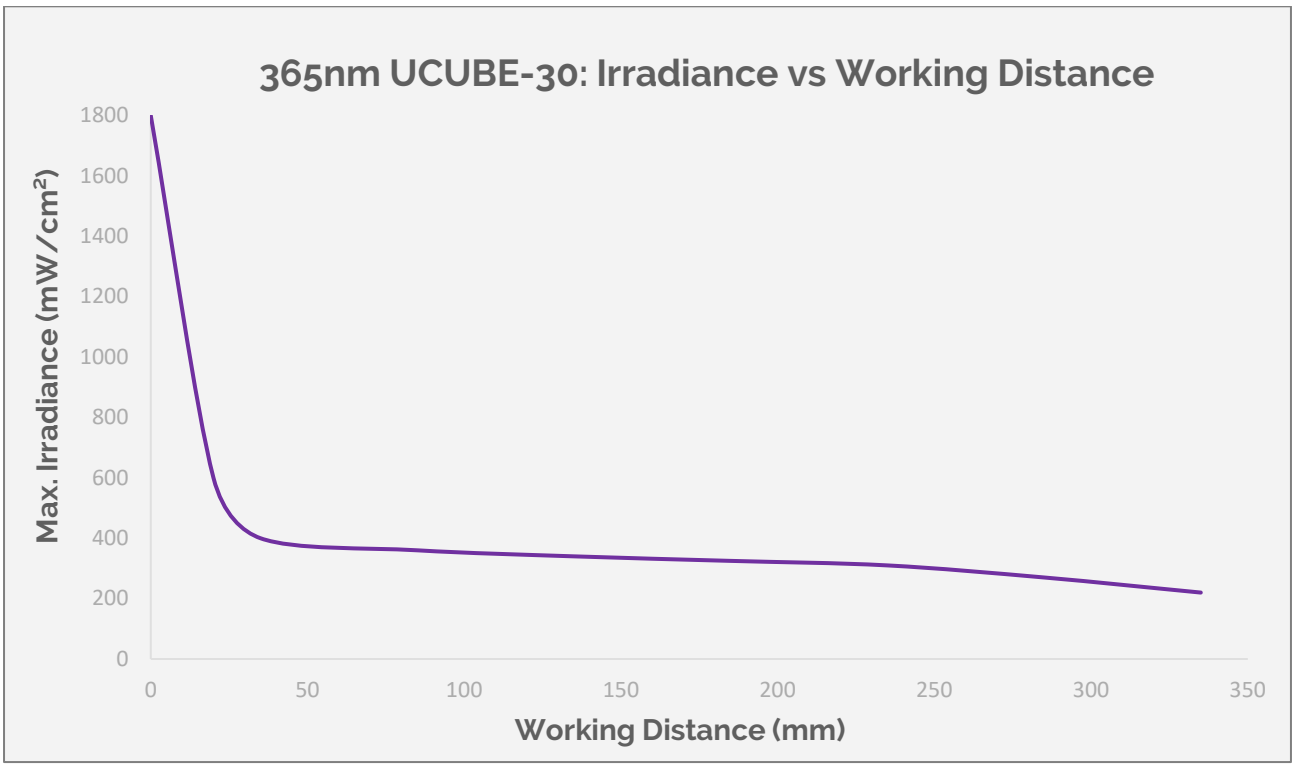


**2 With COL option**

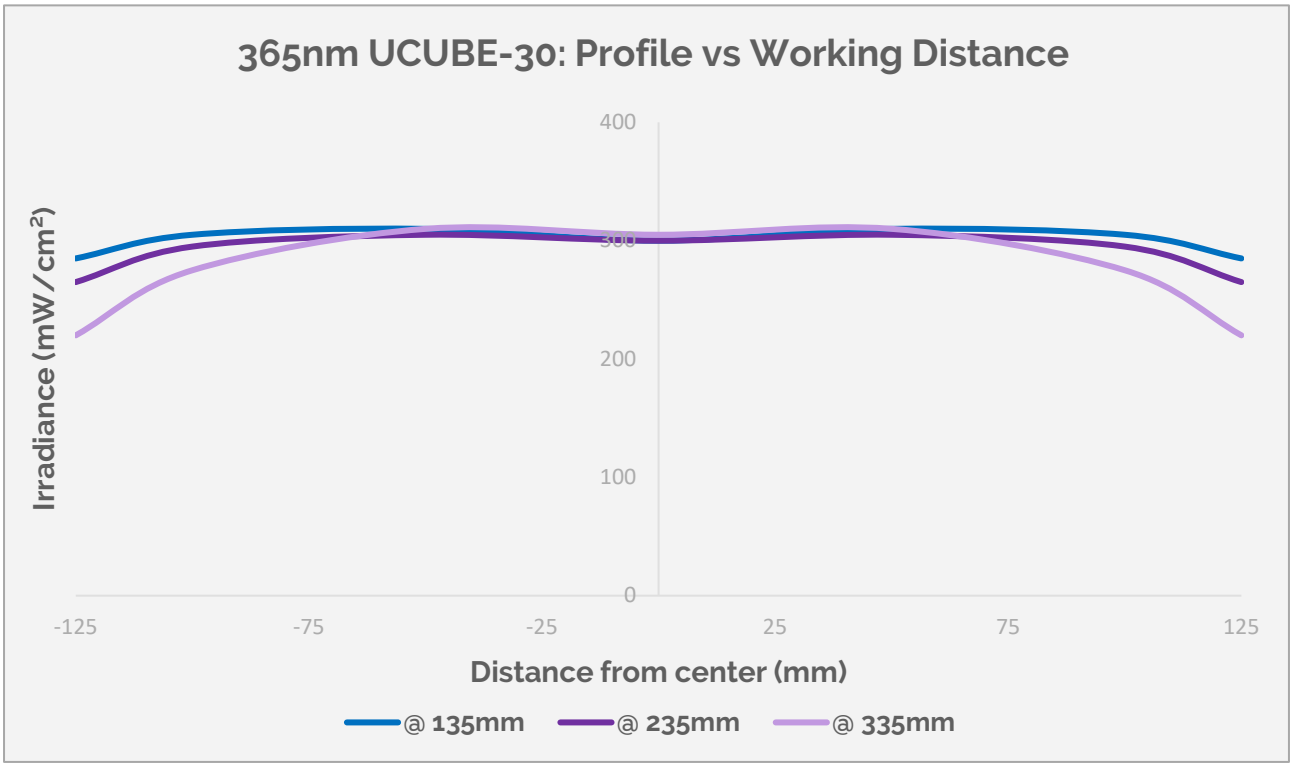




## Photometry




## Irradiation profile




Curve plotted for UVA wavelength. For UVC & UVB irradiance, please divide the irradiance value by a factor of 40. Radiometer: GIGA HERTZ OPTIK RCH-116 (June 2023). For the UV spot graph, the spot size is the exposed area where the irradiance is higher than 50% of the maximum irradiance.

