Artifex
Engineering

OPM150
Power Meter

THE Complete
Solution!

The OPM150 - a versatile power monitor small enough to fit into your pocket!
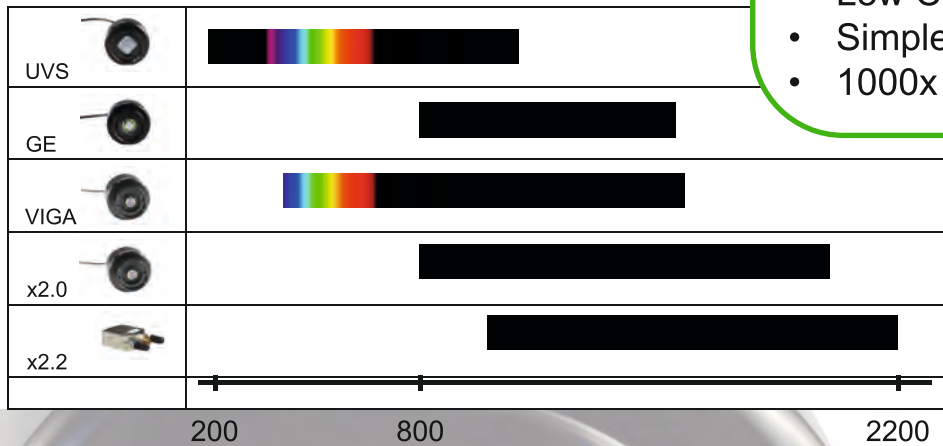
USB powered and controlled!

Ideal for use in:

• the lab
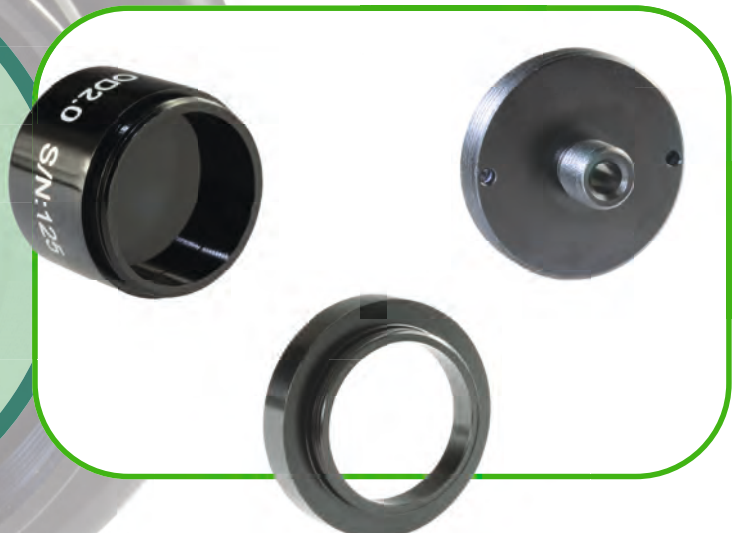• the field
• OEM applications

Highlights:

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

Wavelength Ranges:

UVS		
GE		
VIGA		
x2.0		
x2.2		
	200	800	2200

W i d e r a n g e o f a d a p t e r s and a c c e s s o r i e s !

(pp 12 - 13).

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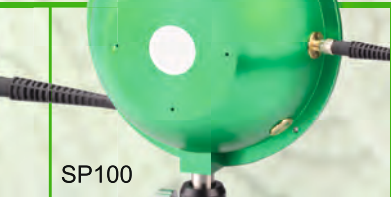
UV-Si	Ge	VIS-InGaAs	x2.0-InGaAs	x2.2-InGaAs	x2.5-InGaAs
250-1100nm	800-1550nm	400-1600nm	800-2000nm	1000-2200nm	1300-2500nm

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 *:

	OD1	OD2
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!

