

UVS-200

Digital UV radiometer with RS-485 interface
in DVGW W294 case

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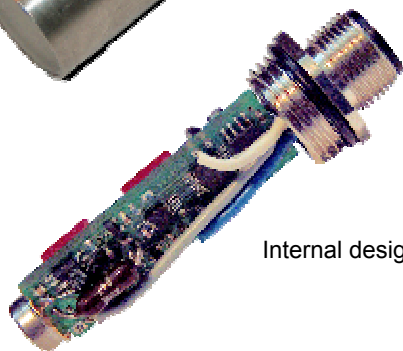
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Description: UVS-200 is complete digital, computerized UV radiometer with RS-485 interface housed in sensor case according to DVGW W294 regulations. Sensor is not sensitive to visible light and provides precise measurements of UV irradiance in narrow UV bands. Sensor can take measurements in 16 measuring ranges from $5 \mu\text{Wcm}^{-2}$ (50 mWcm^{-2}) to 500 mWcm^{-2} (5000 Wcm^{-2}). Maximum distance between sensor and monitor can reach up to 1000 m due to RS-485 interface bus transceiver installed in UVS-200.

Digital Radiometer
UVS-200



Internal design



Measuring window

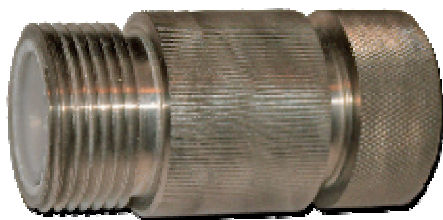


Fig. 1. Digital radiometer UVS-200 and
measuring window

Basic parameters of UVS-200

Dimensions: according to DVGW W294 rules, $75 \times \varnothing 20 \text{ mm}$
Weight: 60 g
Spectral range: 220 – 275 nm for basic UVS-200.C model
(for UVC sensing)

Operating temperature: 0 to $+60^\circ\text{C}$

Cable: 4-lead, shielded, 2x2 twisted pair

Cable length: up to 1000 m

Interface: 2-wire RS-485

Bus terminator: built-in, 150 ohm

Protocol: PLS Q&R binary,
other protocols on request

Supply voltage: +12 VDC

Current consumption: 50mA max

Connector: 5-pin M12x1 sensor male connector

Connector signals:
1. +12V (power supply)
2. -RTX (RS-485)
3. 0V (power supply ground)
4. +RTX (RS-485)
5. Shield

Measuring mode: fixed range, auto-range

Measuring ranges: 16 ranges with following FSR values:
1) 50 mWcm^{-2} ($5 \mu\text{Wcm}^{-2}$)
2) 100 mWcm^{-2} ($10 \mu\text{Wcm}^{-2}$)
3) 200 mWcm^{-2} ($20 \mu\text{Wcm}^{-2}$)
4) 500 mWcm^{-2} ($50 \mu\text{Wcm}^{-2}$)
5) 1 Wcm^{-2} ($100 \mu\text{Wcm}^{-2}$)
6) 2 Wcm^{-2} ($200 \mu\text{Wcm}^{-2}$)
7) 5 Wcm^{-2} ($500 \mu\text{Wcm}^{-2}$)
8) 10 Wcm^{-2} (1 mWcm^{-2})
9) 20 Wcm^{-2} (2 mWcm^{-2})
10) 50 Wcm^{-2} (5 mWcm^{-2})
11) 100 Wcm^{-2} (10 mWcm^{-2})
12) 200 Wcm^{-2} (20 mWcm^{-2})
13) 500 Wcm^{-2} (50 mWcm^{-2})
14) 1000 Wcm^{-2} (100 mWcm^{-2})
15) 2000 Wcm^{-2} (200 mWcm^{-2})
16) 5000 Wcm^{-2} (500 mWcm^{-2})

Resolution: 3 decimal digits in every range

UVS-200 is available in 5 options with different spectral ranges in UV band:

UV band	UVC	UVB	UVB + UVC	UVB + UVC	UVA
Wavelength [nm]	220-275	230-305	225-320	280-325	335-395
Sensor model	UVS-200.C	UVS-200.B	UVS-200.BC2	UVS-200.BC	UVS-200.A

