

OPM150

POWER METER

THE COMPLETE SOLUTION



WHAT COULD BE EASIER?

Your Supplier
for Instruments & Optics



ISO 9001 CERTIFIED
www.artifex-engineering.com



What? Where? Why?

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

USB powered and controlled!

Ideal for:

the Lab

the field

OEM applications

Highlights:

Low Cost

Simple & Flexible

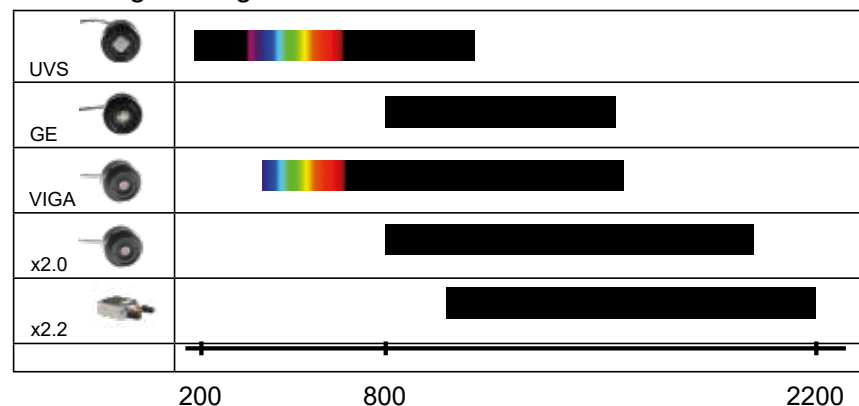
1000x faster than thermopiles



Wide Range of Adapters &
Accessories
(pp 12 - 13.)



Wavelength Ranges:





What would **YOU** like?

Various diode materials allow measurement from 250nm up to 2490nm. 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:

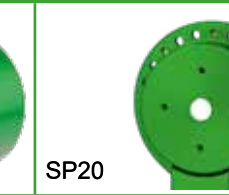
					
UV-Si	Ge	VIS-InGaAs	x2.0-InGaAs	x2.2-InGaAs	x2.5-InGaAs
250-1000nm	800-1550nm	400-1600nm	800-2000nm	1000-2200nm	1300-2490nm

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

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

Power *:

		
15nW-3mW	150nW-30mW	1µW-300mW

				
P10	P20	SP20	SP50	SP100
400nW-150mW	1µW-500mW	1µW-500mW (int.) 10µW-20W (ext.)	4µW-2W (int.) 10µW-40W (ext.)	15µW-8W (int.) 100µW-100W (ext.)

* Data for UVS option at 950nm 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!



Original
Size!

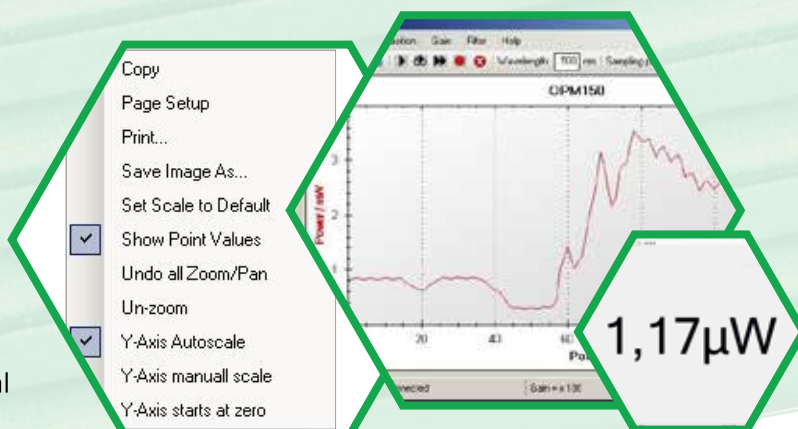
Very
Compact
for
simple integration
in
OEM systems!

Order Code		30.070.00002	30.070.00058	30.070.00112	Units
Input					
Max. Current		12	4	12	mA
Output					
Connectors		DB9 (detector head) and USB	DB9 (detector head), BNC and USB	DB9 (detector head) and USB	
Bandwidth		10	100	0,005	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	± 5			%
Reproducibility	Detector	± 1			%
Supply					
Type		USB			
Dimensions					
	Basemodule Head	60 x 81 x 36 mm (B 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.