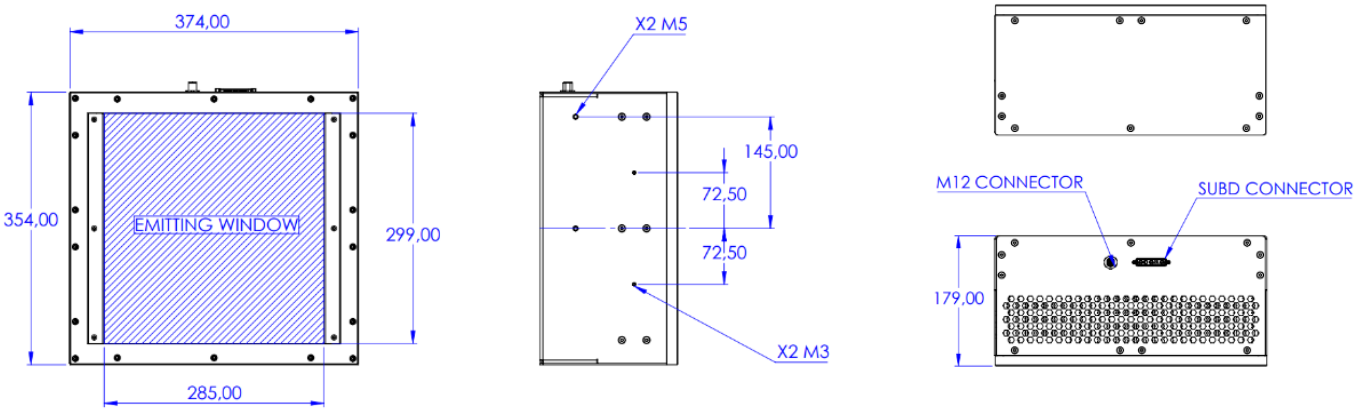


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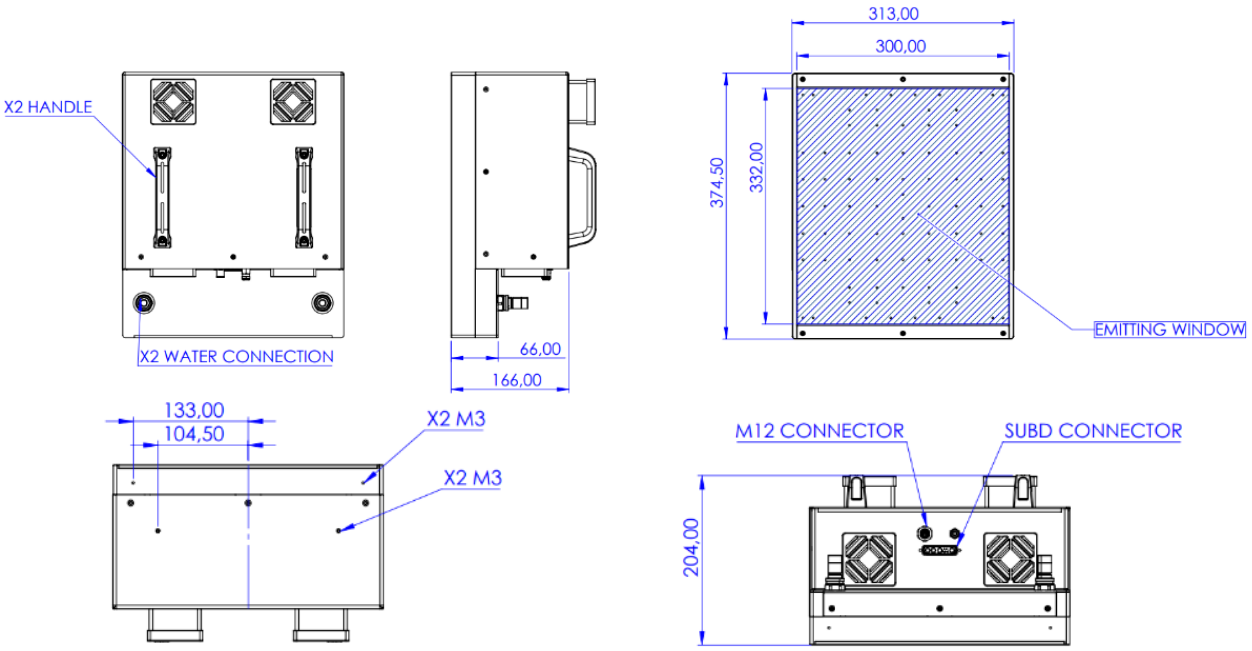
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## Mechanical dimensions

### UCUBE-30 version:




### UCUBE-30 with WATER option:

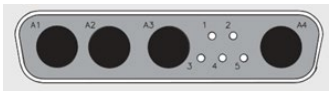


## Electronical considerations

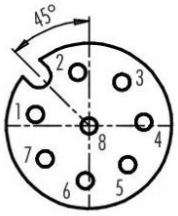
### Wiring layout

The UCUBE requires 48V DC input power. It integrates smart electronical board to achieve stable optical power and exploitable output signals. The UCUBE can be managed with a control unit (UPOWER – please refer to accessories part of this datasheet) or without a control unit through PLC wiring.

