Artifex Engineering

INTEGRATING SPHERES

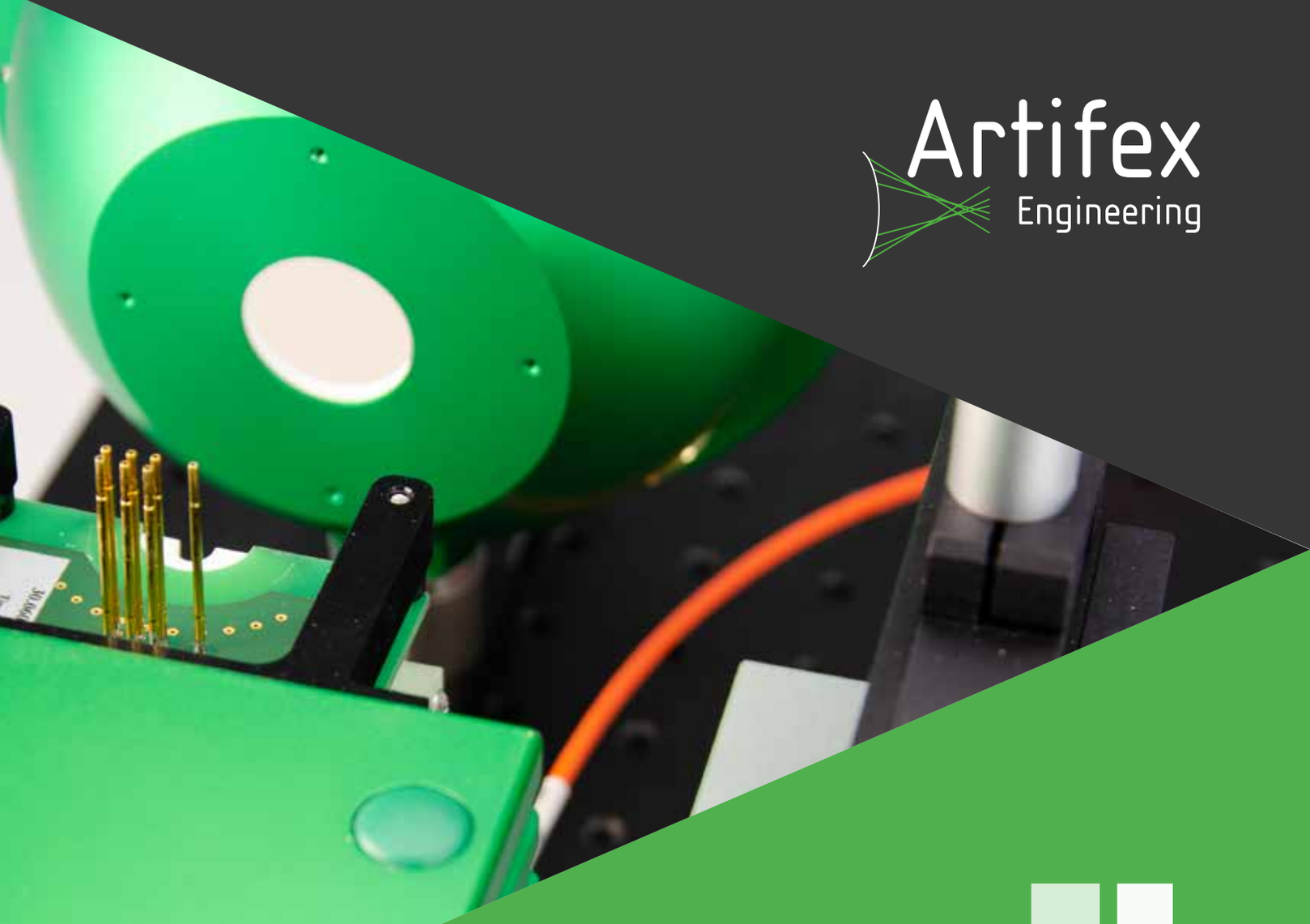
POLYMER INTEGRATING SPHERES

GOLD INTEGRATING SPHERES

Your Supplier
for Instruments & Optics

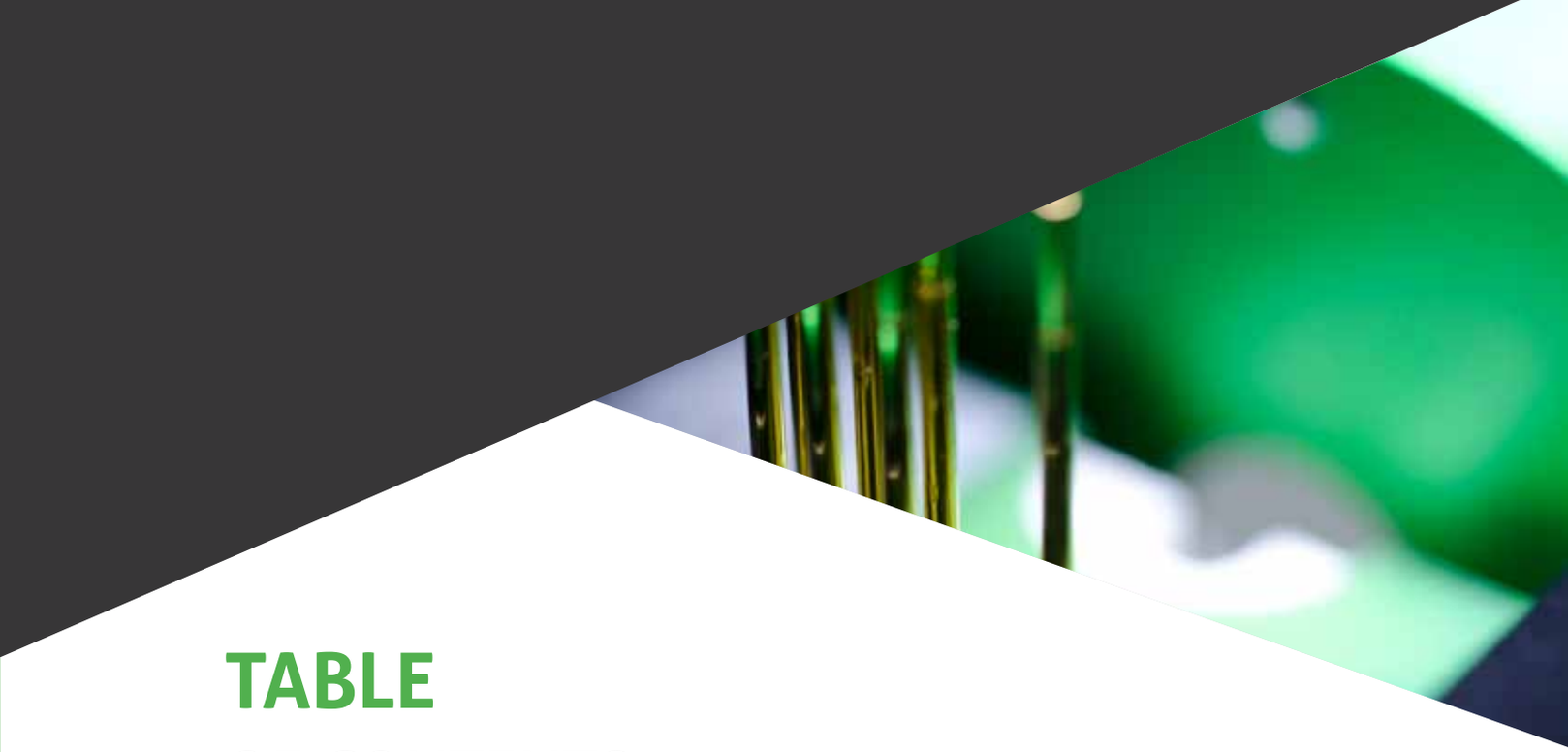
ISO 9001 CERTIFIED
www.artifex-engineering.com

Artifex Engineering



We are dedicated to attaining high quality, innovation and service for our customers.

Artifex Engineering designs and manufactures systems and subsystems for industrial and R&D metrological applications. Let your product engineers concentrate on measuring your devices - not wasting your resources designing test equipment.



