

UPB-150-ARTA

<https://www.gigahertz-optik.com/en-us/product/upb-150-arta/>

Product tags:



Description

Photometry to determine optical material properties

Optical 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 material properties as well as photometric measurands 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 detection of the reflected and transmitted light proportions.

UPB-150-ARTA 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 production from a solid 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-ARTA is ideal for multiple functions thanks to its five knife-edged measurement ports that can be used either while open or closed and the sample holder for cuvettes and sample glasses. The possible measurement setups include:

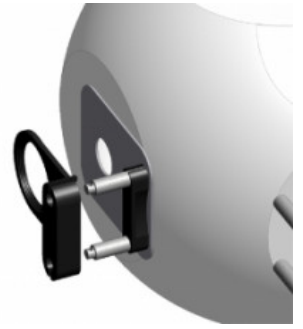
- Absorption
- Photoluminescence
- Organic electroluminescence
- 0°/d reflection
- 8°/d reflection with and without glamour
- 0°/d directed and diffuse transmission
- Measurements substitution correction
- Two-ray measurement setups
- Luminous flux measurements

Accessories for individual sphere assemblies

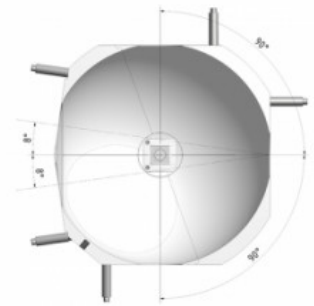
Port plugs and port reducers that can easily be fixed and removed using the Slide & Fix holder are offered for either closure or reduction of ports. An important feature of the UPB-150-ARTA is that the front side of the port plugs and reducers projects into the port and is on the same level as the sphere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

Universal sample holder for the measurement ports

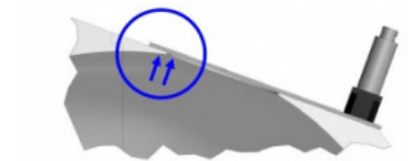
The sample holder is fixed and slid onto the posts of the Slide & Fix holder and ensures secure mounting of thin and thick samples. An important feature of the Slide & Fix system is that it can be combined with port reducers and a light trap.



UPB-150-ARTA multi-port integrating sphere with Slide & Fix system for mounting of the accessories



Alignment of the five measurement ports of the UPB-150-ARTA enables universal use of the sphere.



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

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.

Quick-change holder for detectors and light guides

Removable adapters are offered for mounting of detectors and light guides. Detector adapters for reflection, transmission and luminous flux set-ups are equipped with a baffle that can be aligned to one of the five measurement ports accordingly. The detector adapters for absorption, photoluminescence and organic electroluminescence have a baffle aligned to the center of the sphere. The UMPA port adapters of our modular integrating spheres can hereby be used. It is also possible to connect one of our fiber-coupled spectrometers [BTS2048-VL-TEC-F](#) or [BTS2048-UV-F](#).

Sample holder for cuvettes and small sample plates

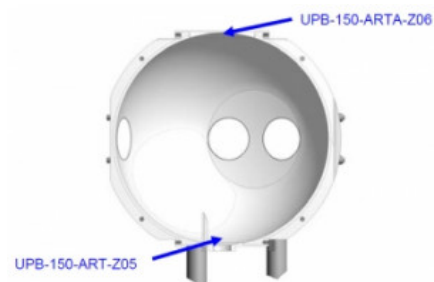
In order to perform absorption measurements in fluids, the UPB-150-ARTA can be equipped with an axially revolving sample holder for 10x10mm cuvettes. The clamp sample holder on the other hand enables fixation of test glass samples and thin foils. Photo-luminescent samples can be stimulated through the measurement ports e.g. using a laser. Electric wires can be added through the hollow axle of the sample holder to operate the sample for measurement of the organic electroluminescence.

Reflection coating made of barium sulfate

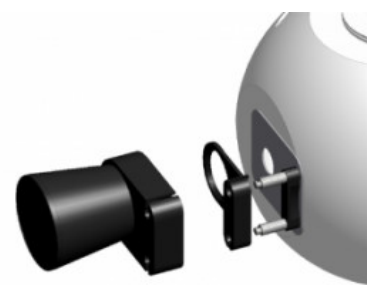
The UPB-150-ARTA is coated with Gigahertz-Optik's self-manufactured diffusely reflective barium sulfate (ODP97) coating. The multi-layer coating ensures good diffuse reflective properties over the entire usable spectral range.



The UPB-150-ARTA is fitted with a revolving sample holder for cuvette and plate samples for absorbance measurement applications.



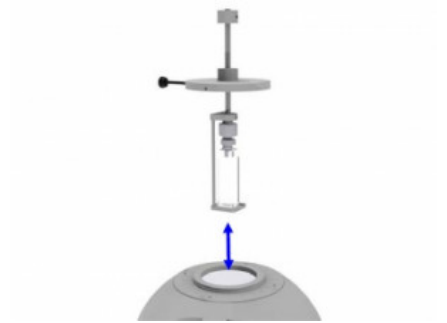
The upper sphere port is closed with a spherical port plug so as to perform reflection, transmission and luminous flux measurements.



Light trap for absorption of directed proportion of the reflection at 8°/d measurement setup as well as the transmittance of transparent samples. Can be combined with port reducers and sample holder.



