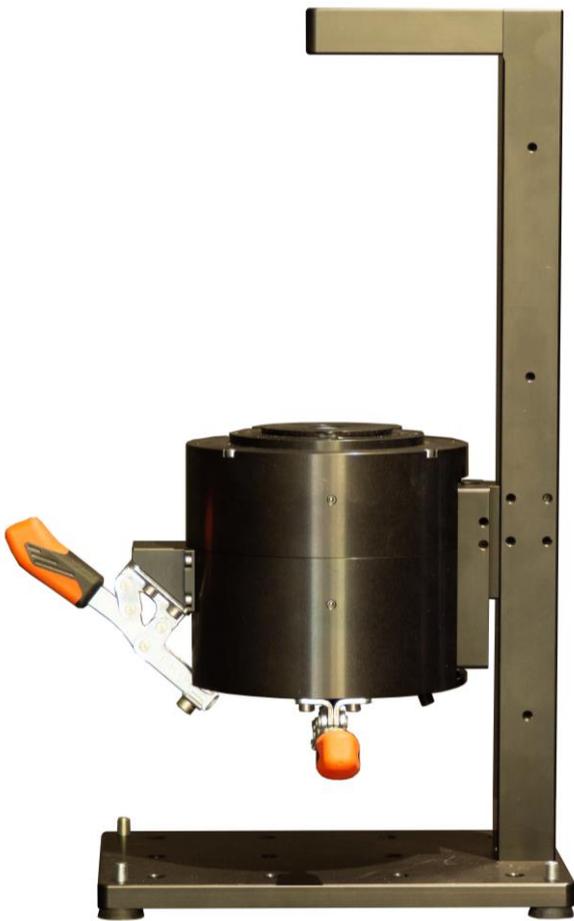


## MountainSphere

The MountainSphere is a high-precision integrating sphere for flexible use in optical metrology. The CNC-machined housing is made of aluminum. The coating inside can be either BaSO<sub>4</sub>, gold or PTFE. This depends mainly on the used wavelength range.



The basic version of the MountainSphere has an open light entrance port and a fiber-coupled light exit port for the measurement, which can be attached to an optical sensor or a fiber optical spectrometer via an SMA connector.

The light exit port can optionally be equipped with an electrical shutter to close it via a TTL signal.

The MountainSphere is available with an inner diameter of 50 mm or 100 mm. The diameter of the light entrance port of the 50 mm version (MountainSphere-50) is 10 mm. For the 100 mm version (MountainSphere-100), the port diameter can be changed between 10 mm and 20 mm via an adapter.

### Key Features

- Maximum flexibility through different versions
- Optional calibration for spectral irradiance
- Compatible with MountainSource-100-H calibration light source
- Measurement of reflection, transmission and haze
- Optional electrical shutter
- Two different sizes: 50 mm and 100 mm
- Exchangeable light entry port
- Fiber-coupled collimating lenses
- Optional MountainSphere-Stand

## Technical data:

Material	Aluminium
Coating	BaSO <sub>4</sub> , gold, PTFE
Inner diameter	50 mm or 100 mm
Port diameter	10 mm or 20 mm (exchangeable)
Fiber connector	SMA
TTL-shutter	Optional
Calibration	Spectral irradiance [ $\mu\text{W}/(\text{cm}^2 \text{ nm})$ ] (optional)

## MountainSphere Versions:

### MountainSphere-Irradiance

For measurement of absolute spectral irradiance, the MountainSphere can be calibrated for irradiance with the entire optical setup. Calibration data is generated between 350 nm and 1100 nm. The calibration points can be adapted to the wavelength points of the used spectrometer (factory calibration). Alternatively, the calibration light source (MountainSource-100-H) can be used for regular on-site calibration of the optical system. This calibrated halogen light source can be connected to the used MountainSphere and the irradiance can be adjusted to the light to be measured.

Alternatively the MountainSphere can be used for measurements of transmission through transparent samples with no absolute calibration. For this application the sphere can be mounted to the MountainSphere-Stand with a collimating lens for 0 degrees or for 20 degrees angle of incidence.

### MountainSphere-Reflection

For reflection measurements, the MountainSphere can be equipped with a collimating lens that illuminates the surface at a fixed incidence angle of 20° on which the integrating sphere is placed from above. Alternatively, you can use the MountainSphere-Stand to place the sample on the light entry port. The collimating lens can be fiber-coupled to any light source via an SMA connector.

### MountainSphere-Haze

In addition, the sphere can be equipped with a light exit port on the opposite side to the light entry port, which can be opened and closed by a lever. In this way, the diffuse and directional components can be determined separately for both reflection and transmission measurements. In this way, the haze value of the sample can be measured very easily. For haze measurements in reflection the sphere must be equipped with an additional collimating lens that illuminates the surface at a fixed incidence angle of 20° on which the integrating sphere is placed from above. Alternatively, you can use the MountainSphere-Stand to place the sample on the light entry port. The collimating lens can be fiber-coupled to any light source via an SMA connector.

#### About us

Mountain Instruments is a brand of Mountain Photonics GmbH. We aim at adding value to our customers by offering technical service, product development and in-house products.