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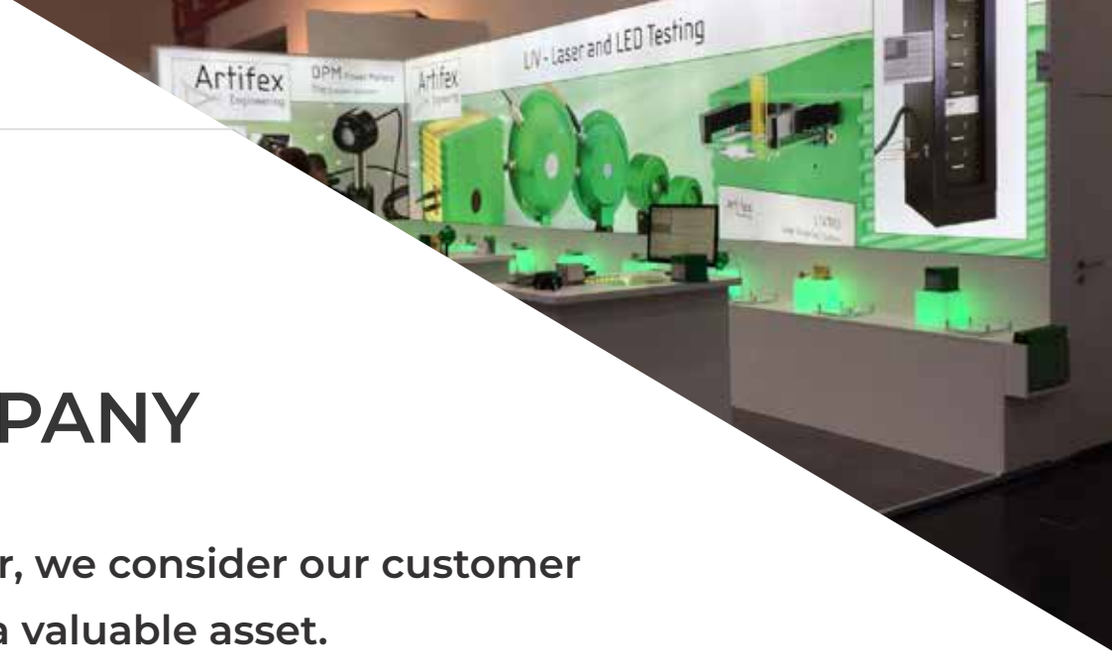
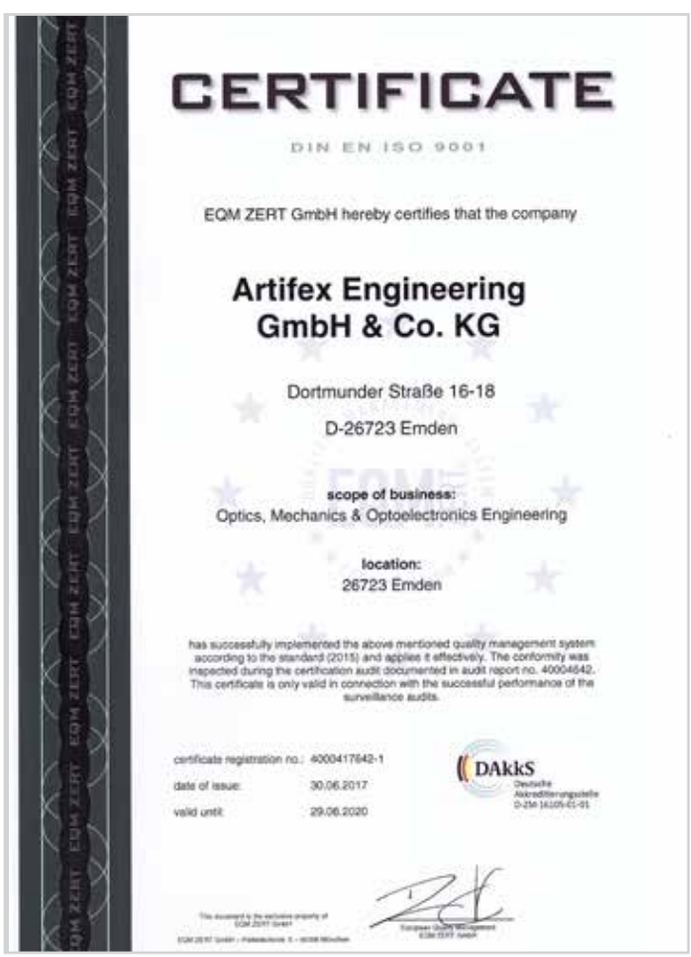


OUR COMPANY

As an OEM supplier, we consider our customer relationship to be a valuable asset.

We see a major component of our products in the comprehensive pre and post sales support we provide. With more than 20 years experience in the field, we are well positioned to offer our customers advice and design consultation.



CERTIFICATE

DIN EN ISO 9001

EQM ZERT GmbH hereby certifies that the company

Artifex Engineering GmbH & Co. KG

Dortmunder Straße 16-18

D-26723 Emden

scope of business:
Optics, Mechanics & Optoelectronics Engineering

location:
26723 Emden

has successfully implemented the above mentioned quality management system according to the standard (2015) and applies it effectively. The conformity was inspected during the certification audit documented in audit report no. 40004642. This certificate is only valid in connection with the successful performance of the surveillance audits.

certificate registration no.: 4000417642-1
date of issue: 30.06.2017
valid until: 29.06.2020

DAkkS

Our products form the basis of a wide range of industrial R&D metrological applications. At Artifex Engineering we strive to maintain a close relationship with our customers to ensure that the products we deliver meet your needs cost effectively. We understand that your application is not standard and so we offer customization of all of our products, even for single units. Our manufacturing infrastructure includes rapid prototyping machinery and a flexible manufacturing environment allowing us to customize quickly and efficiently – a definite pricing advantage.

Artifex Engineering is ISO 9001 certified. We are dedicated to attaining high quality, innovation and service for our customers.