### Power connector

| Contact arrangement | Pin number | Cable color | Designation |
|---|---|---|---|
|  **Power - Male D-SUB 9W4pins** | **A1** | **Brown** | **Power supply Input – 48V DC (8,3 A max)** |
| | **A2** | **Brown** | **Power supply Input – 48V DC (8,3 A max)** |
| | **A3** | **Blue** | **Power supply Input – 0V DC (GND)** |
| | **A4** | **Blue** | **Power supply Input – 0V DC (GND)** |
| | **1, 2, 3, 4 & 5** | **-** | **Not used** |

### Signal connector (MONO wavelength version)

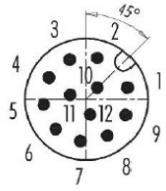
| Contact arrangement | Pin number | Cable color | Designation |
|---|---|---|---|
|  **Signal - male M12 8pins** | 1 | White | Dimming input signal – [0-10V] direct |
| | **2** | **Brown** | **Enable – (Dry contact with pin3 to enable UV emission)** |
| | **3** | **Green** | **Enable + (Dry contact with pin4 to enable UV emission)** |
| | **4** | **Yellow** | **DRIVER ERROR output – dry contact with pin 8 if there is a driver issue is detected or opened if drivers are OK.** |
| | **5** | **Grey** | **TEMPERATURE ERROR output – dry contact with pin 8 if device is overheating or opened if LED temperature is OK.** |
| | **6** | **Pink** | **UV LED ON output – dry contact with pin 8 if device is currently emitting UV or opened if UV LED are off.** |
| | **7** | **Blue** | **Power supply input – 0V DC (GND)** |
| | **8** | **Red** | **COMMON_OUT – Allows dry contact with pin 4,5 and 6. 40mA maximum per contact.** |

*Note: If connection between pins 2 and 3 is not made, the LED lamp will not switch on.*

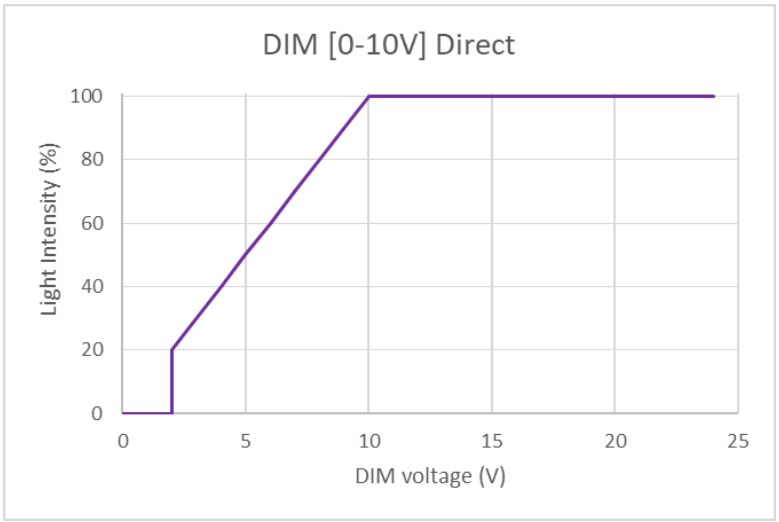

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## Signal connector (DUAL or QUADRI wavelength version)

