

UPB-150-ART

<https://www.gigahertz-optik.de/en-us/product/UPB-150-ART>

Product tags: Integrating Sphere Precision



Description

Photometry to determine material properties Material properties is a general term used to refer to the reflection, transmission and absorption properties of a material. Photometry hereby refers to a measurement process through which these properties are determined using a photometer.

Integrating sphere photometer

The integrating sphere is very common in both broadband and narrow-band photometric applications for diffuse sample illumination and determination of the reflected and transmitted light proportions.

UPB-150-ART precision integrating sphere

With the 150mm diameter, the UPB-150-ART provides a good compromise in terms of precision of the sphere function and level of the measurement signal. Its manufacture from an aluminum block ensures a very precise alignment of the measurement ports to each other. Another characteristic property are the thin circumferential knife-edges of the measurement ports that enable a high acceptance angle for diffuse light.

Multifunctional integrating sphere

The UPB-150-ART is ideal for multiple functions through its five knife-edged measurement ports that can be used either while open or closed. Possible measurement setups include:

- 0°/d Reflection
- 8°/d reflection with and without glamour
- 0°/d directed and diffuse transmission
- Measurements with correction of sample absorption effects
- Two ray measurements

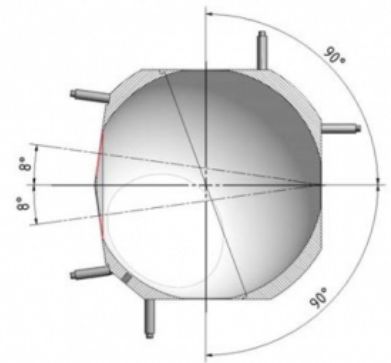
Accessories for individual sphere assemblies

Port plugs and port reducers that can easily be fixed and removed using the Slide & Fix holder are offered for either closure or reduction of ports. An important feature of the UPB-150-ART is that the front side of the plugs and reducers projects into the port and is therefore on the same level as the sphere surface.

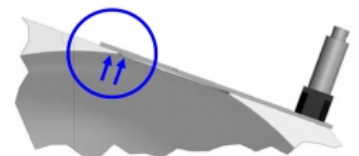
Universal sample holder



Slide & Fix system



Positions of the five measurement ports of the UPB-150-ART enable its universal application.

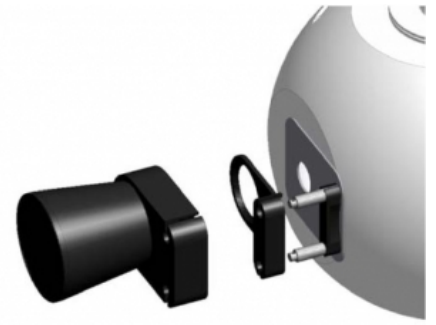


The front side of the port plugs, port reducers and sphere surface are at the same level and thus ensure an almost ideal reflection surface.

The sample holder is fixed onto the posts of the Slide & Fix holder and ensures secure mounting of thin and thick samples. An important feature of the Slide & Fix system is that the sample holder can be combined with port reducers and a light trap.

Light trap with Slide & Fix holder

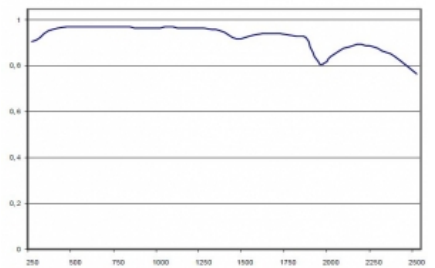
The light trap has a 30mm input port and ensures minimal back reflection over the entire usable spectral range of the integrating sphere through its internal design and black absorbing coating. The Slide & Fix holder can be used to combine the light trap with port reducers and the sample holder.



Light trap for absorption of the transmitted light of transparent samples in 8°/d reflectance measurement setup. Combined with port reducer.

Ex-changeable holders for detectors and light guides

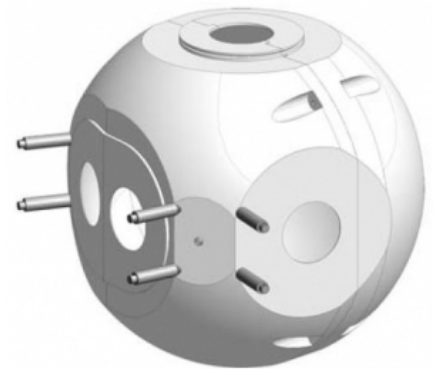
Ex-changeable adapters are offered for mounting of detectors and light guides. Each has a baffle that can be aligned to one of the five measurement ports accordingly depending on the measurement application. The UMPA port adapter of our modular integrating spheres can hereby be used.



