

What could be easier!



OPM150 Power Meter

THE Complete
Solution!



Where What Why

The OPM150 - a versatile power monitor small enough to fit into your pocket!

USB powered and controlled!

Ideal for use in:

- the lab
- the field
- OEM applications



Highlights:

- Low Cost
- Simple and Flexible
- 1000x faster than thermopiles

Wavelength Ranges:



Wide
range of
adapters
and
accessories!

(pp 12 - 13).




The Chameleon

The OPM150 covers a very wide range of wavelengths and powers -

What would YOU like?

Various diode materials allow measurement from 250nm up to 2500nm. The calibration file of each head is stored in its connector. Thus, changing wavelength range is as simple as swapping heads - all with one base unit.


Wavelength:




					
UV-Si	Ge	VIS-InGaAs	x2.0-InGaAs	x2.2-InGaAs	x2.5-InGaAs
250-1100nm	800-1550nm	400-1600nm	800-2000nm	1000-2200nm	1300-2500nm

We offer calibrated attenuation filters which extend the range of the free beam heads by up to three orders of magnitude.

Calibrated integrating spheres compatible to the OPM150 system round up the selection.

Power*:

		
1nW-3mW	10nW-30mW	100nW-300mW

				
P10	P20	SP20	SP50	SP100
2μW-200mW	7μW-700mW	5μW-500mW (int.) 150μW-20W (ext.)	40μW-5W (int.) 1mW-40W (ext.)	150μW-20W (int.) 4mW-100W (ext.)

* Data for UVS option at 600nm and base module 30.070.00002.
(int. = internal photodiode; ext. = external photodiode)

With a response time of 100μs and sampling rates up to 600S/s, there is much more to see than with a thermopile sensor. And no thermal drift to worry about either!

Fit it in!

When designing this flexible system we put emphasis on the compatibility to standard optomechanical systems.

The head diameter is 35mm, the “nose” is 25mm. This fits into several standard cage systems. The front thread system allows direct use of Qioptic components. Adapters are available to match other standard systems (pp.12 - 13).

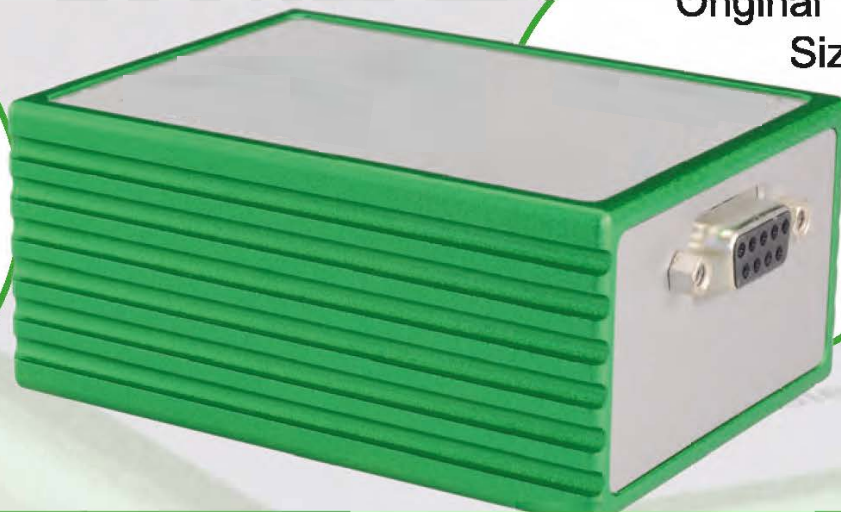
M6 and 8-32 taps on the underside serve for post mounting.



Just in Case - The Basics!

Very Compact
for
simple integration
in
OEM systems!

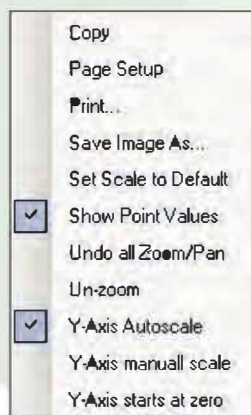
Original
Size!



Order Code		30.070.00002	30.070.00058	Units
Input				
Max. Current		12	4	mA
Output				
Connectors		DB9 (detector head) and USB	DB9 (detector head), BNC and USB	
Bandwidth		10	100	kHz
Sampling rate	GUI-Control Direct polling		30 600	S/s
Gain stages		1, 10, 100, 1000, 10000		V/mA
Accuracy	Base Unit		± 1	%
Accuracy	Detector		± 4	%
Reproducibility	Detector		± 1	%
Linearity	Detector		± 0.2	%
Supply				
Type		USB		
Dimensions				
	Basemodule Head	60 x 81 x 36 mm (W x L x H) 35 x 30 (φ x L)		mm

Graphical software with a clear layout and practical functionality.

SDK with graphical software, source code, LabVIEW*-vi and command list for virtual COM-port (pp.14 - 15).