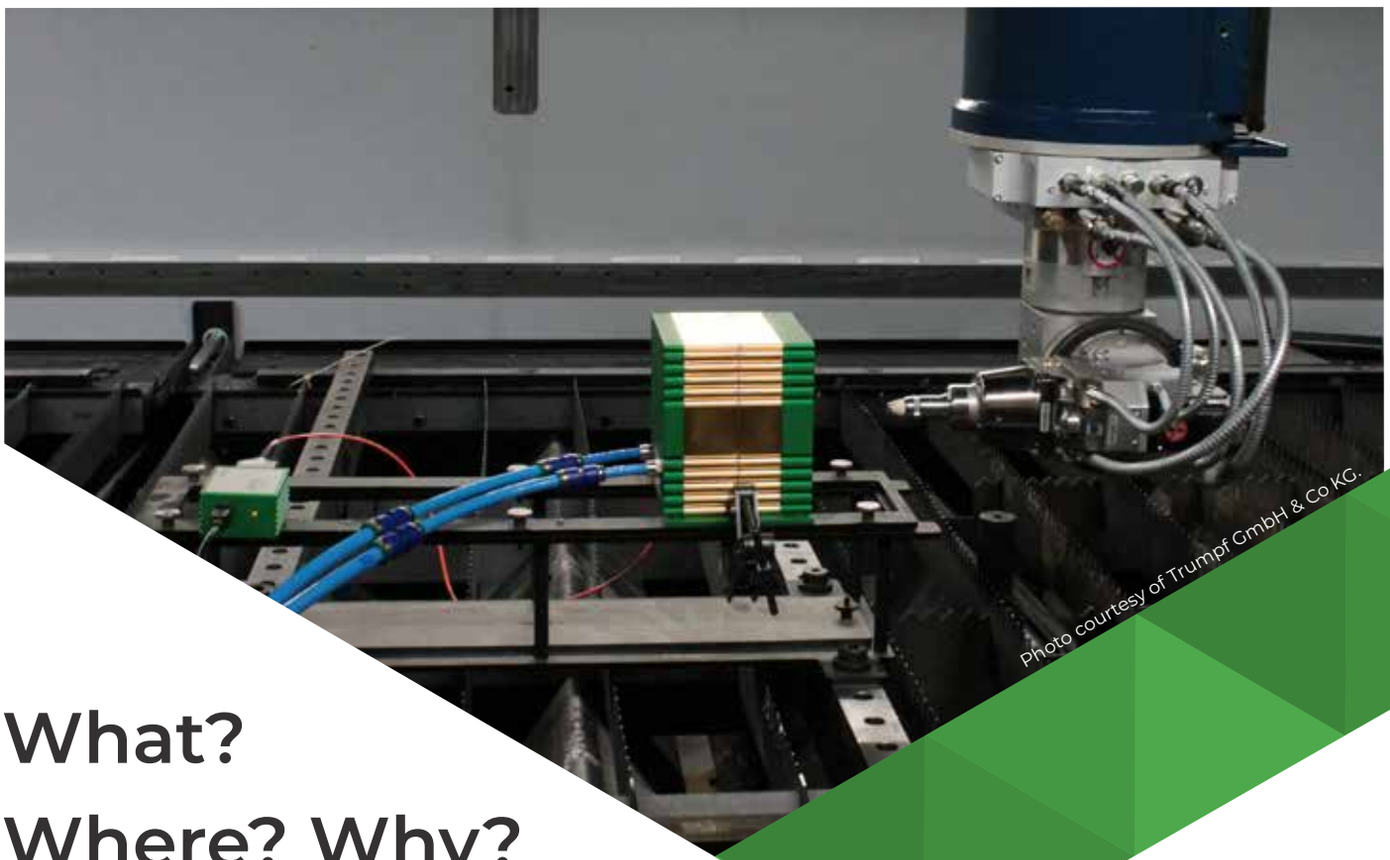


Photo courtesy of Trumpf GmbH & Co KG.

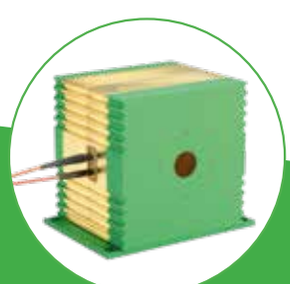
What?
Where? Why?

High quality solid polymer
and gold integrating spheres!

Applications:

high speed power measurement | light source homogenization

Solid design and robust mounting for lab use and machine integration.