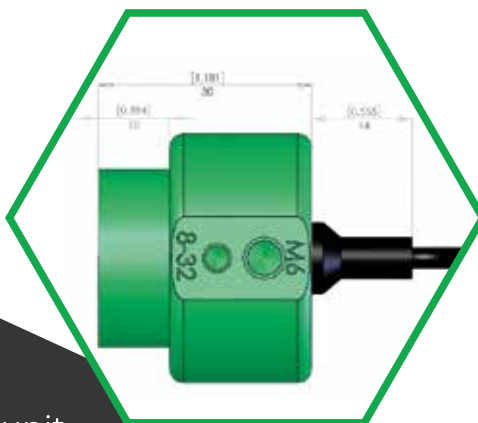




Free Beam Heads - Specs & Tecs!

Choose from our wide range of **detector heads!**

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

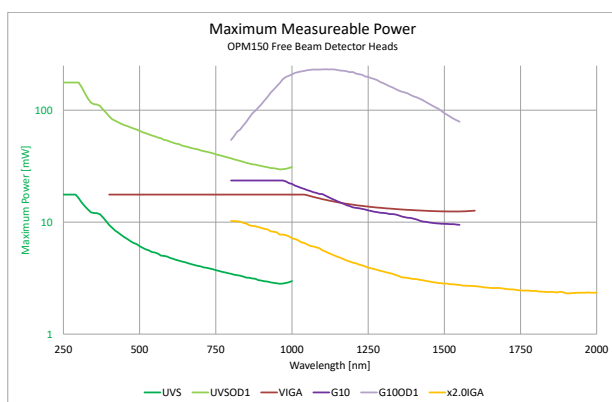
Item and order code	Photo	Wavelength range	Active area	Power MIN. (typical)	Power MAX. (typical)
UVS Art.: 30.070.00004		250-1000nm	φ9mm Si (UV extended)	15nW (at 950nm)	3mW (at 950nm)
UVS-S ¹ Art.: 30.070.00047		250-1000nm	φ9mm Si (UV extended)	15nW (at 950nm)	3mW (at 950nm)
UVSOD1 Art.: 30.070.00102		250-1000nm	φ9mm Si (UV extended)	150nW (at 950nm)	30mW (at 950nm)
G10 Art.: 30.070.00011		800-1550nm	φ9mm Ge	200nW (at 1550nm)	8mW ² /4mW ³ (at 1550nm)
G10OD1 Art.: 30.070.00093		800-1550nm	φ9mm Ge	2μW (at 1550nm)	80mW ² /40mW ³ (at 1550nm)
VIGA Art.: 30.070.00006		400-1600nm	φ3mm InGaAs (VIS extended)	100nW (at 1550nm)	12mW ² /6mW ³ (at 1550nm)
x2.0IGA Art.: 30.070.00055		800-2000nm	φ3mm InGaAs (IR extended)	250nW (at 1550nm)	3mW (at 1550nm)

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

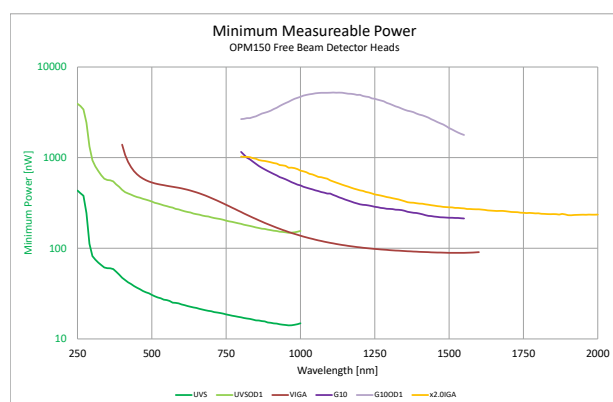
² With base module 30.070.00002 and 30.070.00112.

³ With base module 30.070.00058.

Free Beam Heads - Specs & Tecs!



Maximum measurable powers¹



Minimum measurable powers¹

Complete sets comprising of:

- Optical power Monitor OPM150 base module
- Filter for OPM150, OD1
- Filter for OPM150, OD2
- Fibre adapter, FC
- Carrying case

Optionally:

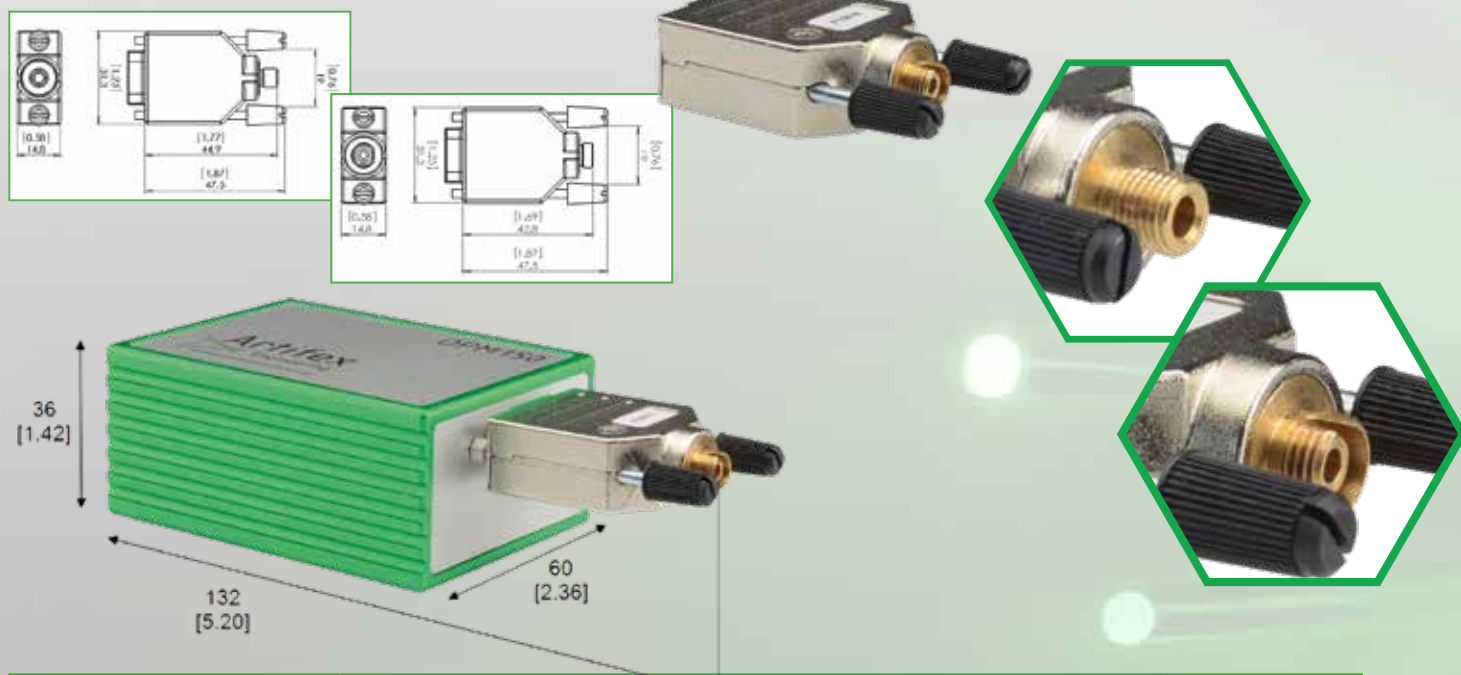
head OPM150UVS or OPM150G10

¹ With base module 30.070.00002.



Fibre Heads - Specs & 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	250-1000nm	$\phi 1500\mu\text{m}$ at NA 0.39 $\phi 2000\mu\text{m}$ at NA 0.22	3nW (at 950nm)	15 ¹ / ₁₀ ² mW (at 950nm)
UVSOD1FC 30.070.00075 UVSOD1SMA 30.070.00129	250-1000nm	$\phi 1500\mu\text{m}$ at NA 0.39 $\phi 2000\mu\text{m}$ at NA 0.22	30nW (at 950nm)	175 ¹ / ₁₀₀ ² mW (at 950nm)
G3FC 30.070.00026 G3SMA 30.070.00041	800-1550nm	$\phi 1000\mu\text{m}$ at NA 0.39 $\phi 1500\mu\text{m}$ at NA 0.22	50nW (at 1550nm)	10 ¹ / ₅ ² mW (at 1550nm)
G3OD1FC 30.070.00076 G3OD1SMA 30.070.00130	800-1550nm	$\phi 1000\mu\text{m}$ at NA 0.39 $\phi 1500\mu\text{m}$ at NA 0.22	400nW (at 1550nm)	100 ¹ / ₅₀ ² mW (at 1550nm)
VIGAFC 30.070.00012 VIGASMA 30.070.00054	400-1600nm	$\phi 550\mu\text{m}$ at NA 0.22	2nW (at 1550nm)	15 ¹ / ₁₀ ² mW (at 1550nm)
x2.0IGAFC 30.070.00043 x2.0IGASMA 30.070.00057	800-2000nm	$\phi 200\mu\text{m}$ at NA 0.22	2nW (at 1550nm)	3mW (at 1550nm)
x2.2IGAFC 30.070.00052 x2.2IGASMA 30.070.00056	1000-2200nm	$\phi 200\mu\text{m}$ @ NA 0.22	40nW (at 1550nm)	2mW (at 1550nm)
x2.5IGAFC 30.070.00099 x2.5IGASMA 30.070.00100	1300-2490nm	$\phi 200\mu\text{m}$ @ NA 0.22	40nW (at 1550nm)	2mW (at 1550nm)

¹ With base module 30.070.00002 and 30.070.00112.