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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.
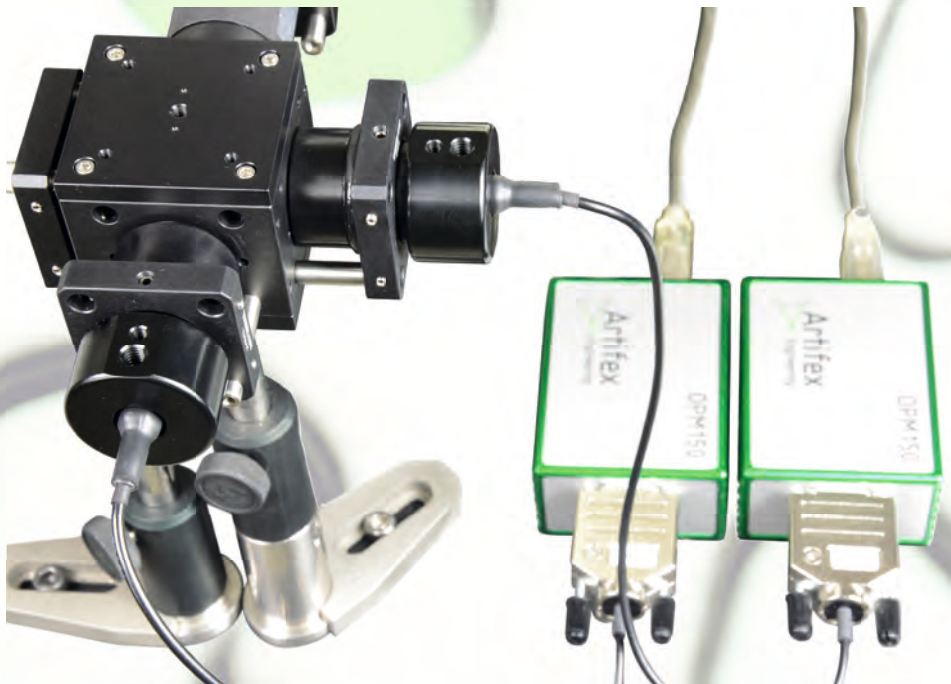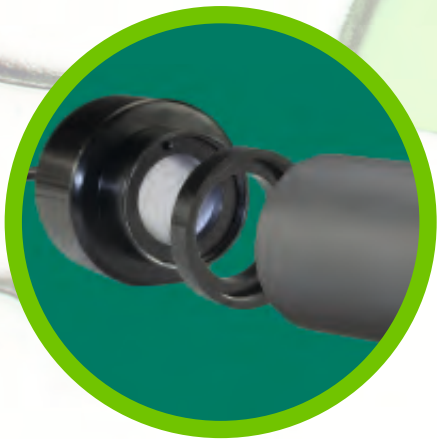
Very
Compact
for
simple integration
in
OEM systems!

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 soft-
ware,
source code, LabVIEW*-vi
and command list for virtual
COM-port (pp.14 - 15).
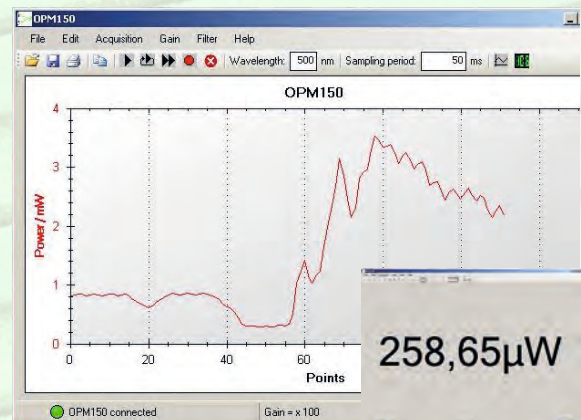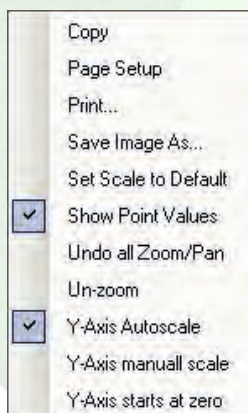
* LabVIEW is a registered trade mark of National Instruments Corp.

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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.
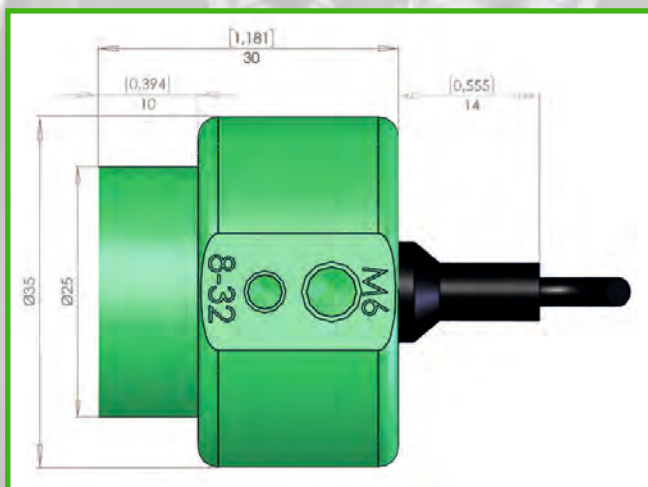
Highlights:

- 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 InGaAs (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 measureable powers [1]:
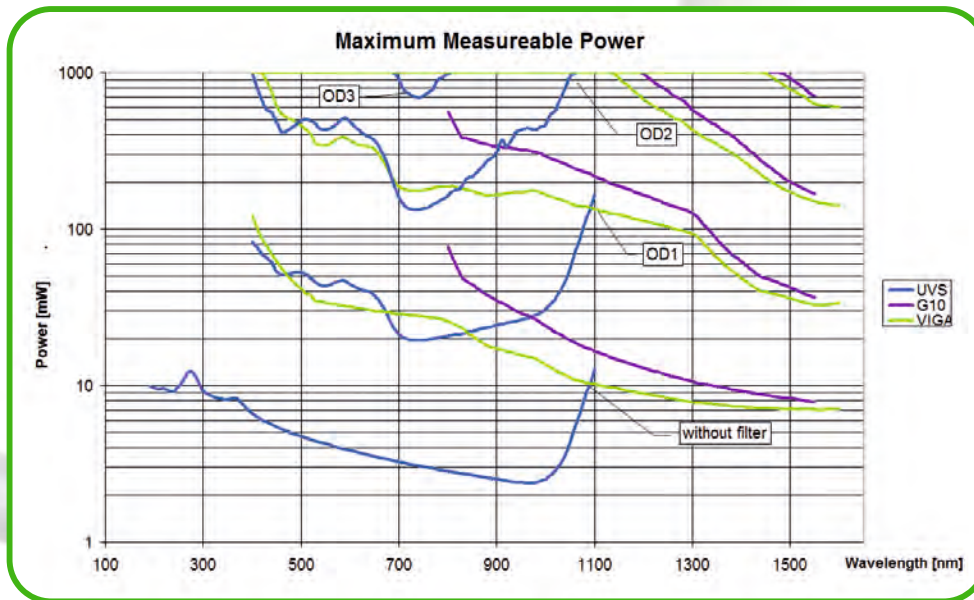
Minimum measureable powers:
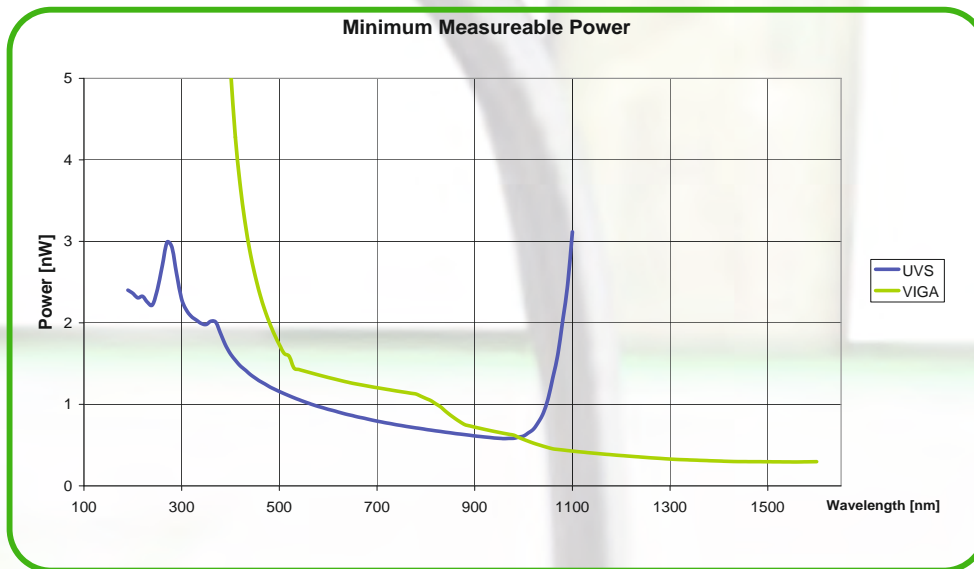
Complete sets comprising of:

- 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.