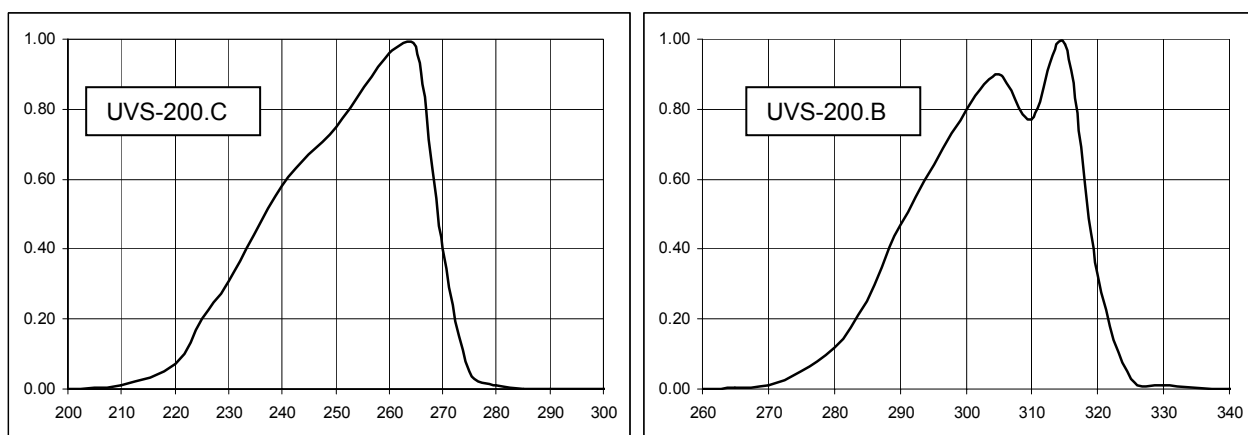


Fig.2. Spectral characteristics of sensors UVS-200.C (left) and UVS-200.B (right) - wavelength in [nm]