² With base module 30.070.00058.

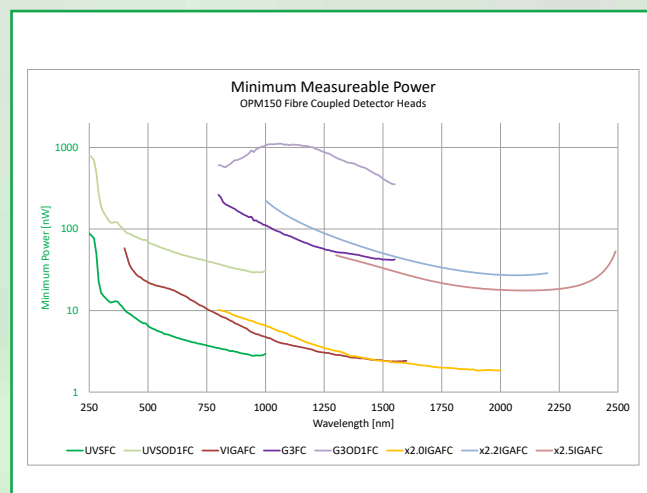
Fibre Heads - Specs & Tecs!



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邮箱: sales@highlightoptics.com



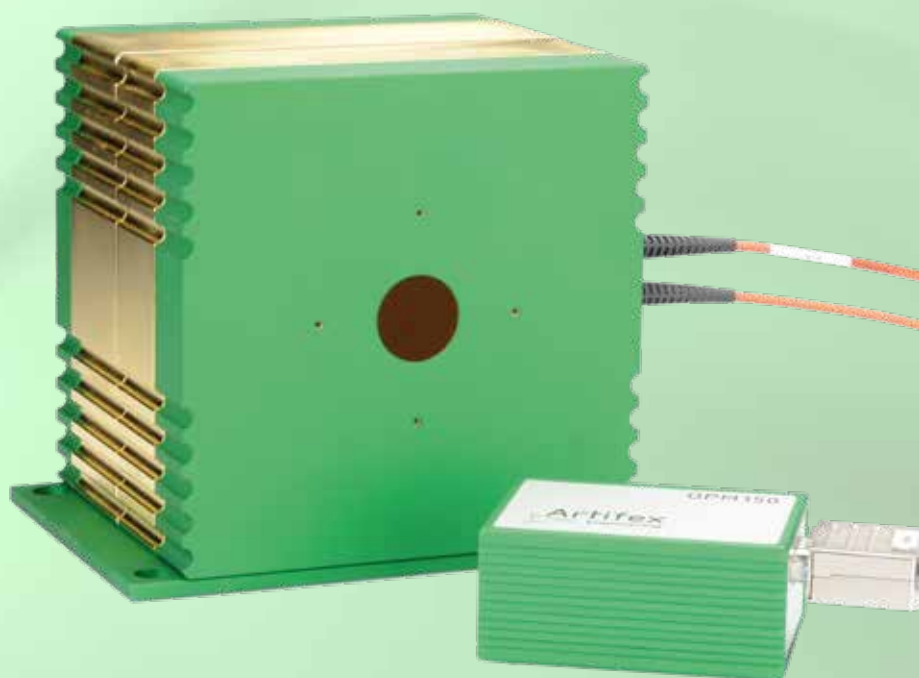
Maximum measurable powers¹



Minimum measurable powers¹

Application idea:

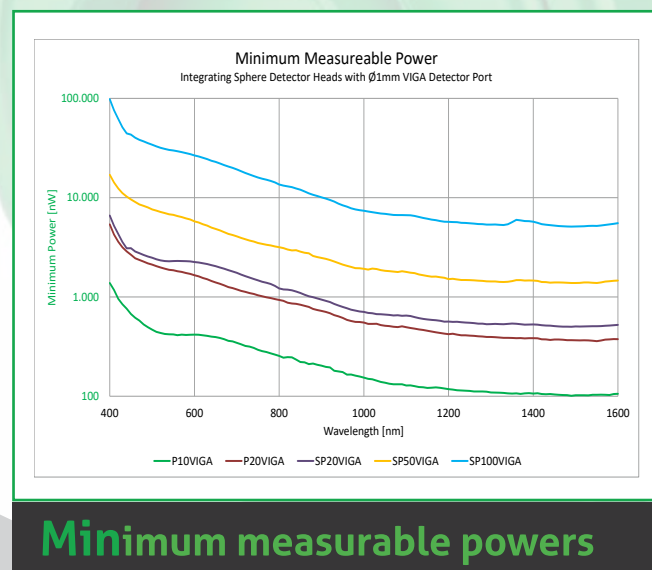
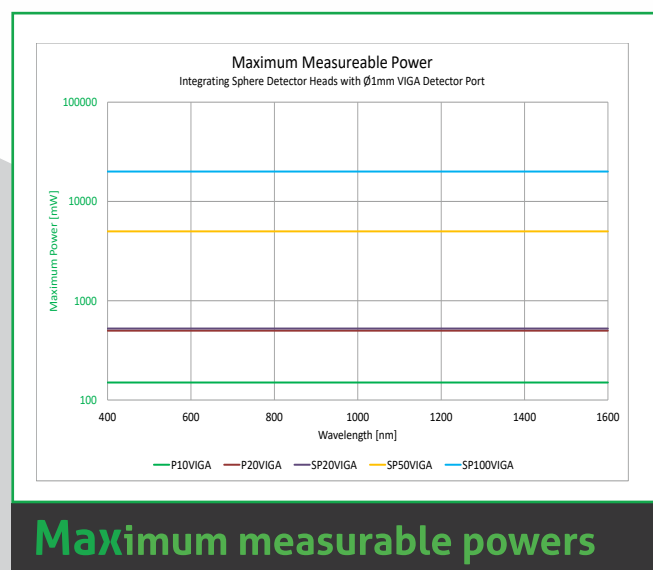
Water cooled integrating sphere, fibre coupled to OPM150:
High power (kW) CW measurement
1000x faster than thermopiles!



Integrating Spheres - Specs & Tecs!

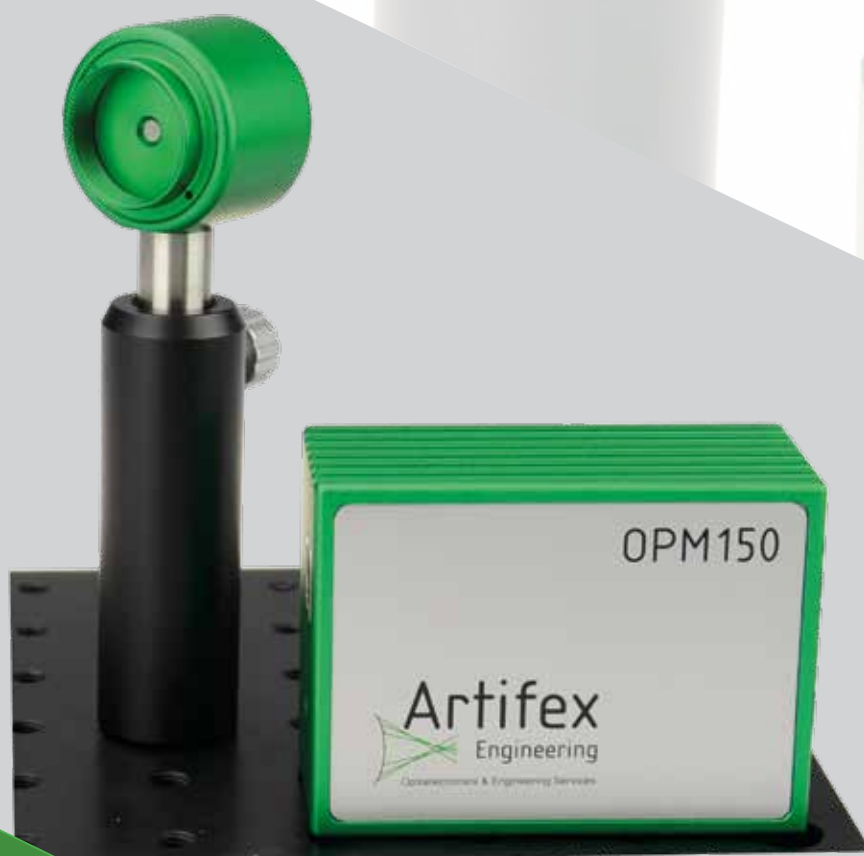
All of our standard polymer integrating spheres are offered with connectors implementing a memory chip. When connected to the base unit, each head is automatically recognized and its individual calibration data are uploaded to the system. For higher power handling, the 50mm and 100mm polymer as well 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 power density at the point of first impact (back wall):

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



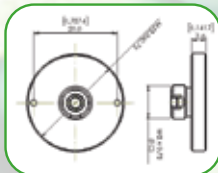
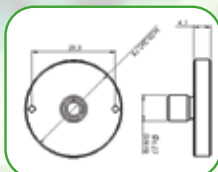
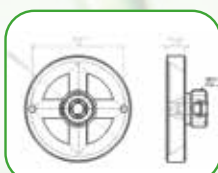
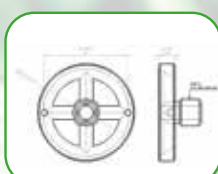
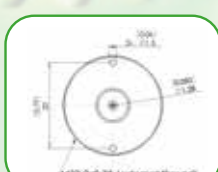
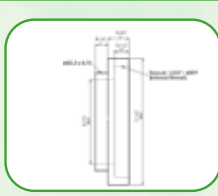
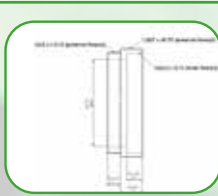
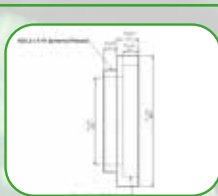


Integrating Spheres - Specs & Tecs!

Item	Order code	Photo	φ Input	Wavelength range	Power Range
P10UVS	20.220.00018		3.5	250 - 1000nm	400nW - 150mW at 950nm
P10G	20.220.00019			800 - 1550nm	2μW - 150mW at 1550nm
P10VIGA	20.220.00020			400 - 1600nm	100nW - 150mW at 1550nm
P10x2.0IGA	20.220.00049			800 - 2000nm	150nW - 150mW at 1550nm
P10x2.2IGA	20.220.00050			1000 - 2200nm	3μW - 100mW at 1550nm
P10x2.5IGA	20.220.00081			1300 - 2490nm	3μW - 100mW at 1550nm
P20UVS	20.220.00021		7.0	250 - 1000nm	1μW - 500mW at 950nm
P20G	20.220.00022			800 - 1550nm	5μW - 500mW at 1550nm
P20VIGA	20.220.00023			400 - 1600nm	500nW - 500mW at 600nm
P20x2.0IGA	20.220.00051			800 - 2000nm	500nW - 500mW at 1550nm
P20x2.2IGA	20.220.00052			1000 - 2200nm	1μW - 400mW at 1550nm
P20x2.5IGA	20.220.00073			1300 - 2490nm	1μW - 400mW at 1550nm
M8UVS	Port: 20.220.00056 Sphere: 20.220.00055		7.0	250 - 1000nm	1μW-500mW at 950nm
M8G	Port: 20.220.00057 Sphere: 20.220.00055			800 - 1550nm	10μW-500mW at 1550nm
M8VIGA	Port: 20.220.00061 Sphere: 20.220.00055			400 - 1600nm	500nW-500mW at 1550nm
M8x2.0IGA	Port: 20.220.00062 Sphere: 20.220.00055			800 - 2000nm	1μW-500mW at 1550nm
M8x2.2IGA	Port: 20.220.00063 Sphere: 20.220.00055			1000 - 2200nm	10μW-500mW at 1550nm
M8x2.5IGA	Port: 20.220.00095 Sphere: 20.220.00055			1300 - 2490nm	10μW-500mW at 1550nm
M8UVS	Port: 20.220.00056 Sphere: 20.220.00005		12.5	250 - 1000nm	4μW - 2W at 950nm
M8G	Port: 20.220.00057 Sphere: 20.220.00005			800 - 1550nm	20μW - 5W at 1550nm
M8VIGA	Port: 20.220.00061 Sphere: 20.220.00005			400 - 1600nm	2μW - 5W at 1550nm
M8x2.0IGA	Port: 20.220.00062 Sphere: 20.220.00005			800 - 2000nm	2μW - 3W at 1550nm
M8x2.2IGA	Port: 20.220.00063 Sphere: 20.220.00005			1000 - 2200nm	30μW - 1.5W at 1550nm
M8x2.5IGA	Port: 20.220.00095 Sphere: 20.220.00005			1300 - 2490nm	30μW - 1.5W at 1550nm
M12UVS	Port: 20.220.00064 Sphere: 20.220.00017		25.0	250 - 1000nm	15μW - 8W at 950nm
M12G	Port: 20.220.00065 Sphere: 20.220.00017			800 - 1550nm	100μW-20W at 1550nm
M12VIGA	Port: 20.220.00058 Sphere: 20.220.00017			400 - 1600nm	5μW - 20W at 1550nm
M12x2.0IGA	Port: 20.220.00059 Sphere: 20.220.00017			800 - 2000nm	10μW - 10W at 1550nm
M12x2.2IGA	Port: 20.220.00060 Sphere: 20.220.00017			1000 - 2200nm	100μW - 5W at 1550nm
M12x2.5IGA	Port: 20.220.00096 Sphere: 20.220.00017			1300 - 2490nm	100μW - 5W at 1550nm