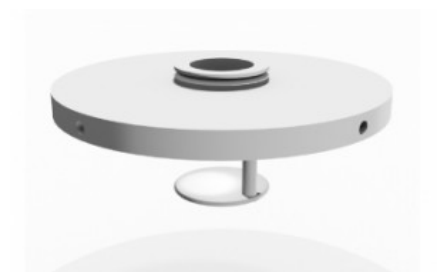
BTS2048-XX-F spectrometer used as detector



Exchange of cuvettes



UPB-150-ARTA, base sphere with stand



UPB-150-ARTA-Z01, detector port adapter with baffle aligned to the sphere center. UMPF-0.5 port frame



UPB-150-ARTA-Z03, revolving base for the cuvette and clamp sample holder



UPB-150-ARTA-Z04, cuvette holder. Hollow post



UPB-150-ARTA-Z05, clamp holder for test glass and foils. Hollow post



UPB-150-ARTA-Z06, plug for the upper sphere port. Spherical plug shape



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 mount with baffle



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



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



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



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

Specifications

General


Short description	Five port integrating sphere for universal use in transmission, reflection and absorption measurement application in the 300 nm to 2500 nm spectrum.
Main features	Barium sulfate coating. Sphere 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. Turnable sample holder for cuvette and sheet samples. Accessory for the application ports with Slide&Fix mounting System. Detector port with baffle.


Measurement range	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 Absorption sample holder: Turnable. Adapter for 10 mm x 10 mm cuvet. Clamp for sheet samples
Typical applications	Spectrophotometer. Other Transmission, reflection and Absorption measurement set-ups.
Calibration	-
Product	
Sphere diameter	150 mm
Coating	ODP97 based on barium sulfate
Measurement Port Diameter	30 mm
Knife edge thickness	0.5 mm
Number of measurement ports	Five
Angle tolerance of port setup	± 0.1 °
Accessories	Two detachable posts for the Slide & Fix system per port
Note	Upper and lower port: 45 mm respectively 30 mm with circumferential frame (Ø = 58 mm) with lateral V-notch
Miscellaneous	
Mounting	Bench-top stand with base plate
Weight	Approx. 1.1 kg

Downloads

Type	Description	File-Type	Download
Dimension	UPB-150-ARTA	pdf	https://www.gigahertz-optik.com/assets/Uploads/102801-upb-150-arta.pdf

Configurable with

Product Name	Product Image	Description	Go to product
VL-1101		Photometric detector head with VL-11 mount. Features: modular detector for use with integrating spheres, front lenses etc. For use with optometers and signal amplifiers	https://www.gigahertz-optik.com/en-us/product/vl-1101/

Product Name	Product Image	Description	Go to product
BN-Rxx-D2		Calibration Standards for Diffuse Reflection	https://www.gigahertz-optik.com/en-us/product/bn-r98-d2/
ODMP		Synthetic Diffuse Reflecting Material in Different Gray Scales	https://www.gigahertz-optik.com/en-us/product/odmp/
CLS-21		Collimator Light Source for Integrating Spheres	https://www.gigahertz-optik.com/en-us/product/cls-21/

Purchasing information

Article-Nr	Modell	Description
Product		
15298251	UPB-150-ARTA	Integrating sphere with stand. Application ports with S&F Posts.
Accessories		
15298253	UPB-150-ARTA-Z01	UMPF-0.5 detector adapter with baffle aligned to the sphere center
15298252	UPB-150-ARTA-Z03	Revolving base plate for the sample holder
15298422	UPB-150-ARTA-Z04	Cuvette holder
15298423	UPB-150-ARTA-Z05	Clamp holder
15298582	UPB-150-ARTA-Z06	Port plug for the upper port, spherical shape
15297567	UPB-150-ART-Z01	Port plug. Flat surface with ODP97 coating.
15297568	UPB-150-ART-Z02	Port reducer. Port diameter as specified in 0.1mm steps. Flat surface with ODP97 coating.
15297496	UPB-150-ART-Z02-3	Port reducer. 3mm port. Flat surface with ODP97 coating.
15298810	UPB-150-ART-Z02-10	Port reducer. 10mm port. Flat surface with ODP97 coating.
15297497	UPB-150-ART-Z02-15	Port reducer. 15mm port. Flat surface with ODP97 coating.
15297498	UPB-150-ART-Z02-25	Port reducer. 25mm port. Flat surface with ODP97 coating.
15297569	UPB-150-ART-Z03	Sample holder
15297570	UPB-150-ART-Z04	Light trap
15297571	UPB-150-ART-Z05	UMPF-0.5 detector adapter with baffle.
15297572	UPB-150-ART-Z06	UMPF-1.0 detector adapter with baffle.
15297573	UPB-150-ART-Z07	UMPF-2.0 detector adapter with baffle.

Article-Nr	Modell	Description
15298198	UPB-150-ART-Z09	Port plug with spherical surface
15298199	UPB-150-ART-Z10	Port reducer. Port diameter as specified in 0.1mm steps. Spherical surface with ODP97 coating.

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- After-Sales Support
- Calibrations & Re-Calibrations ([ISO/IEC 17025 Calibration Services](#), [factory calibration](#), [Calibration of Third-Party Products](#))
- Repairs & Updates
- OEM & Feasibility Consulting of Customized Solutions

[Send us your inquiry](#) or contact us by phone or e-mail. We would welcome your feedback too or review us on [Google](#).

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