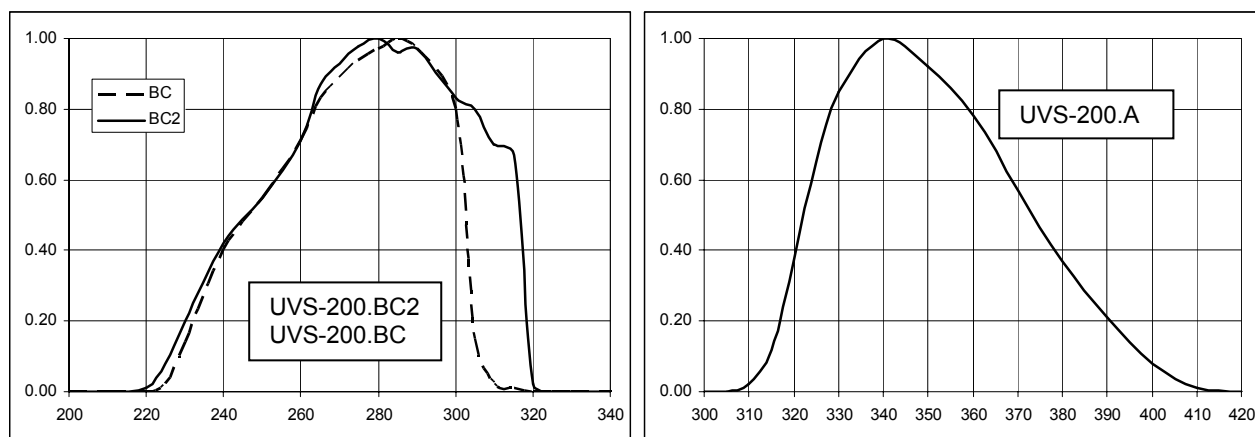
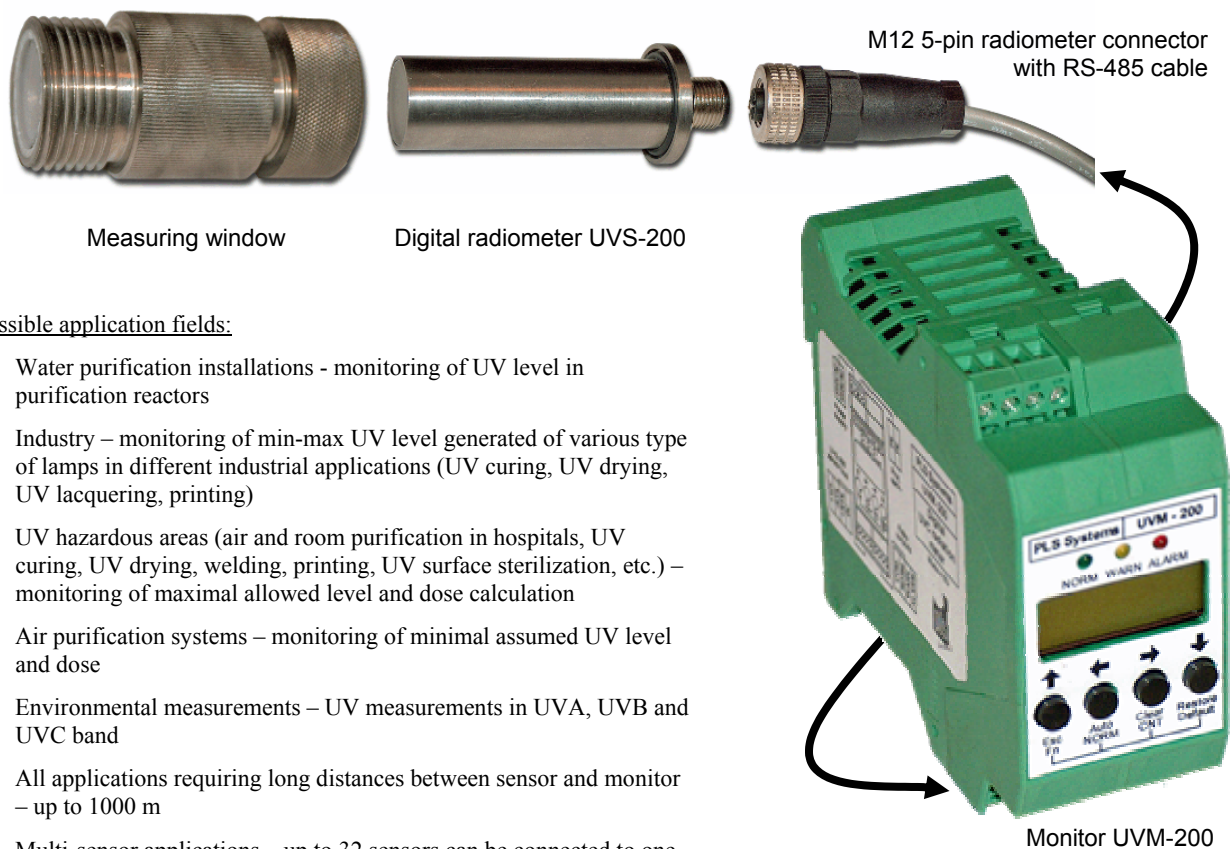


Fig.3. Characteristics of sensors UVS-200.BC, UVS-200.BC2 (left) and UVS-200.A (right) - wavelength in [nm]



Possible application fields:

- 1) Water purification installations - monitoring of UV level in purification reactors
- 2) Industry – monitoring of min-max UV level generated of various type of lamps in different industrial applications (UV curing, UV drying, UV lacquering, printing)
- 3) UV hazardous areas (air and room purification in hospitals, UV curing, UV drying, welding, printing, UV surface sterilization, etc.) – monitoring of maximal allowed level and dose calculation
- 4) Air purification systems – monitoring of minimal assumed UV level and dose
- 5) Environmental measurements – UV measurements in UVA, UVB and UVC band
- 6) All applications requiring long distances between sensor and monitor – up to 1000 m
- 7) Multi-sensor applications – up to 32 sensors can be connected to one RS-485 bus section

Fig.4. Complete UV monitoring system based on UVS-200 radiometer (sensor part) and UVM-200 monitor