Let's Connect - Adapters & 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 - Adapters & Accessories

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.: 30.070.00007			Extend power range approximately 10x.
Filter OD2 Art.: 30.070.00008			Extend power range approximately 100x.
Mounting Plate Art.: 20.430.00059			For top-mounting of OPM150 onto 25mm grid breadboards.
Carrying Case Art.: 30.070.00069			For compact and organized storage of the OPM150.

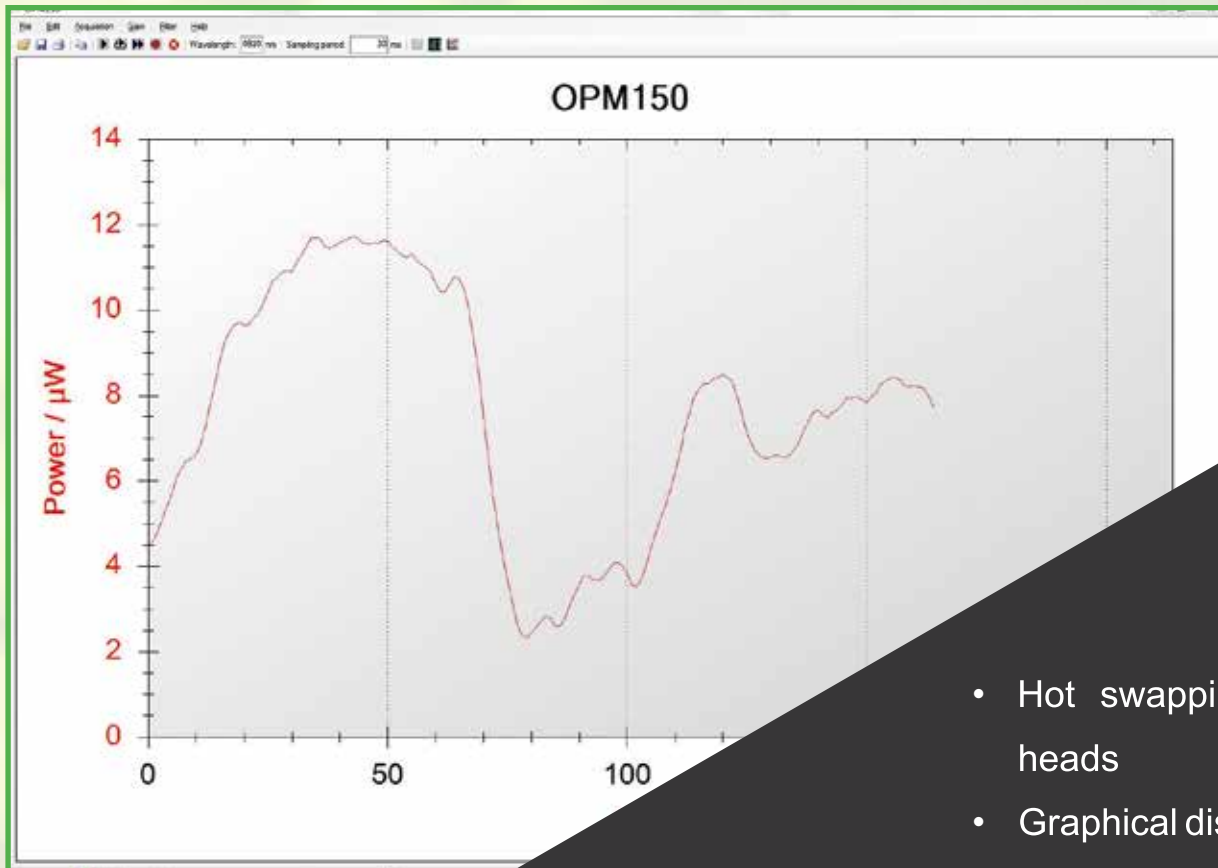
¹ Laser safety determination. Suitable only for heads and integrating spheres with $\phi > 7\text{mm}$ detector area or input aperture respectively.

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.



The Software - Integration made Easy

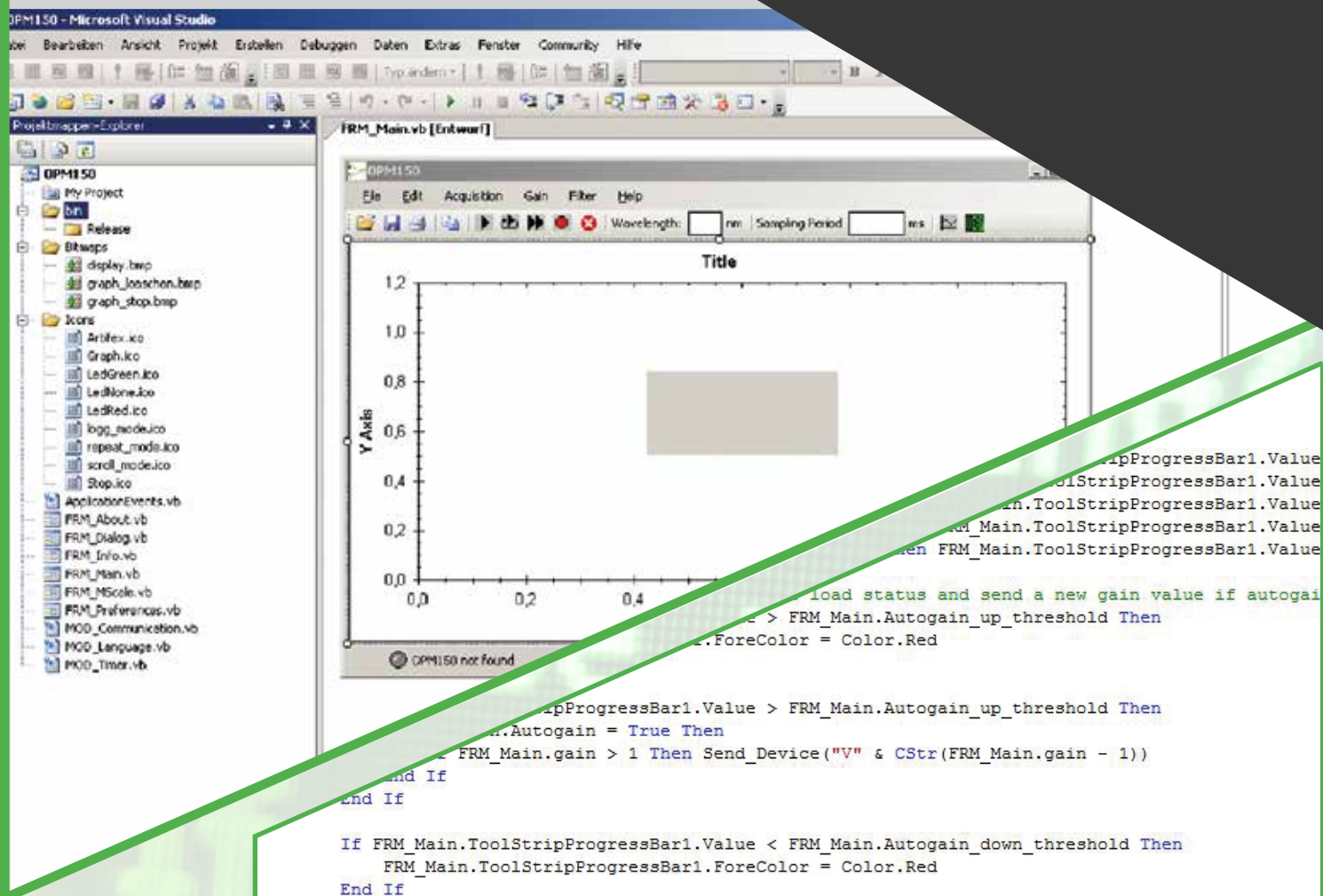
The GUI is well structured and simple to use.



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



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!



海纳光学

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



USB powered and
controlled

Various heads covering
250 - 2490nm & 1 nW - 300 mW

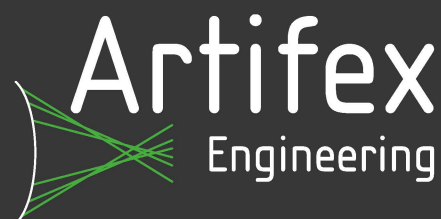
Up to 12kW power measurement
with integrating spheres

30Hz update rate with GUI,
600Hz as data logger

Plenty of accessories
to enhance
ease of application

Thank You

www.art-eng.de



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