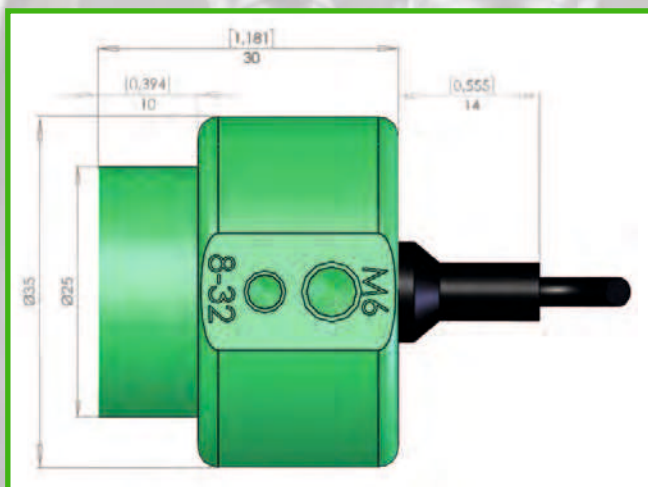


* LabVIEW is a registered trade mark of National Instruments Corp.

Free Beam Heads - Specs and Tecs

Choose from our wide range of **detector heads** - **get the facts here!**

When connected to the base unit, each head is automatically recognized and its individual calibration data are uploaded to the system.



Highlights:

- Low Cost
- Hot Swappable
- Compact

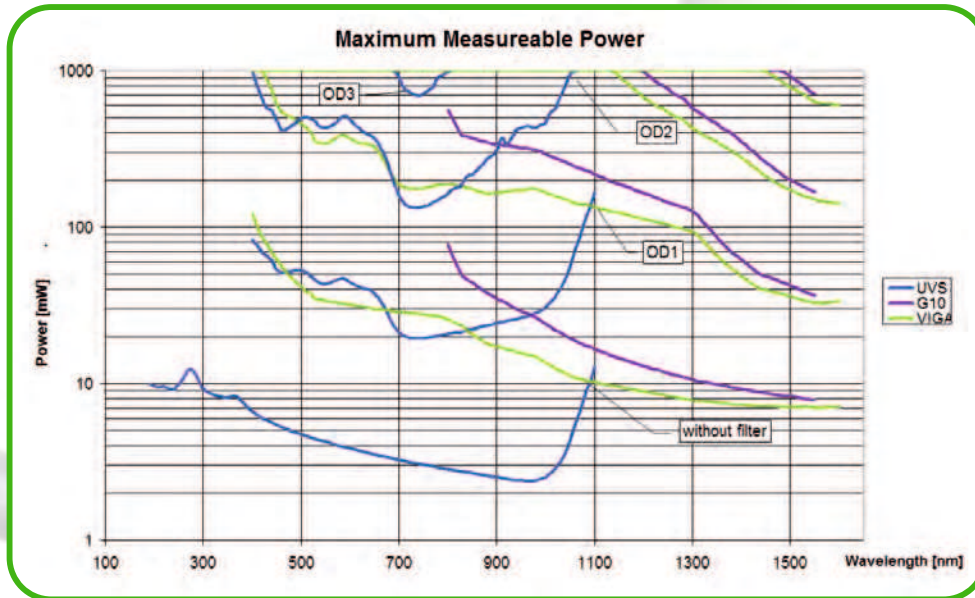
Item and order code	Photo	Wavelength range	Active area	Power MIN.	Power MAX.
UVS Art.: 30.070.00004		250-1100nm	φ9mm Si (UV extended)	1nW (at 600nm)	3mW (at 600nm)
UVS-S ¹ Art.: 30.070.00047		250-1100nm	φ9mm Si (UV extended)	1nW (at 600nm)	3mW (at 600nm)
G5 Art.: 30.070.00010		800-1550nm	φ5mm Ge	1μW (at 1550nm)	8mW ² /4mW ³ (at 1550nm)
G10 Art.: 30.070.00011		800-1550nm	φ9mm Ge	1μW (at 1550nm)	8mW ² /4mW ³ (at 1550nm)
VIGA Art.: 30.070.00006		400-1600nm	φ3mm In-GaAs (VIS extended)	1nW (at 1550nm)	7mW ² /4mW ³ (at 1550nm)
x2.0IGA Art.: 30.070.00055		800-2000nm	φ3mm InGaAs (IR extended)	1nW (at 1550nm)	3mW (at 1550nm)

¹ With SMA fibre tap for auxiliary measurements such as spectrometry.

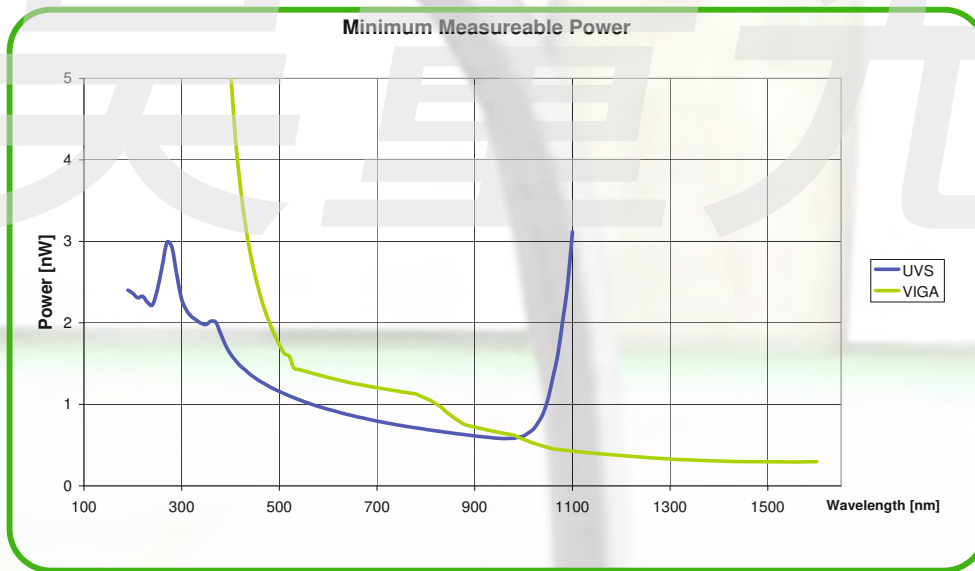
² With base module 30.070.00002.