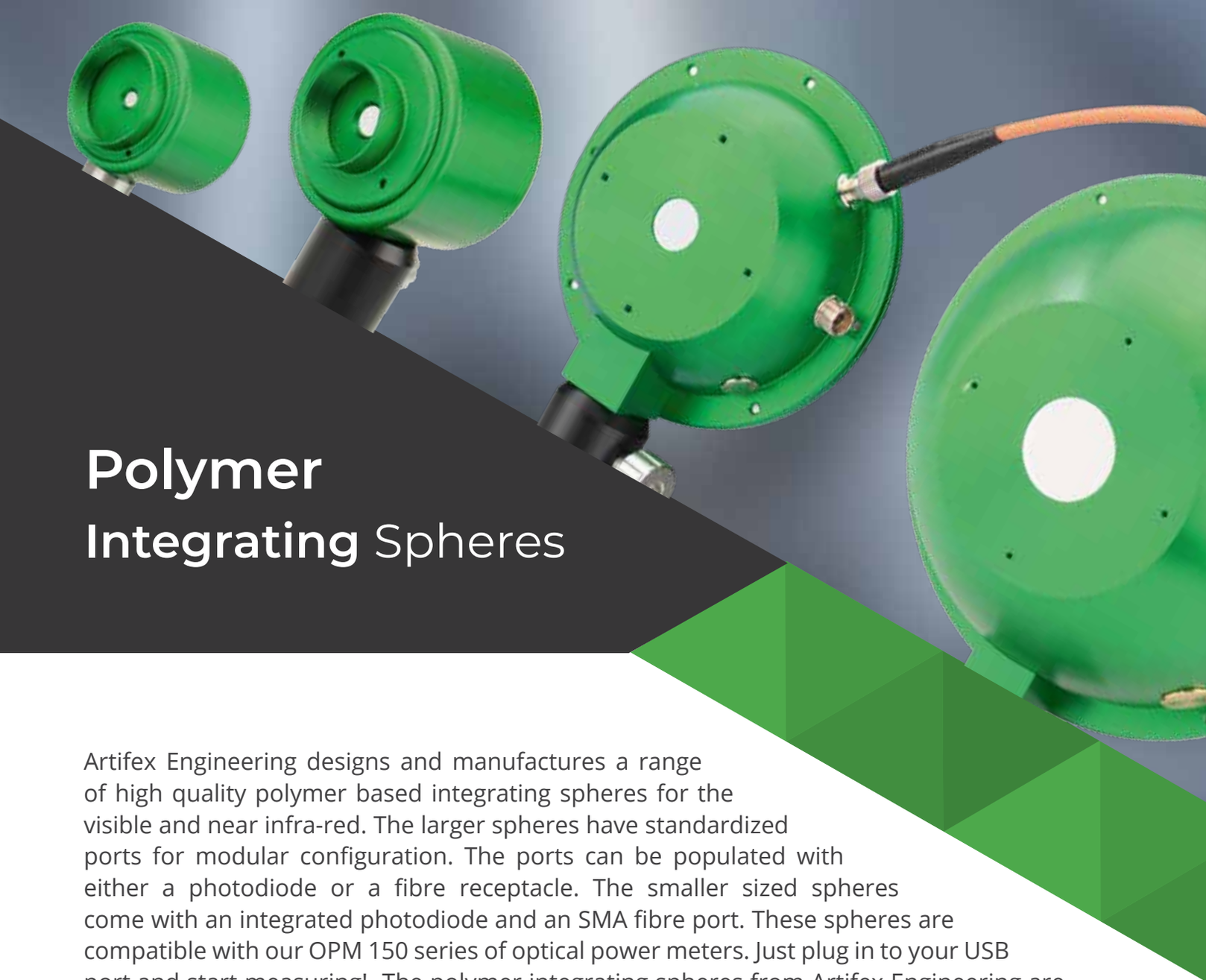


GOLD INTEGRATING SPHERES

- High power handling
- Multiple ports
- Economical

POLYMER INTEGRATING SPHERES

- High efficiency
- Extreme positional independence
- Compatible with OPM150 system



Polymer
Integrating Spheres

Artifex Engineering designs and manufactures a range of high quality polymer based integrating spheres for the visible and near infra-red. The larger spheres have standardized ports for modular configuration. The ports can be populated with either a photodiode or a fibre receptacle. The smaller sized spheres come with an integrated photodiode and an SMA fibre port. These spheres are compatible with our OPM 150 series of optical power meters. Just plug in to your USB port and start measuring! The polymer integrating spheres from Artifex Engineering are very efficient due to the high reflectivity of the quality material we use. These spheres are CNC machined from solid material - not just coated.

A stable instrument you can trust!

Options	
Fibre ports	SMA and FC
Photodiodes	Si, Ge, VIS-enhanced In-GaAs, IR-extended InGaAs
Sphere inner diameters	10mm, 20mm, 50mm, 100mm

Specifications	
Wavelength range	250-2500nm
Positional dependence	<1% (full aperture)
Angular dependence	<2% (±30°)
Power and energy density	1kW/cm^2, 2J/cm^2

The perfect match

The 10mm and 20mm P-series spheres feature an integrated photodiode (choice of Silicon, InGaAs or Germanium) for optical power measurement, as well as an SMA fibre port for auxiliary functions such as spectral analysis. Both outputs are located on the back side of the device. These spheres are calibrated and are compatible with our OPM150 series of optical power meter. The P-series is compatible with several market standard optomechanical cage systems.