| Contact arrangement | Pin number | Cable color | Designation |
|---|---|---|---|
|  **Signal - male M12 12pins** | **1** | **Brown** | **Enable input – 24V CC to enable LED emission and 0V to disable LED emission.** |
| | **2** | **Blue** | **Power supply input – 0V DC (GND)** |
| | *3* | *White* | *DRIVER ERROR n°1 output – 0V if there is a driver issue or 24V CC if no issue. (dual & quadri)* |
| | **4** | **Green** | **DRIVER ERROR n°2 output – 0V if there is a driver issue or 24V CC if no issue. (dual & quadri)** |
| | **5** | **Pink** | **DRIVER ERROR n°3 output – 0V if there is a driver issue or 24V CC if no issue. (only quadri)** |
| | **6** | **Yellow** | **DRIVER ERROR n°4 output – 0V if there is a driver issue or 24V CC if no issue. (only quadri)** |
| | **7** | **Black** | **UV LED ON output – 0V if all LEDs are off or 24V CC if device is currently emitting LED light.** |
| | **8** | **Grey** | **TEMPERATURE ERROR output – 0V if device is overheating or 24V CC if LED temperature is OK.** |
| | **9** | **Red** | **Dim n°1 Dimming input signal – [0-10V] direct (dual & quadri)** |
| | **10** | **Purple** | **Dim n°2 Dimming input signal – [0-10V] direct (dual & quadri)** |
| | **11** | **Grey / Pink** | **Dim n°3 Dimming input signal – [0-10V] direct (dual quadri)** |
| | **12** | **Red / Blue** | **Dim n°4 Dimming input signal – [0-10V] direct (dual quadri)** |

## Intensity Control

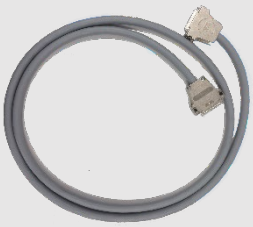
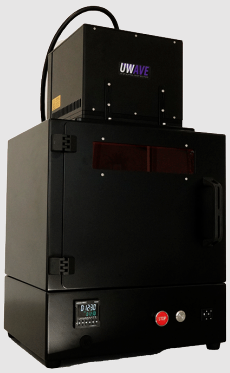



*Other Dimming signals are available upon request: 0-24V indirect, 0-10V direct, 0-10V indirect, 0-5V direct or 0-5V indirect.*


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## Accessories

| | |
|---|---|
| **Cables**<br> | One side with bare wire (towards PLC):<br>**UCAB - SUBD - FD - 13W3 - D - L A**<br>2<br>5 Cable length in meters<br>10 |
| | Both sides connector (power supply link):<br>**UCAB - SUBD - FM - 13W3 - DD - L A**<br>2<br>5 Cable length in meters<br>10 |
| **Advanced power supply** | UPOWER-1500-48 for control of x1 UCUBE-30.<br><br>*For other controlling configurations, please contact directly UWAVE team.* |
| **Easy-to-use oven with UCUBE-30 integrated on top** | CHAMBER-30-T40 to protect operators and to work in hidden time. A tray inside can be placed at different working distance from the UV light.<br><br>*For further information about CHAMBER-30-T40, please refer to CHAMBER datasheet.* |

## UV security

UWAVE products come under the standard DIN EN 62471:2008 which classified sources of optical radiation into risk groups subject to their potential photo biological hazard. Due to the emission of high UV irradiation, our products belong to Risk Group 3 (hazardous even for momentary exposure) therefore special safety measures, detailed in the following, must be observed.




Thanks to its experience and knowledge about UV risks, UWAVE offers to its customer a wide range of UV protections & services:

| | | | |
|---|---|---|---|
| **Eyes protection** | UGLASS-02: To protect eyes from direct rays.<br> | UGLASS-03: To cover all the face.<br> | |
| **Body protection** | UGLOVE-01: to protect hands.<br> | UV-SHIELD: To protect all workers around.<br> | |
| **UV measurement** | URAD-PR: Smartphone + UV LED radiometer<br> | URAD-LK: Wireless UV measuring device<br> | LEDCURE: UV values recording.<br> |
| **UWAVE expertise** | EXPOSURE LIMIT VALUE<br><br>According to European Directive 2006/25/EC. | PERFORMANCES QUALIFICATION<br><br>Monitoring of all performances of your device. | MAINTENANCE & REPAIR<br><br>Preventive maintenance on site & LED repair service. |