³ With base module 30.070.00058.

Maximum measurable powers ¹:



Minimum measurable powers:



Complete sets comprising of:

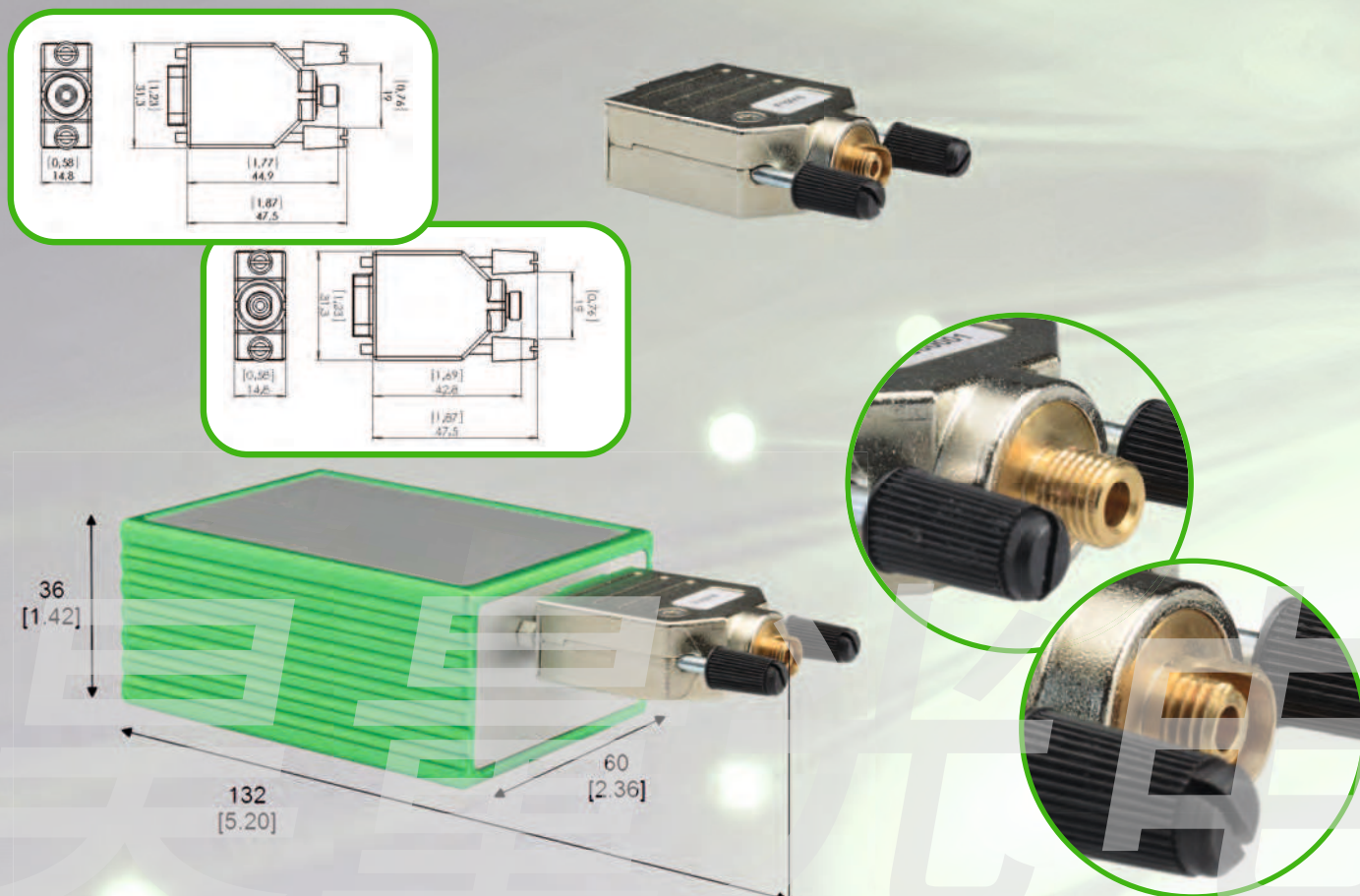
- Optical power Monitor OPM150 base module
- Filter for OPM150, OD1,
- Filter for OPM150, OD2,
- Fibre adapter, FC
- Carrying case
- **Optionally: head OPM150UVS or OPM150G10**

¹ With base module 30.070.00002.



Fibre Heads - Specs and Tecs

For fibre optic applications we offer compact heads with the detector integrated into the connector. When connected to the base unit, each head is automatically recognized and its individual calibration data are uploaded to the system.