Inner diameter: 10mm
Input port diameter: 3.5mm
Max. power: 150mW

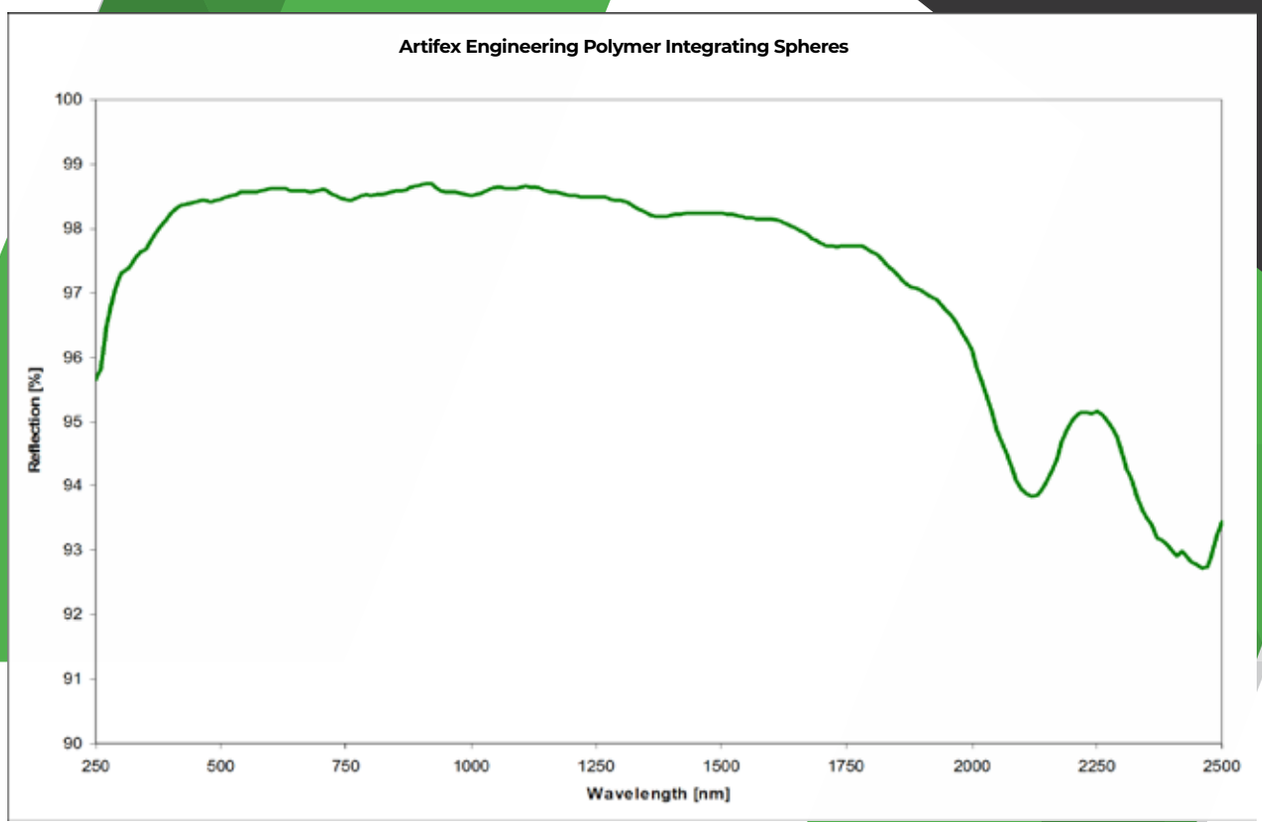
Inner diameter: 20mm
Input port diameter: 7mm
Max. power: 500mW

The 20mm, 50mm and 100mm SP-series spheres have modular ports with a choice of SMA and FC fibre receptacles or photodiodes. These spheres allow measurement of high power, when the sphere is configured with a fibre coupled, external detector. This ensures that the photodiode is not exposed to heat during the measurement which would disturb the calibration. In this manner, up to 100W of CW power can be measured on a µs timescale.

