# Litemeter LM1-420



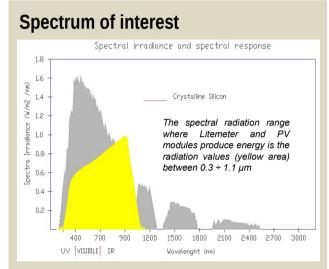
**Litemeter LM1-420** is an analog photovoltaic pyranometer (or solar irradiance sensor) equipped with a monocrystalline silicon cell and its output is temperature compensated. Manufacturing and Calibrations are done following the **IEC 61215, IEC 60904-2; 60904-4; 60904-10 regulations.** 

## **Measurement features**

**Litemeter LM1-420** is the smallest one of our range. It is suitable for little an medium size PV systems. It needs an external power supply.

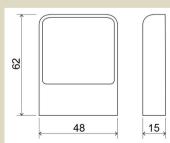
The 4-20mA current loop output allows to obtain reliability and a high immunity to signal noise. This guarantees quality signal even at long distances (30m and more) also in areas with many electromagnetic disturbances like industrial areas and relative trial systems greater than 100 Key.

photovoltaic systems greater than 100 Kw.



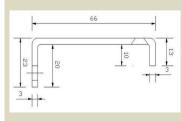
### **Calibration**

Each Litemeter LM1-420 is calibrated for comparison with our Silicon Reference Cell calibrated periodically by ISFH Institute (DAKKS) and a HP34410A Multimeter.



#### **Physical features**

Transparent resin, UV-resistant, anodized aluminum housing, high durability, practical mounting bracket with screw clamp, UV-resistant cable.



#### Most common uses

Litemeter LM1-420 is used in small-medium PV systems, but for its high EMC immunity can be used in large PV systems