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.
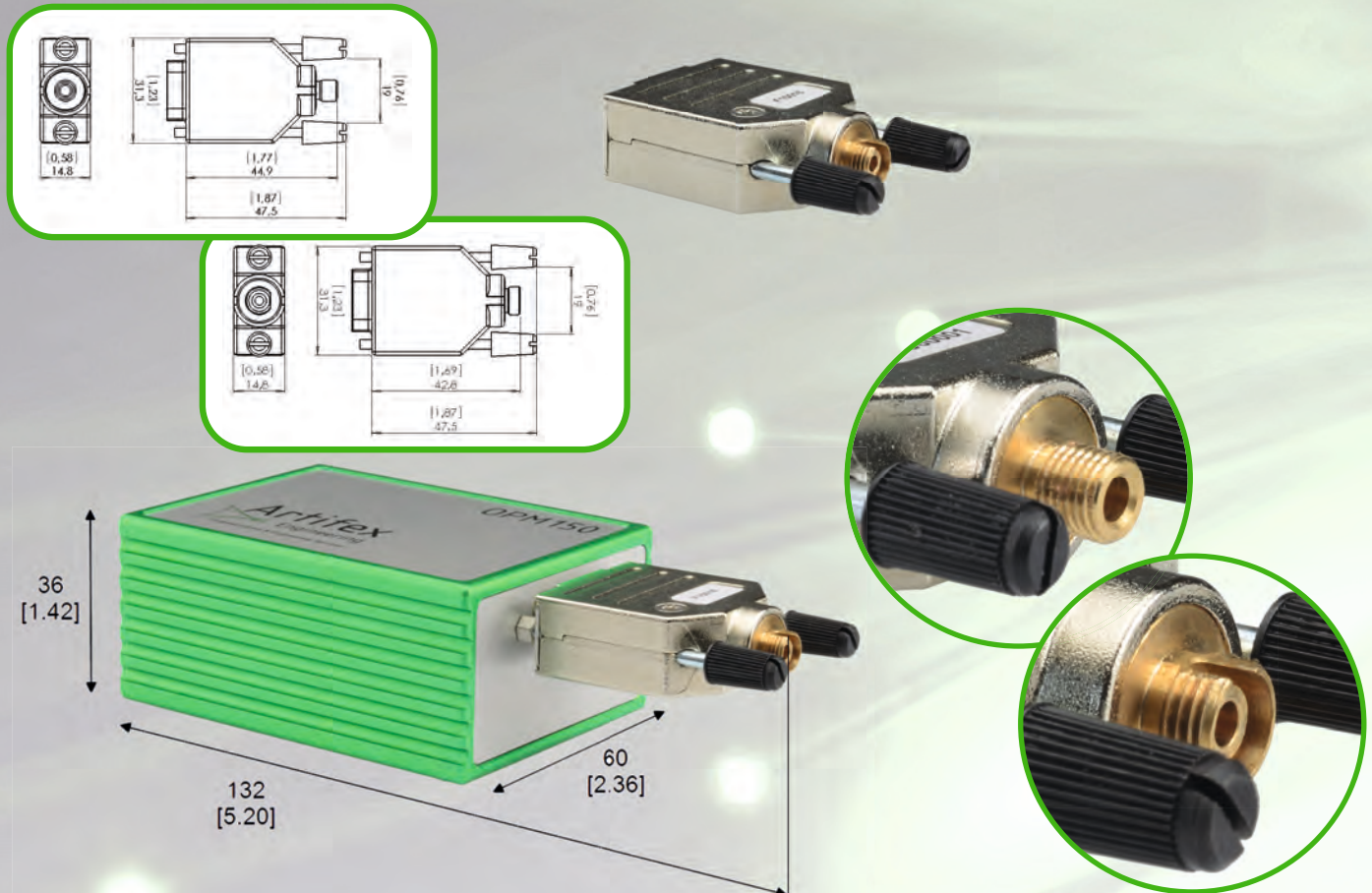
Item and order code	Wavelength range	Max. fibre core @ NA	Power MIN.	Power MAX.
UVSFC 30.070.00053 UVSSMA 30.070.00051	250-1100nm	φ1500µm at NA 0.39 φ2000µm at NA 0.22	4nW (at 600nm)	4mW (at 600nm)
G3FC 30.070.00026 G3SMA 30.070.00041	800-1550nm	φ1000µm at NA 0.39 φ1500µm at NA 0.22	1µW (at 1550nm)	8 [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 [2] 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 [2] mW (at 1550nm)

[1] With base module 30.070.00002.
[2] With base module 30.070.00058.

Maximum measureable powers:

Minimum measureable powers:
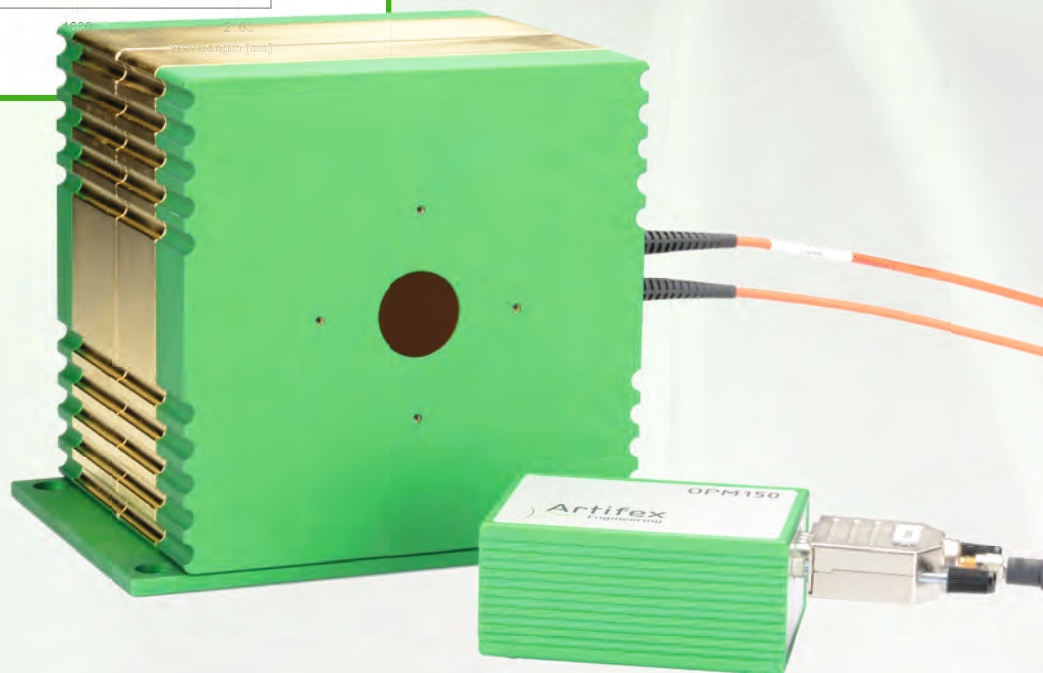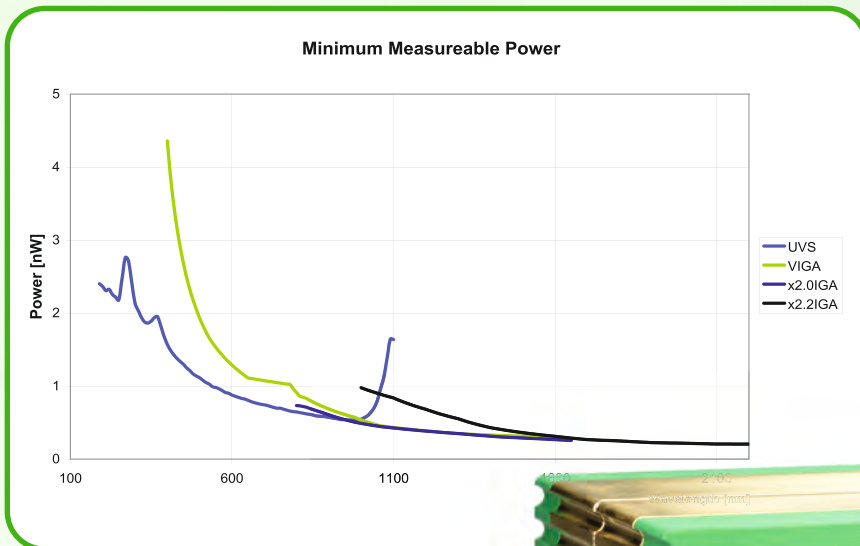
Application idea:

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

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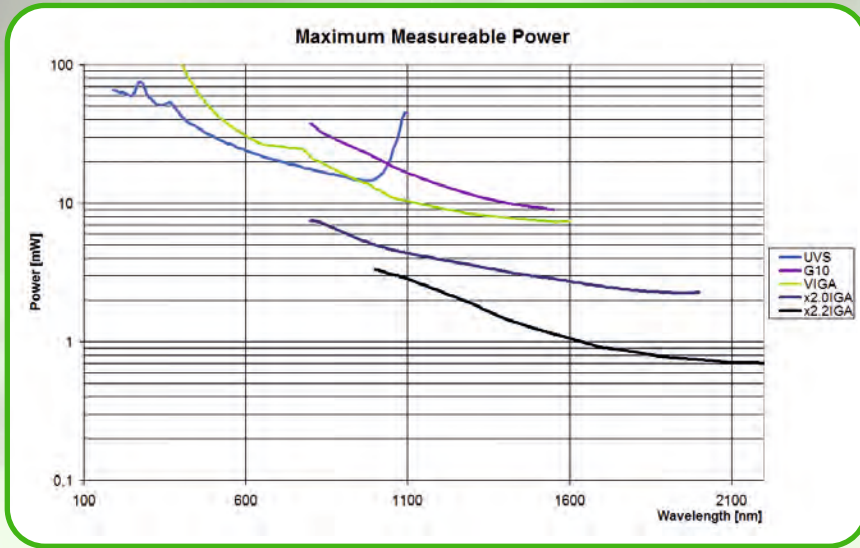 its individual calibration data are uploaded to the system. For higher power handling, the 50mm and 100mm polymer as well as the gold integrating spheres may be used in conjunction with an optical fibre and fibre head (pp. 8 - 9).
Integrating spheres are also available separately.