Inner diameter: 20mm
Input port diameter: 7mm
Max. power: 500mW (internal Photodiode)
20 W (external Photodiode)

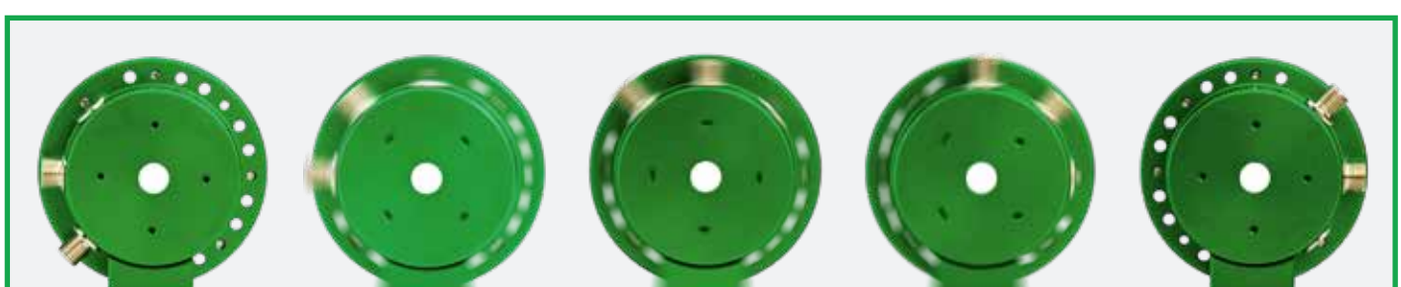
Inner diameter: 50mm
Input port diameter: 12.5mm
Max. power: 5W (internal Photodiode)
40W (external Photodiode)

Inner diameter: 100mm
Input port diameter: 25mm
Max. power: 20W (internal Photodiode)
100W (external Photodiode)



Our polymer integrating spheres can be used for optical power measurement as well as beam homogenization for accurate spectral analysis or detector array calibration. The 100mm sphere exhibits a homogeneity of better than 1% at the 25mm port when illuminated through the side (fibre) ports.

The high reflectivity and lambertian diffusivity of the polymer we use ensures **wide band efficiency** over the **full range** of **250-2500nm**.



SP-SERIES WITH ROTATABLE AZIMUTH

Gold
Integrating Spheres

Our gold coated integrating spheres are designed for high power applications. We use SMA fibre ports to allow accurate measurement with our OPM series of optical power meters.

High power measurements are often performed using thermopile detectors. Thermopiles however, have the disadvantage of reacting very slowly - typical risetimes lead to measurement periods of 1 second at best. The combination of an integrating sphere and a photodiode based power meter allows measuring high power fluctuations on a µs time scale.

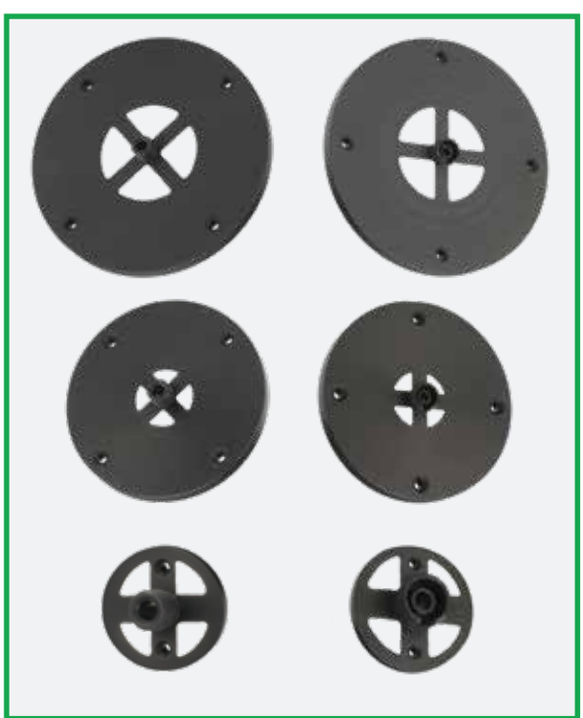
Specifications	
SMA fibre ports	
2 or 4 ports	
Power density	5000W/cm^2
Power handling	20W (25mm uncooled); 5000W (100mm water cooled)
Wavelength range	650nm - 20µm

Accessories

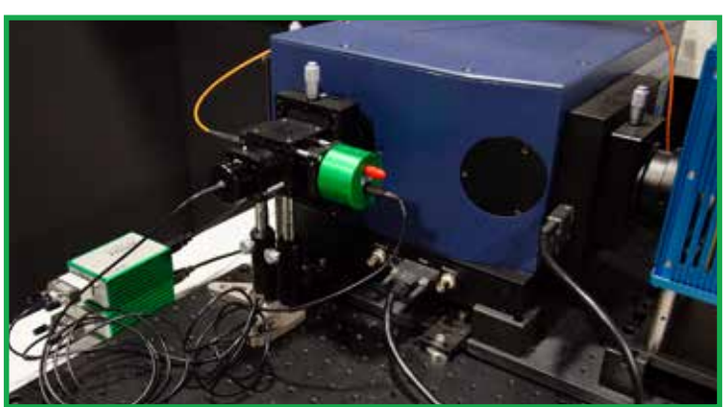
for complete, turnkey solutions.