Product       Litemeter LM1-420         Standard Reference       IEC 60904-2 IEC 60904-1 IEC 60904-10         Output       Analog         Input Range       irradiance       0 ÷ 1250 W / m2         Output Output Precision       Current       4 ÷ 20 mA (max output: 25mA)         Output Precision       irradiance       Temperature compensated         Working temperature       -25 ÷ +80 °C         Response Time       < 100ms         Sensor Type       Solarimeter with temperature compensation         Supply       Ext. Current loop       9 ÷ 30 Vdc         Electronics nonlinearity       5 ± 0,4 % at 1000 W/m2         Temperature drift -30 + 90°C       ≤ ± 0,4 % at 1000 W/m2         Overall measurement uncertainty       ± 2,5 % @ 1000 W/m2         Uncertainty reference cell       ± 1,2 % ( ISFH , accredited by Dakks)         PV cell       monocrystalline silicon         Encapsulant       Transparent resin, UV-resistant ( IEC 60904-2 )         Cable       UV and high temperature resistant         Connector       Female 3 pin (IP67 code)         Dimensions       48x62x15 mm without fixing bracket         Weight       100 g         IP code       IP 65	LITEMETER SENSOR		
Reference IEC 60904-4 IEC 60904-10  Output Analog  Input Range irradiance 0 ÷ 1250 W / m2  Output Current 4 ÷ 20 mA (max output: 25mA)  Output precision irradiance 7-25 ÷ +80 °C  Response Time 8-20 ms	Product		
Input Range       irradiance       0 ÷ 1250 W / m2         Output       Current       4 ÷ 20 mA (max output: 25mA)         Output precision       irradiance       ±3.5% Temperature compensated         Working temperature       -25 ÷ +80 °C         Response Time       < 100ms		IEC 60904-4	
Output       Current       4 ÷ 20 mA (max output: 25mA)         Output precision       irradiance       ±3.5% Temperature compensated         Working temperature       -25 ÷ +80 °C         Response Time       < 100ms	Output	Analog	
Output precision       irradiance       ±3.5% Temperature compensated         Working temperature       -25 ÷ +80 °C         Response Time       < 100ms	Input Range	irradiance	0 ÷ 1250 W / m2
precision       Ilradiance       Temperature compensated         Working temperature       -25 ÷ +80 °C         Response Time       < 100ms	Output	Current	. =•
temperature       23 + 400 C         Response Time       < 100ms	Output precision	irradiance	
Sensor Type       Solarimeter with temperature compensation         Supply       Ext. Current loop       9 ÷ 30 Vdc         Electronics non-linearity       < ± 0,2 %		-25 ÷ +80 °C	
SupplyExt. Current loop $9 \div 30 \text{ Vdc}$ Electronics non-linearity $< \pm 0,2 \%$ Temperature drift. -30 + 90°C $\leq \pm 0,4 \%$ at $1000 \text{ W/m}_2$ Overall measurement uncertainty $\pm 2,5 \%$ @ $1000 \text{ W/m}_2$ Uncertainty reference cell $\pm 1,2 \%$ ( ISFH , accredited by Dakks)PV cellmonocrystalline siliconEncapsulantTransparent resin, UV-resistant ( IEC 60904-2 )CableUV and high temperature resistantConnectorFemale 3 pin (IP67 code)Dimensions $48x62x15 \text{ mm}$ without fixing bracketWeight $100 \text{ g}$	Response Time	< 100ms	
Electronics non- linearity  Temperature drift30 + 90°C  Overall measurement uncertainty  Uncertainty reference cell  PV cell  Encapsulant  Cable  Cable  Connector  Dimensions  Ioop <ul> <li>4 ± 0,2 %</li> <li>4 ± 0,4 % at 1000 W/m²</li> <li>5 ± 0,4 % at 1000 W/m²</li> <li>1000 W/m²</li> <li>100</li></ul>	Sensor Type	Solarimeter with temperature compensation	
linearity       < ± 0,2 %	Supply		9 ÷ 30 Vdc
drift. -30 + 90°C $\leq \pm 0.4 \%$ at 1000 W/m2Overall measurement uncertainty $\pm 2.5 \%$ @ 1000 W/m2Uncertainty reference cell $\pm 1.2 \%$ ( ISFH , accredited by Dakks)PV cellmonocrystalline siliconEncapsulantTransparent resin, UV-resistant ( IEC 60904-2 )Cable50cm cable, UV and high temperature resistantConnectorFemale 3 pin (IP67 code)Dimensions $48x62x15 \text{ mm without fixing bracket}$ Weight $100 \text{ g}$		< ± 0,2 %	
measurement uncertainty       ± 2,5 % @ 1000 W/m²         Uncertainty reference cell       ± 1,2 % ( ISFH , accredited by Dakks)         PV cell       monocrystalline silicon         Encapsulant       Transparent resin, UV-resistant ( IEC 60904-2 )         Cable       50cm cable, UV and high temperature resistant         Connector       Female 3 pin (IP67 code)         Dimensions       48x62x15 mm without fixing bracket         Weight       100 g	drift.	≤ ± 0,4 % at 1000 W/m <sub>2</sub>	
reference cell  PV cell  monocrystalline silicon  Encapsulant  Cable  Cable  Connector  Dimensions  Transparent resin, UV-resistant (IEC 60904-2)  50cm cable, UV and high temperature resistant  Female 3 pin (IP67 code)  Dimensions  48x62x15 mm without fixing bracket  Weight  100 g	measurement	± 2,5 % @ 1000 W/m <sub>2</sub>	
Encapsulant  Transparent resin, UV-resistant (IEC 60904-2)  Cable  UV and high temperature resistant  Connector  Female 3 pin (IP67 code)  Dimensions  48x62x15 mm without fixing bracket  Weight  100 g	Uncertainty reference cell	± 1,2 % ( ISFH , accredited by Dakks)	
Cable  Cable  Connector  Dimensions  Cable  Cable  Connector  Female 3 pin (IP67 code)  A8x62x15 mm without fixing bracket  Weight  100 g	PV cell	monocrystalline silicon	
Connector  Connector  Female 3 pin (IP67 code)  Dimensions  48x62x15 mm without fixing bracket  Weight  100 g	Encapsulant	Transparent resin, UV-resistant ( IEC 60904-2 )	
Dimensions 48x62x15 mm without fixing bracket  Weight 100 g	Cable	50cm cable, UV and high temperature resistant	
Weight 100 g	Connector	Female 3 pin (IP67 code)	
	Dimensions	48x62x15 mm without fixing bracket	
IP code IP 65	Weight		100 g
	IP code	IP 65	