Typical spectral reflection of the sphere coating made of barium sulfate (ODP97).

Reflection coating made of barium sulfate

The UPB-150-ART is coated with Gigahertz-Optik's self-manufactured diffusely reflective barium sulfate (ODP97) coating. The multi-layer coating ensures good diffuse reflective properties over the entire usable spectral range.



UPB-150-ART, integrating sphere



UPB-150-ART-Z01, port plug with flat surface



UPB-150-ART-Z02-3, 3mm port reducer



UPB-150-ART-Z02-15, 15mm port reducer



UPB-150-ART-Z02-35, 25mm port reducer



UPB-150-ART-Z03, sample holder



UPB-150-ART-Z04, light trap



UPB-150-ART-Z05, 0.5" detector adapter with baffle



UPB-150-ART-Z06, 1.0" detector adapter with baffle



UPB-150-ART-Z07, 2.0" detector adapter with baffle



UPB-150-ART-Z09, port plug with spherical surface





UPB-150-ART-Z10, port reducer with spherical surface. Free diameter if specified

Specifications

General	
Short description	Five port integrating sphere for universal use in transmission and reflection measurement application in the 300 nm to 2500 nm spectrum.
Main features	Barium sulfate coating. Machined out of solid material. Therefore very precise spherical shape, position of the application ports and finish of the knife edges of the application ports. Accessory for the application ports with Slide&Fix mounting System. Detector port with baffle.
Range of measurement	Diameter: 150 mm (6 inch) Coating: Barium sulfate. Spectral range 300 nm to 2500 nm Application ports: five, 30 mm diameter with knife edge, post for Slide&Fix accessory Detectorport: exchange able Adapters with baffle
Typical applications	Spectrophotometer. Other transmission and reflection measurement set-ups.
Calibration	-
Product	
Sphere diameter	150 mm
Sphere coating	ODP97 (Barium Sulfate)
Diameter of the measurement ports	30 mm, with knife edge design
Knife edge thickness	0.5 mm
Number of measurement ports	Five
Angle tolerance of port setup	± 0.1 °
Accessories and sample holder	Two detachable posts for the Slide & Fix system per port
Detector port	30 mm with circumferential frame (Ø = 58 mm) with lateral V-notch
Sphere mounting	Flat surface with four M5 threaded bores on a 50 mm pitch circle
Miscellaneous	
Weight	approx. 1.6 kg

Configurable with

Produktname	Product Image	Description	Show product
UMPA-0.5/11		Port adapter for use with UMPF-0.5 port frame of the UM series modular construction integrating spheres. Features: To attach TD-11, PD-11 or VL-11 detectors and UFC-11 fiber connectors. Optional diffuser window.	https://www.gigahertz-optik.de/en-us/product/UMPA-0.5-11

Produktname	Product Image	Description	Show product
UMPA-1.0/Fxx port adapter		Port adapter for use with UMPF-1.0 port frame of the UM series modular construction integrating spheres. Features: To attach fiber bundles up to 24.4mm dia. Adaptation by subsequent machining.	https://www.gigahertz-optik.de/en-us/product/UMPA-1.0-Fxx
UFC-11		Fiber adapter for use with UP and UM type integrating spheres. Features: SMA, FC, SC and ST connectors.	https://www.gigahertz-optik.de/en-us/product/UFC-11

Purchasing information

Article-Nr	Modell	Description
Product		
15297566	UPB-150-ART	Integrating sphere
Accessories		
15297567	UPB-150-ART-Z01	Port plug
15297568	UPB-150-ART-Z02	Port reducer. xx aperture diameter set in 0.1mm steps.xx =
15297496	UPB-150-ART-Z02-3	Port reducer 3mm
15297497	UPB-150-ART-Z02-15	Port reducer 15mm
15297498	UPB-150-ART-Z02-25	Port reducer 25mm
15297569	UPB-150-ART-Z03	Sample holder
15297570	UPB-150-ART-Z04	Light trap
15297571	UPB-150-ART-Z05	UMPF-0.5 Detector adapter
15297572	UPB-150-ART-Z06	UMPF-1.0 Detector adapter
15297573	UPB-150-ART-Z07	UMPF-2.0 Detector adapter
15298198	UPB-150-ART-Z09	Port plug
15298199	UPB-150-ART-Z10	Port reducer. xx aperture diameter set in 0.1mm steps.xx =