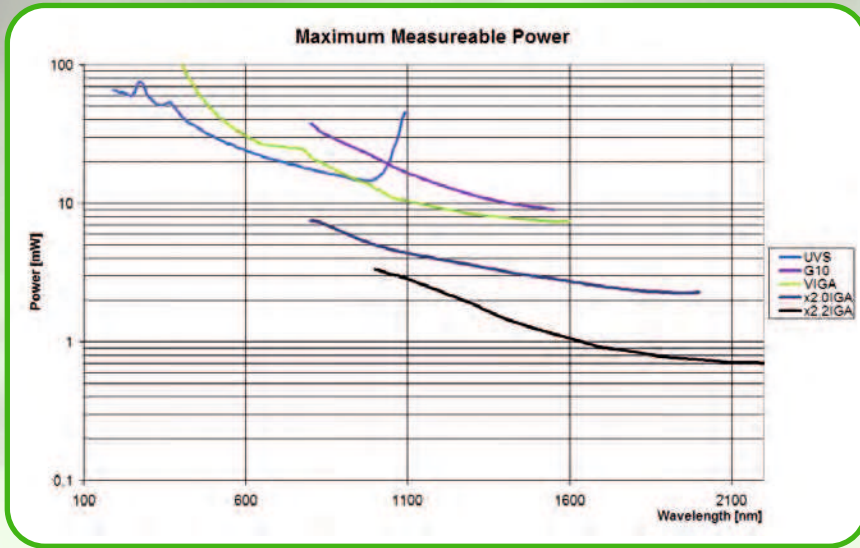


Item and order code	Wavelength range	Max. fibre core @ NA	Power MIN.	Power MAX.
UVSFC 30.070.00053 UVSSMA 30.070.00051	250-1100nm	φ1500μm at NA 0.39 φ2000μm at NA 0.22	4nW (at 600nm)	4mW (at 600nm)
G3FC 30.070.00026 G3SMA 30.070.00041	800-1550nm	φ1000μm at NA 0.39 φ1500μm at NA 0.22	1μW (at 1550nm)	8 1/4 ² mW (at 1550nm)
VIGAFC 30.070.00012 VIGASMA 30.070.00054	400-1600nm	φ550μm at NA 0.22	2nW (at 1550nm)	12 1/7 ² mW (at 1550nm)
x2.0IGAFC 30.070.00043 x2.0IGASMA 30.070.00057	800-2000nm	φ200μm at NA 0.22	2nW (at 1550nm)	10 ^{1/5} mW (at 1550nm)
x2.2IGAFC 30.070.00052 x2.2IGASMA 30.070.00056	1000-2200nm	φ200μm @ NA 0.22	2nW (at 1550nm)	10 ^{1/5} mW (at 1550nm)

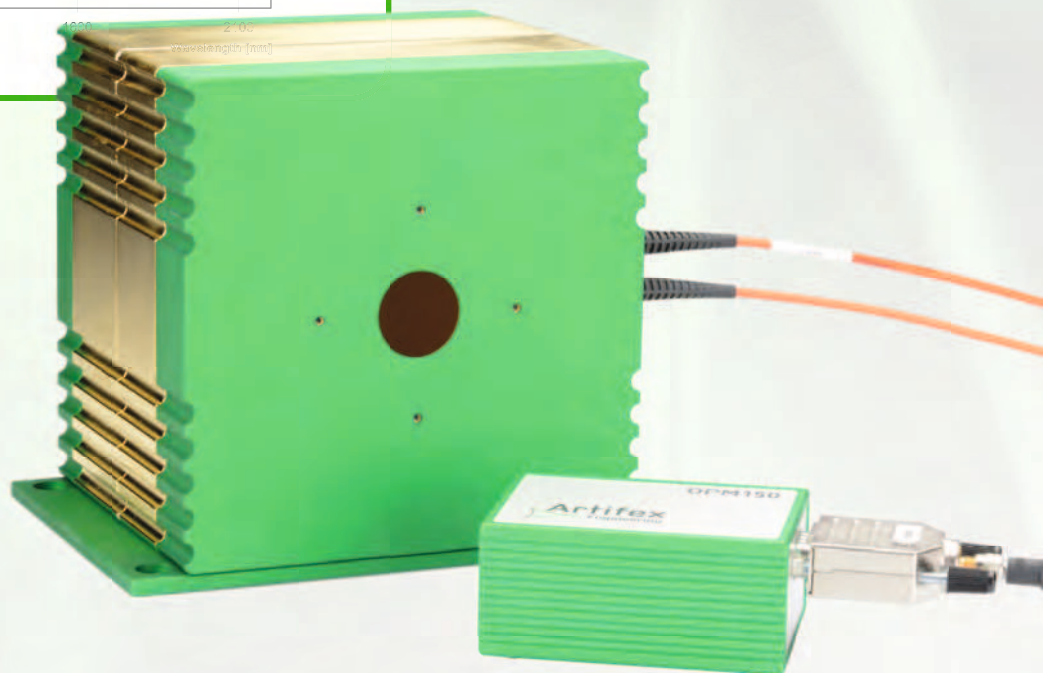
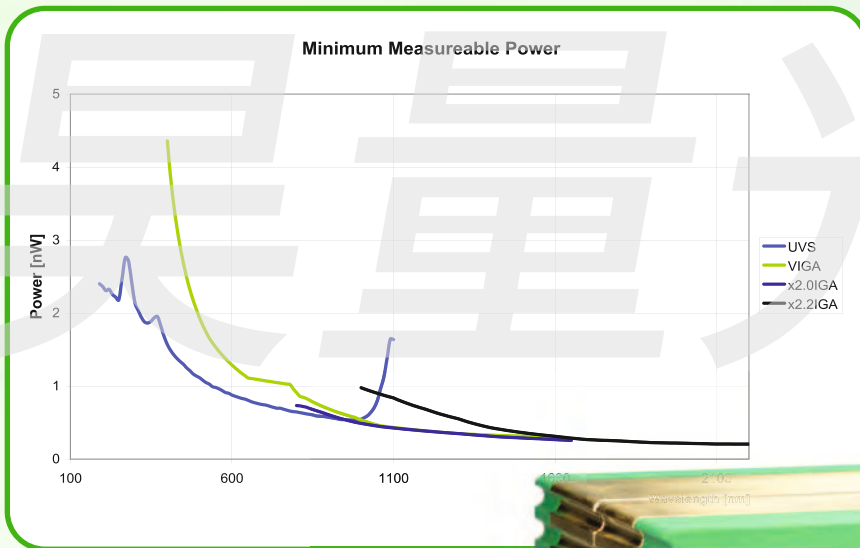
¹ With base module 30.070.00002.