UNIVERSAL PORT ADAPTER

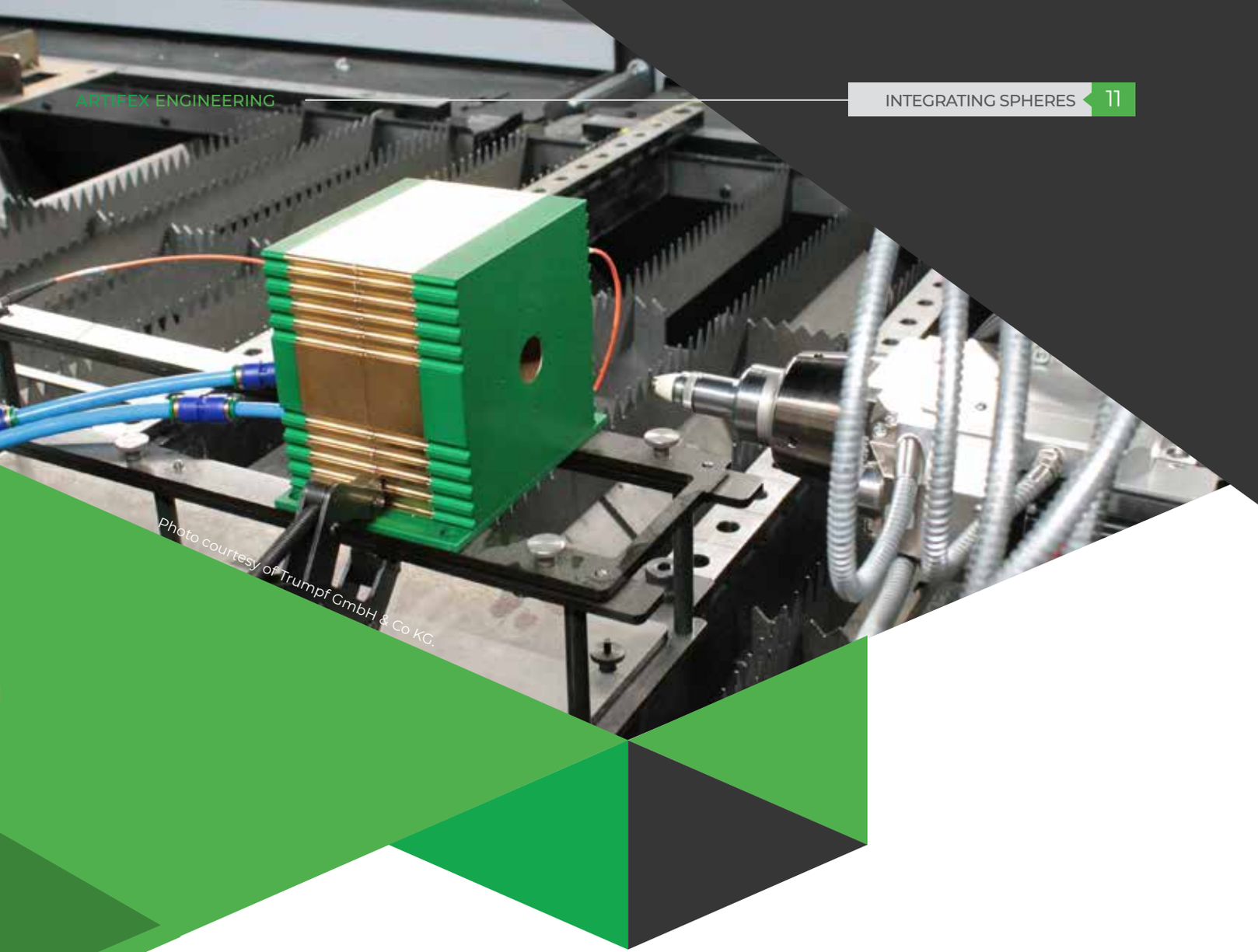
Our proprietary input port fibre adapter design influences calibration by <1%.



FIBRE PORT ADAPTERS



CALIBRATION SERVICE



Summary

We offer high quality solid polymer and gold integrating spheres!

Applications:

- high speed power measurement - even at high power
- light source homogenization

- Polymer: 250 - 2500nm
- Gold: 650nm - 20µm (Power measurement with OPM150: 650 - 2500µm)

- Positional dependance <1% (full aperture)
- Angular dependance <2% (± 30°)

Your problem is our challenge, flexibility is our standard!

We will gladly adapt, for example, the aperture or the sphere diameter to suit your application. Let us know your requirements.

Thank You

www.art-eng.de

Artifex Engineering

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