Maximum measureable powers:
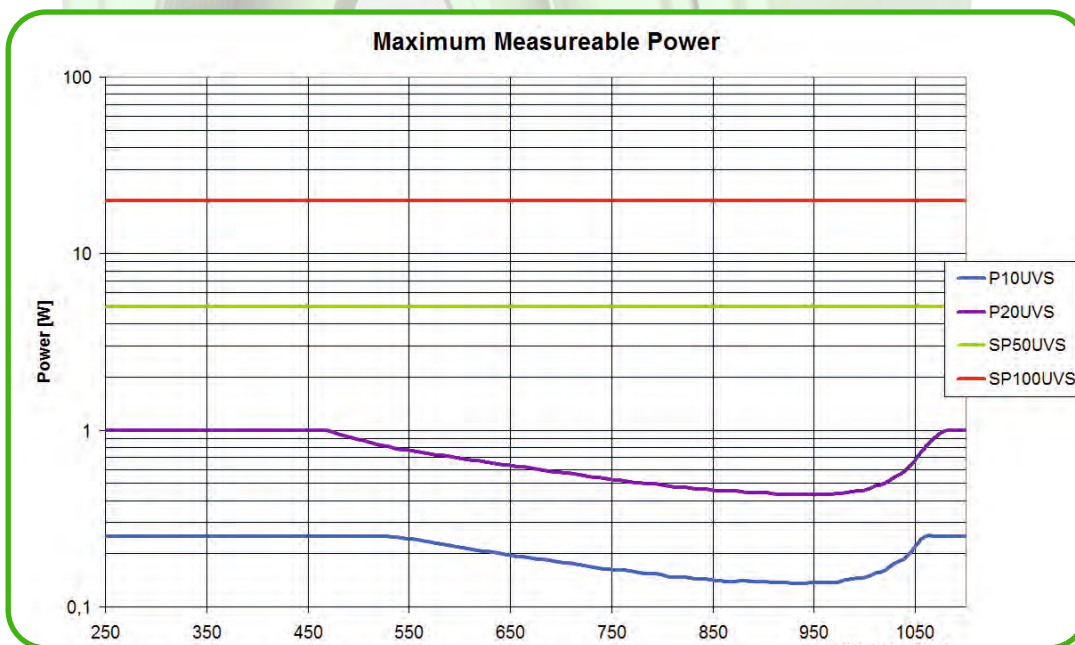
Maximum power density at the point of first impact (back wall):
*   Polymer spheres: $2000 W/cm^2$
*   Gold: $5000\ W/cm^2$
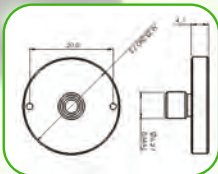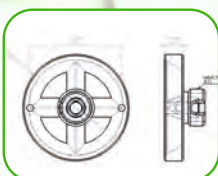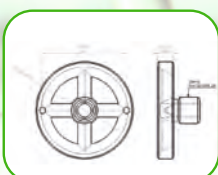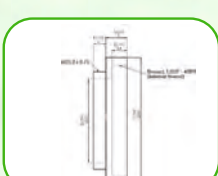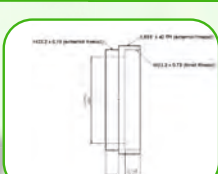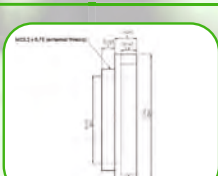
Minimum measureable powers:

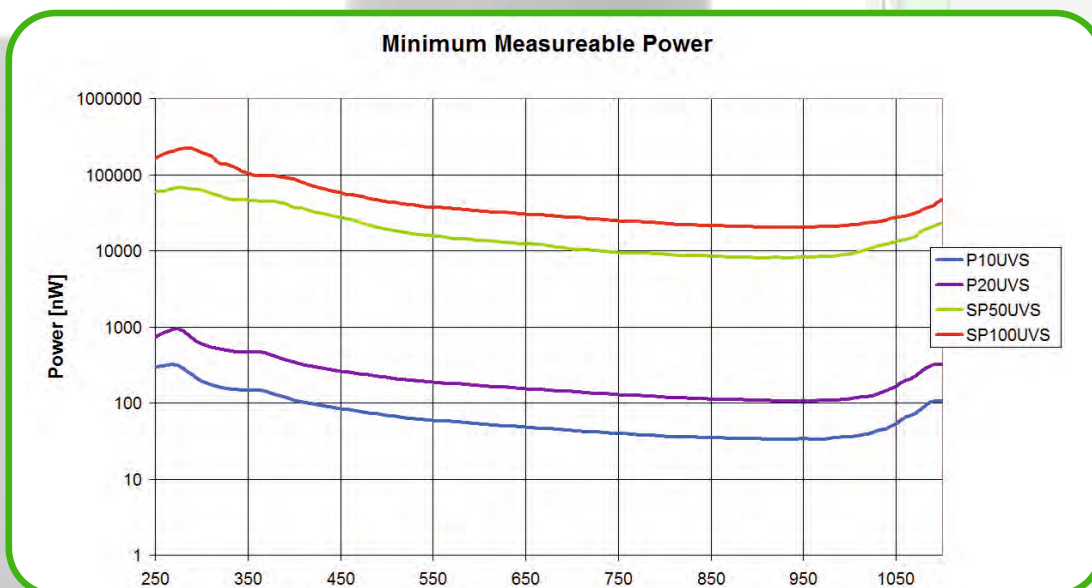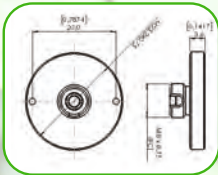| Item and order code	Photo	φ Input	Wavelength range	Power Range
P10UVS Art.: 20.220.00018			250 - 1100nm	2µW - 200mW at 600nm
P10G Art.: 20.220.00019			800 - 1550nm	125µW - 250mW at 1550nm
P10VIGA Art.: 20.220.00020		3.5	400 - 1600nm	1µW - 250mW at 1550nm
P10x2.0IGA Art.: 20.220.00049			800 - 2000nm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