² With base module 30.070.00058.

Maximum measurable powers:



Minimum measurable powers:



Application idea:

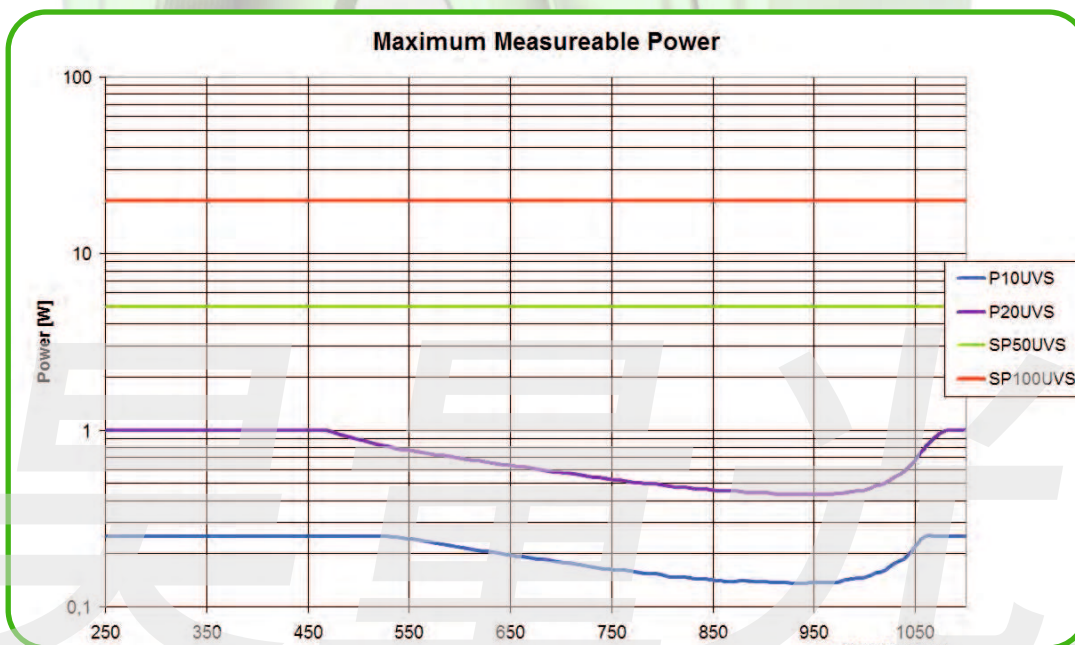
High power (kW) CW measurement 1000x faster than thermopiles!

Integrating Spheres - Specs and Tecs

All of our standard polymer integrating spheres are offered with connectors implementing a memory chip. When connected to the base unit, each head is automatically recognized and its individual calibration data are uploaded to the system. For higher power handling, the 50mm and 100mm polymer as well as the gold integrating spheres may be used in conjunction with an optical fibre and fibre head (pp. 8 - 9).

Integrating spheres are also available separately.

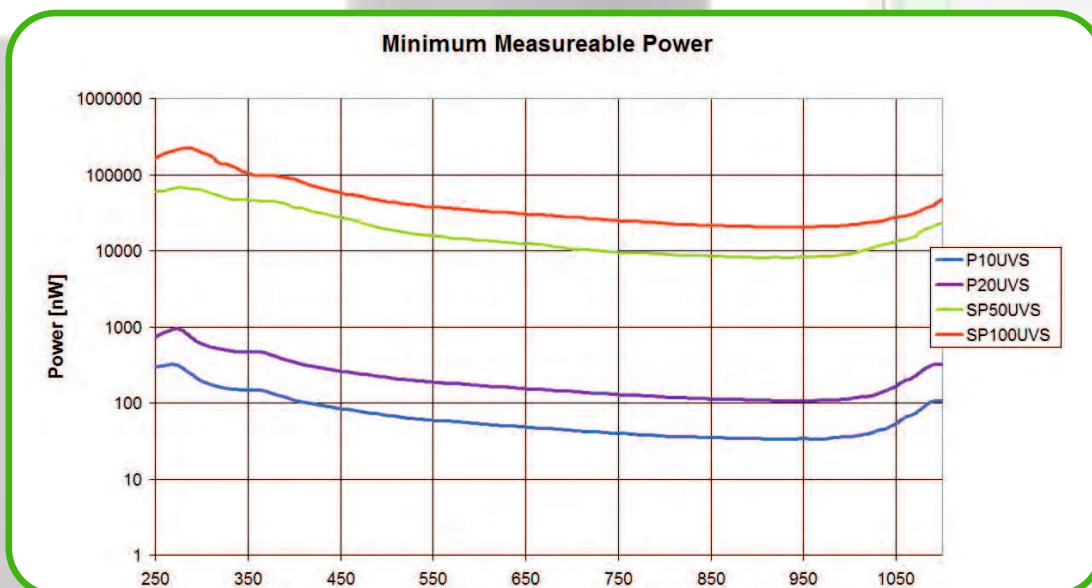
Maximum measurable powers:



Maximum power density at the point of first impact (back wall):

- Polymer spheres: 2000W/cm²
- Gold: 5000 W/cm²

Minimum measurable powers:




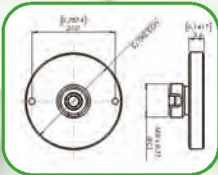

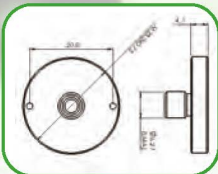

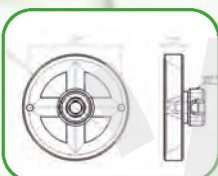

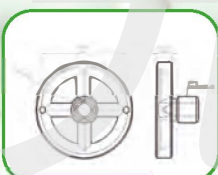



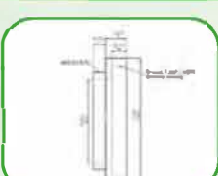




Integrating Spheres - Specs and Tecs

Item and order code	Photo	φ Input	Wavelength range	Power Range
P10UVS Art.: 20.220.00018		3.5	250 - 1100nm	2μW - 200mW at 600nm
P10G Art.: 20.220.00019			800 - 1550nm	125μW - 250mW at 1550nm
P10VIGA Art.: 20.220.00020			400 - 1600nm	1μW - 250mW at 1550nm
P10x2.0IGA Art.: 20.220.00049			800 - 2000nm	1μW - 250mW at 1550nm
P10x2.2IGA Art.: 20.220.00050			1000 - 2200nm	1μW - 100mW at 1550nm
P20UVS Art.: 20.220.00021		7.0	250 - 1100nm	5μW - 700mW at 600nm
P20G Art.: 20.220.00022			800 - 1550nm	200μW - 1W at 1550nm
P20VIGA Art.: 20.220.00023			400 - 1600nm	2μW - 700mW at 600nm
P20x2.0IGA Art.: 20.220.00051			800 - 2000nm	2μW - 700mW at 1550nm
P20x2.2IGA Art.: 20.220.00052			1000 - 2200nm	2μW - 700mW at 1550nm
M8UVS Art.: 20.220.00056		7.0	250 - 1100nm	5μW-500mW at 600nm
M8G Art.: 20.220.00057			800 - 1550nm	150μW-400mW at 1550nm
M8VIGA Art.: 20.220.00061			400 - 1600nm	2μW-400mW at 1550nm
M8x2.0IGA Art.: 20.220.00062			800 - 2000nm	2μW-400mW at 1550nm
M8x2.2IGA Art.: 20.220.00063			1000 - 2200nm	2μW-400mW at 1550nm
M8UVS Art.: 20.220.00056		12.5	250 - 1100nm	40μW - 5W at 600nm
M8G Art.: 20.220.00057			800 - 1550nm	1mW - 2W at 1550nm
M8VIGA Art.: 20.220.00061			400 - 1600nm	10μW - 2W at 1550nm
M8x2.0IGA Art.: 20.220.00062			800 - 2000nm	10μW - 2W at 1550nm
M8x2.2IGA Art.: 20.220.00063			1000 - 2200nm	10μW - 2W at 1550nm
M12UVS Art.: 20.220.00064		25.0	250 - 1100nm	150μW - 20W at 600nm
M12G Art.: 20.220.00065			800 - 1550nm	4mW-10W at 1550nm
M12VIGA Art.: 20.220.00058			400 - 1600nm	40μW - 10W at 1550nm
M12x2.0IGA Art.: 20.220.00059			800 - 2000nm	40μW - 10W at 1550nm
M12x2.2IGA Art.: 20.220.00060			1000 - 2200nm	40μW - 10W at 1550nm


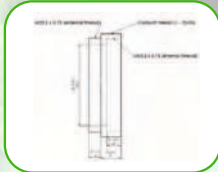

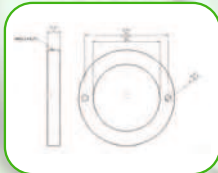

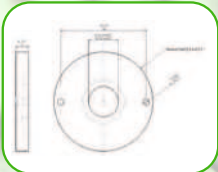

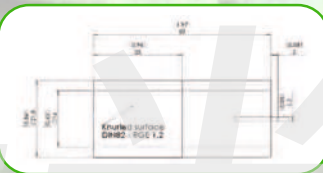



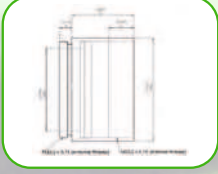

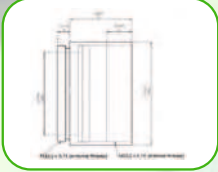

Let's Connect!

Adapters and accessories:

We offer this modular instrument with a wide range of accessories to ensure absolute flexibility and ease of use.

Item and order code	Photo	CAD	Application
Fibre adapter, FC Art.: 30.070.00022			Measuring FC-fibres with a free beam head
Fibre adapter, SMA Art.: 30.070.00027			Measuring SMA-fibres with a free beam head
Fibre adapter, FC Art.: 30.070.00077			Measuring FC-fibres with an integrating sphere
Fibre adapter, SMA Art.: 30.070.00078			Measuring SMA-fibres with an integrating sphere
Fibre adapter Art.: 30.070.00036			Measuring 1.25mm ferruled fibres with a free beam head
Adapter to lens tube (f) Art.: 20.430.00007			Adapt OPM150 thread to female 1.035"x40 TPI thread
Adapter to lens tube (m) Art.: 20.430.00004			Adapt OPM150 thread to male 1.035"x40 TPI thread
Adapter to C-Mount (f) Art.: 20.430.00006			Adapt OPM150 thread to female C-Mount (1"-32) thread

Let's Connect!

Item and order code	Photo	CAD	Application
Adapter to C-Mount (m) Art.: 20.430.00005			Adapt OPM150 thread to male C-Mount (1"-32) thread
Retainer Ring Art.: 20.430.00008			Fitting filters etc. directly into head
Aperture 7 mm Art.: 20.430.00023			Reduce aperture to $\phi 7\text{mm}$ for irradiance measurements according to ANSI Z136.1. ¹
Adapter Mounting Tool Art.: 20.430.00018			Mounting of adapters and retainer rings.
Filter Mount Art.: 30.070.00017			Mounting of customer's own filters. ²
Filter OD1 Art.: 30.070.00014			Extend power range approximately 10x. ³
Filter OD2 Art.: 30.070.00015			Extend power range approximately 100x. ³
Carrying Case Art.: 30.070.00069			For compact and organized storage of the OPM150.

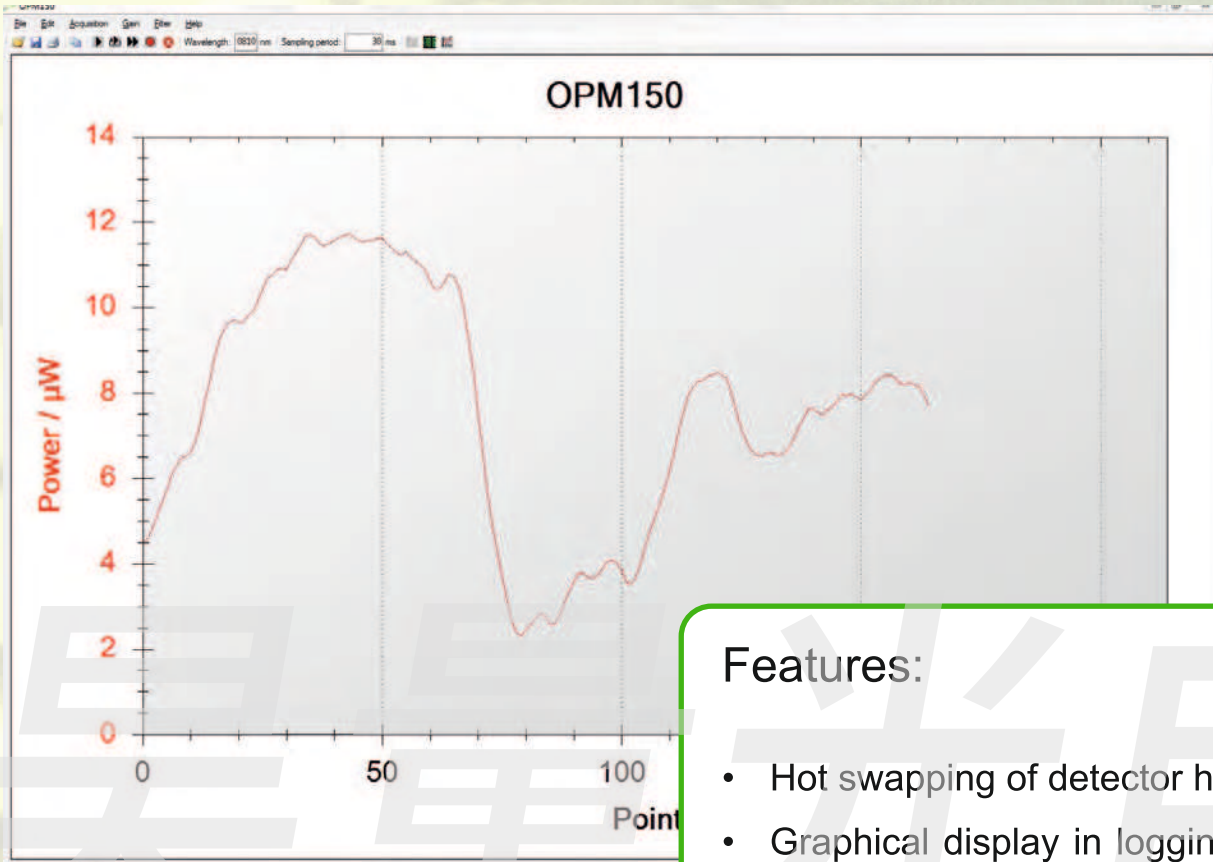
¹ Laser safety determination. Suitable only for heads and integrating spheres with $\phi > 7\text{mm}$ detector area or input aperture respectively.

² An example of a filter file may be downloaded from our website. Overwrite the data in this file with your own filter calibration data for use with the "filter" function in the OPM150 software.

³ See graph on page 7.

The Software - Integration Made Easy!

The GUI is well structured and simple to use.



Features:

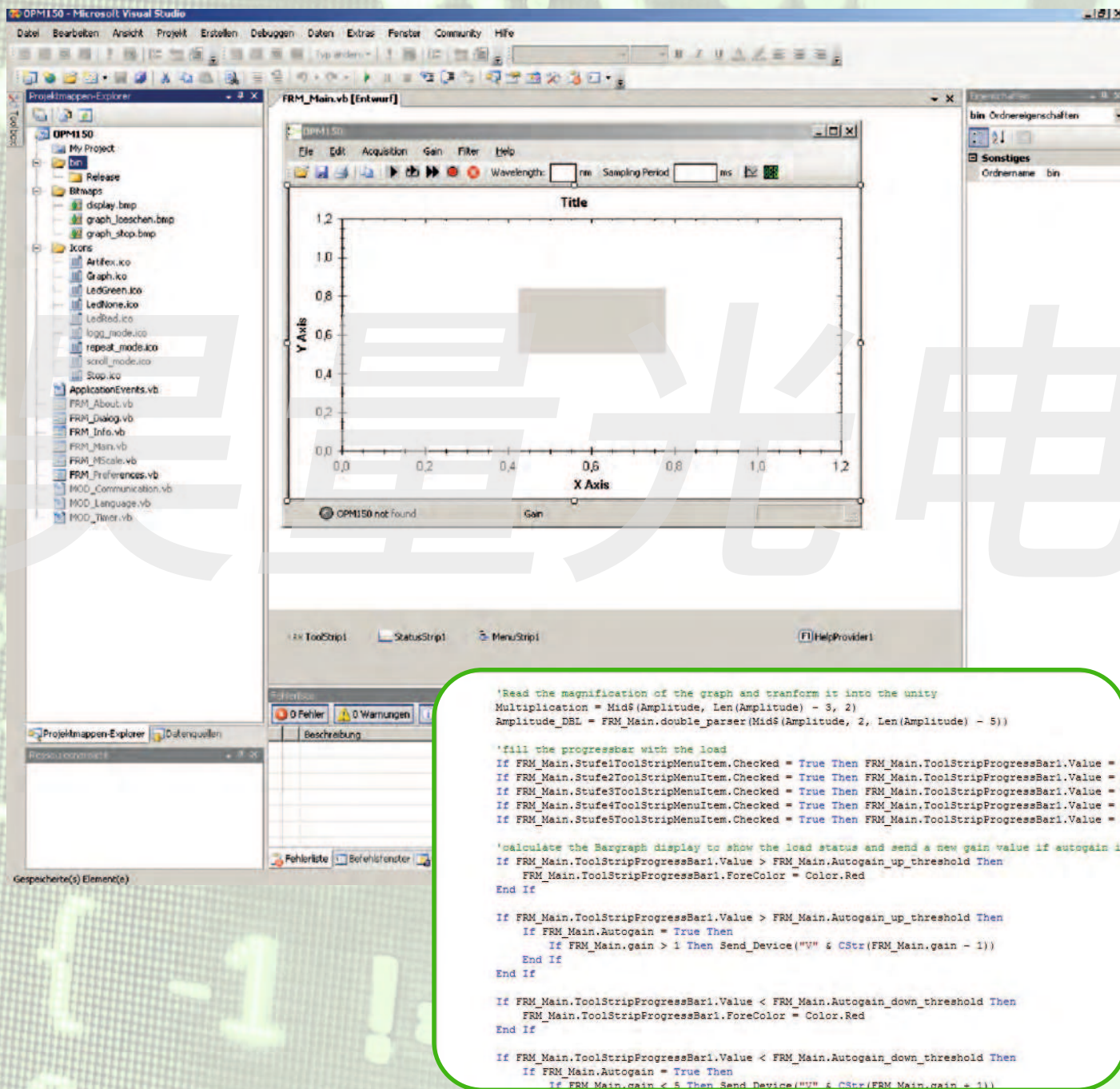
- Hot swapping of detector heads
- Graphical display in logging, scope and scroll modes
- Numerical display
- Averaging
- Export to csv-file
- Export graphs in various formats

1,17 μW

The Software - Integration Made Easy!

Our optical power monitor OPM150 comes with a full software development kit (SDK):

- Graphical user interface (GUI)
- Source code of the GUI (VB.net)
- LabVIEW® demo VI
- Command list for control via the virtual COM port



Our philosophy: Make it as simple as possible to use this instrument!

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Summary

The OPM150 is a versatile power monitor small enough to fit into your pocket.



Highlights:

- USB powered and controlled
- Various heads covering 250 - 2500nm and 1nW to 8mW
- Up to 5kW power measurement with integrating spheres
- 30 Hz update rate with GUI, 600 Hz as data logger
- Plenty of accessories to enhance ease of application

Your problem is our challenge - flexibility is our standard:

We will gladly adapt, for example, the photodiode or the aperture to suit your application.

Let us know your requirements!