

DX 6x1

Digital photo-radiometric probes



- Fast and accurate
- Interchangeable
- Low power
- Solid stand due to aluminum construction
- Optional ACCREDIA certification available

DESCRIPTION

DX 6x1 is a series of digital photo-radiometric probes for the PRO D01 / PRO D05 handheld meters.

The probes measure:

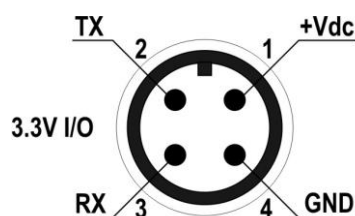
- Illuminance
- Luminance
- Irradiance (specific probes for UVA, UVB, UVC, UVBC and Blue light ranges available)
- PAR (Photosynthetically Active Radiation)

The probes are supplied factory-calibrated, and they are ready to use. The probes can be optionally supplied with a ACCREDIA calibration certificate.

The calibration data are stored in the probe, allowing for interchangeability without the need for recalibration.

Optionally available with integrated bubble level to facilitate horizontal positioning.

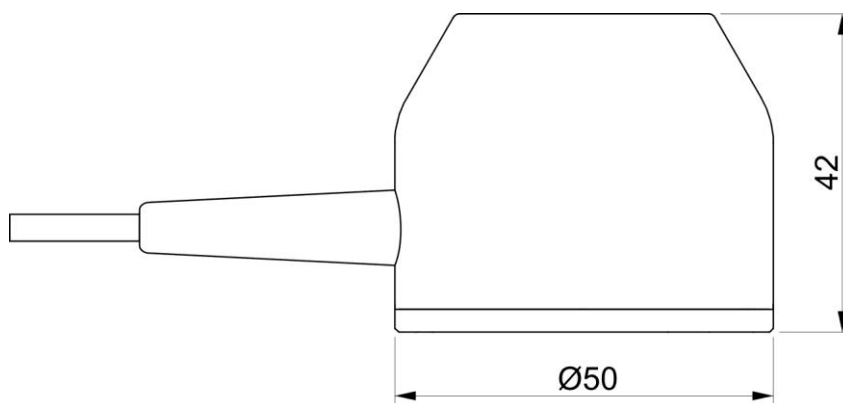
Equipped with 4-pin M12 connector.



M12 DX 6x1 sensor pin out

TECHNICAL SPECIFICATIONS

General characteristics	
Output	UART (TTL 3.3V)
Power supply	3.3...6 Vdc
Power consumption	< 1 mA typ.
Connection	Fixed cable ending with M12 connector (1, 2 or 5m)
Operating temperature	0...+50 °C
Dimensions	Ø50 x 42 mm
Weight	200 g approx.
Material	Anodized aluminium



Measurement specifications

DX 611 (Illuminance)				
Measuring range (lux)	0.10...199.99	200.0...1999.9	2000...19999	20000... 400000
Resolution (lux)	0.01	0.1	1	10
Spectral range	in accordance with standard photopic curve V(λ)			
α (temperature coefficient) f ₆ (T)	<0.05% K			
Calibration uncertainty	<4%			
f ₁ (accordance with photopic response V(λ))	<6%			
f ₂ (response as law of cosines)	<3%			
f ₃ (linearity)	<1%			
f ₄ (error in instrument reading)	<0.5%			
f ₅ (fatigue)	<0.5%			
Class	B			
1 year drift	<1%			
Reference standard	CIE n°69 - UNI 11142			

DX 621 (Irradiance)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	400...1050 nm			
Calibration uncertainty	<5%			
f ₂ (response as law of cosines)	<6%			
f ₃ (linearity)	<1%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<1%			

DX 631 (PHOTON FLOW in the chlorophyll field PAR)			
Measuring range (μmol/m ² s)	0.1... 199.99	200.0...1999.9	2000...10000
Resolution (μmol/m ² s)	0.01	0.1	1
Spectral range	400...700 nm		
Calibration uncertainty	<5%		
f ₂ (response as law of cosines)	<6%		
f ₃ (linearity)	<1%		
f ₄ (error in instrument reading)	±1digit		
f ₅ (fatigue)	<0.5%		
1 year drift	<1%		

DX 641-UVA (UVA irradiance)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	315...400 nm (Peak 365 nm)			
Calibration uncertainty	<5%			
f ₃ (linearity)	<1%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<2%			

DX 681 (Irradiance in the blue light spectral range)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	380...550 nm. action curve for blue-light induced damage B(λ)			
Calibration uncertainty	<10%			
f ₂ (response as law of cosines)	<6%			
f ₃ (linearity)	<3%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<2%			

Coming later:

DX 641-UVB (UVB irradiance)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	280...315 nm (Peak 305 nm)			
Calibration uncertainty	<5%			
f ₃ (linearity)	<2%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<2%			

DX 641-UVC (UVC irradiance)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	220...280 nm (Peak 260 nm)			
Calibration uncertainty	<5%			
f ₃ (linearity)	<1%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<2%			

DX 641-UVBC (UVBC irradiance)				
Measuring range (W/m ²)	0.0010...1.9999	2.000...19.999	20.00...199.99	200.0...1999.9
Resolution (W/m ²)	0.0001	0.001	0.01	0.1
Spectral range	210...355 nm (Peak 265 nm)			
Calibration uncertainty	<7% (calibration @ 254 nm)			
f ₃ (linearity)	<2%			
f ₄ (error in instrument reading)	±1digit			
f ₅ (fatigue)	<0.5%			
1 year drift	<2%			

DX 651 (Luminance)				
Measuring range (cd/m ²)	1.0...1999.9	2000...19999	20000...199990	200000...1999900
Resolution (cd/m ²)	0.1	1	10	100
Angle of view	2°			
Spectral range	in accordance with standard photopic curve V(λ)			
α (temperature coefficient) f ₆ (T)	<0.05% K			
Calibration uncertainty	<5%			
f ₁ (accordance with photopic response V(λ))	<8%			
f ₃ (linearity)	<1%			
f ₄ (error in instrument reading)	<0.5%			
f ₅ (fatigue)	<0.5%			
Class	C			
1 year drift	<1%			
Reference standard	CIE n°69 – UNI 11142			

DX 691-Eeff-UVBC (Weighted effective total irradiance according to UV action curve)	
Effective total irradiance	
Measuring range (W/m ²)	0.010...19.999
Resolution (W/m ²)	0.001
Spectral range	UV action curve for the measurement of erythema (250...400 nm)
Calibration uncertainty	<15%
f ₃ (linearity)	<3%
f ₄ (error in instrument reading)	±1digit
f ₅ (fatigue)	<0.5%
1 year drift	<2%
Reference standard	CEI EN 60335-2-27
UV irradiance	
Measuring range (W/m ²)	0.1... 1999.9
Resolution(W/m ²)	0.1
Spectral range	315...400 nm
UV-BC irradiance	
Measuring range (W/m ²)	0.010... 19.999
Resolution(W/m ²)	0.001
Spectral range	250...315 nm

DX 691-PHOT-UVA (Illuminance and UVA)
Illuminance specifications same as DX 610 UVA irradiance specifications same as DX 640-UVA

Ordering codes

DX 611-L02	Digital photometric probe for the measurement of illuminance, spectral response according to standard photopic vision, diffuser for cosine correction, incl. 2 m M12 connection cable.	Art.No. 486775
DX 621-L02	Digital radiometric probe for the measurement of irradiance in the spectral range 400...1050 nm, diffuser for cosine correction, incl. 2 m M12 connection cable.	Art.No. 486776
DX 631-L02	Digital quantum-radiometric probe for the measurement of photon flux in the PAR range (photosynthetically Active Radiation 400...700 nm), diffuser for cosine correction, incl. 2 m M12 connection cable.	Art.No. 486777
DX 641-UVA-L02	Digital radiometric probe for the measurement of irradiance in the 315...400 nm UVA spectral range, peak at 365 nm, quartz diffuser for cosine correction, incl. 2 m M12 connection cable.	Art.No. 486778
DX 681-L02	Digital radiometric probe for the measurement of effective irradiance in the Blue light spectral band. Spectral range 380...550 nm, diffuser for cosine correction, incl. 2 m M12 connection cable.	Art.No. 486782
DX 641-UVB-L02	Digital radiometric probe for the measurement of irradiance in the 280...315 nm UVB spectral range, peak at 305 nm, quartz diffuser for cosine correction, incl. 2 m M12 connection cable.	t.b.d.
DX 641-UVC-L02	Digital radiometric probe for the measurement of irradiance in the 220...280 nm UVC spectral range, peak at 260 nm, quartz diffuser for cosine correction, incl. 2 m M12 connection cable.	t.b.d.
DX 641-UVBC-L02	Digital radiometric probe for the measurement of irradiance in the 210...355 nm UVBC spectral range, peak at 265 nm, quartz diffuser for cosine correction, incl. 2 m M12 connection cable.	t.b.d.
DX 651-L02	Digital Photometric probe for the measurement of luminance, spectral response according to standard photopic vision, angle of view 2°, incl. 2 m M12 connection cable.	t.b.d.
DX 691-PHOT-UVA-L02	Digital combined probe for the measurement of illuminance, with standard photopic spectral response, and irradiance in the UVA spectral range. Diffuser for cosine correction. The ratio between UV irradiance and illuminance in $\mu\text{W}/\text{lumen}$ is provided, incl. 2 m M12 connection cable.	t.b.d.
DX 691-Eeff-UVBC-L02	Digital combined probe for the measurement of effective total irradiance according to UV action curve (250...400 nm). Diffuser for cosine correction. Provides the effective total irradiance (E_{eff}), the effective irradiance in the UV-CB band and the UV irradiance, incl. 2 m M12 connection cable.	t.b.d.

All probes may optionally be equipped with integrated bubble level and tripod connection thread on request

Suitable Instruments

PRO D01	1-channel handheld meter for digital probes. Supplied with 4 x AA alkaline batteries	Art.No. 486134
PRO D05.2	2-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.	Art.No. 486136
PRO D05.3	3-channel handheld data logger for digital probes. Supplied with 4 NiMH rechargeable batteries, USB cable and software downloadable from Senseca website.	Art.No. 486137