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

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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 φ7mm 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 φ > 7mm 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 GUI is well structured and simple to use.
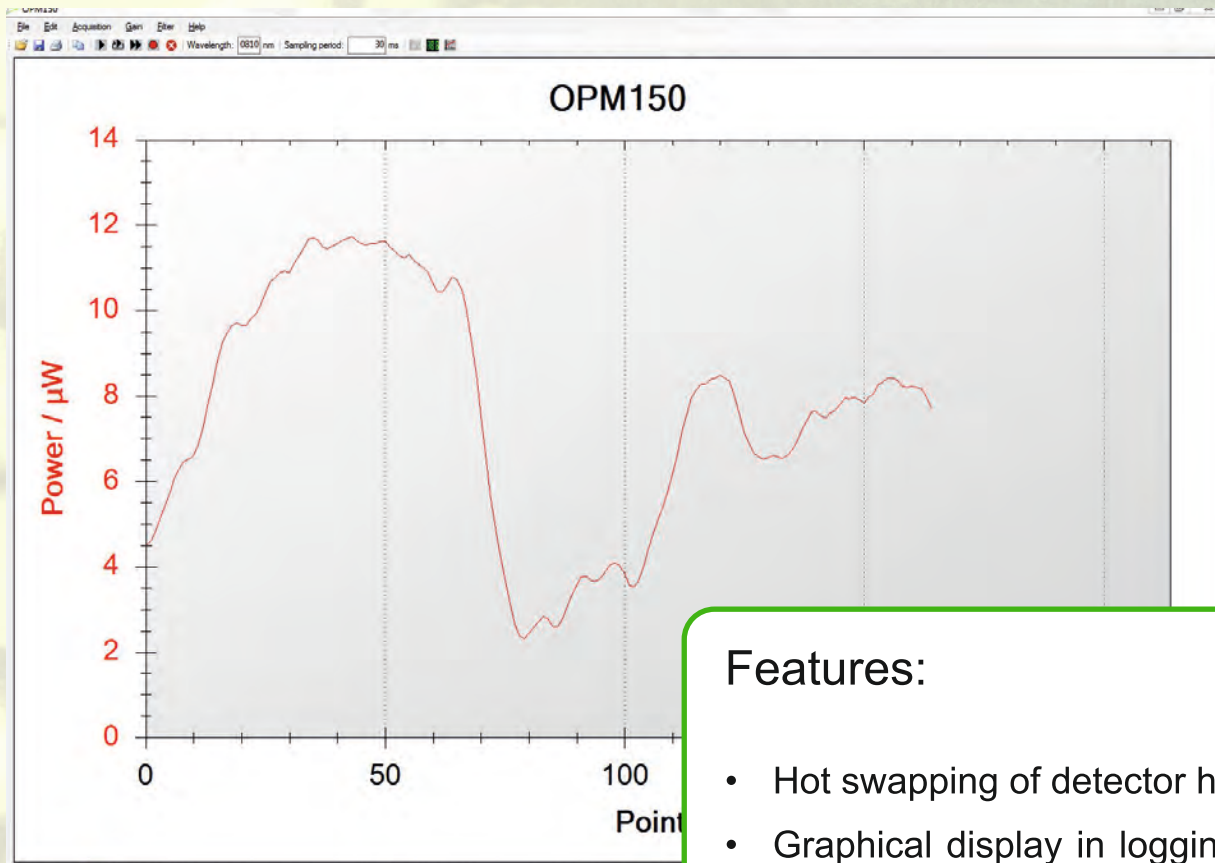
Features:

- 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

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


```
'Read the magnification of the graph and tranform it into the unity
Multiplication = Mid$(Amplitude, Len(Amplitude) - 3, 2)
Amplitude_DBL = FRM_Main.double_parser(Mid$(Amplitude, 2, Len(Amplitude) - 5))

'fill the progressbar with the load
If FRM_Main.Stufe1ToolStripMenuItem.Checked = True Then FRM_Main.ToolStripProgressBar1.Value = (
If FRM_Main.Stufe2ToolStripMenuItem.Checked = True Then FRM_Main.ToolStripProgressBar1.Value = (
If FRM_Main.Stufe3ToolStripMenuItem.Checked = True Then FRM_Main.ToolStripProgressBar1.Value = (
If FRM_Main.Stufe4ToolStripMenuItem.Checked = True Then FRM_Main.ToolStripProgressBar1.Value = (
If FRM_Main.Stufe5ToolStripMenuItem.Checked = True Then FRM_Main.ToolStripProgressBar1.Value = (

'calculate the Bargraph display to show the load status and send a new gain value if autogain is
If FRM_Main.ToolStripProgressBar1.Value > FRM_Main.Autogain_up_threshold Then
    FRM_Main.ToolStripProgressBar1.ForeColor = Color.Red
End If

If FRM_Main.ToolStripProgressBar1.Value > FRM_Main.Autogain_up_threshold Then
    If FRM_Main.Autogain = True Then
        If FRM_Main.gain > 1 Then Send_Device("V" & CStr(FRM_Main.gain - 1))
    End If
End If

If FRM_Main.ToolStripProgressBar1.Value < FRM_Main.Autogain_down_threshold Then
    FRM_Main.ToolStripProgressBar1.ForeColor = Color.Red
End If

If FRM_Main.ToolStripProgressBar1.Value < FRM_Main.Autogain_down_threshold Then
    If FRM_Main.Autogain = True Then
        If FRM_Main.gain < 5 Then Send_Device("V" & CStr(FRM_Main.gain + 1))
```
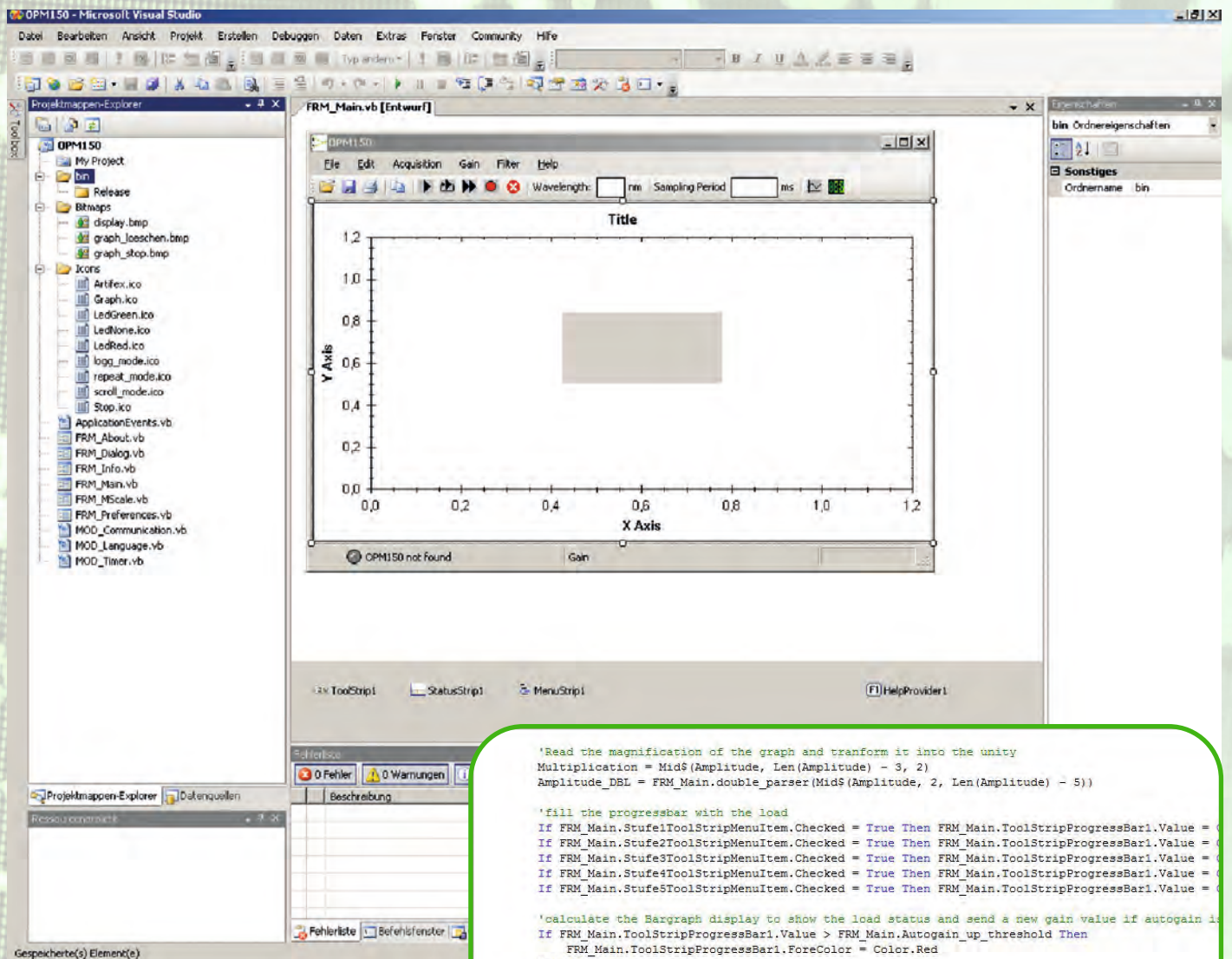
Our philosophy: Make it as simple as possible to use this instrument!

® LabVIEW is a registered trade mark of the National Instruments Corporation.

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!

Distributor: