



Super Mirror

TFHSM

RoHS

Catalog Code

W3176

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Optics & Optical Coatings

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Super Mirror

Femtosecond Laser

Frameless

Accuracy Guarantee

High Power

Ultra Broadband

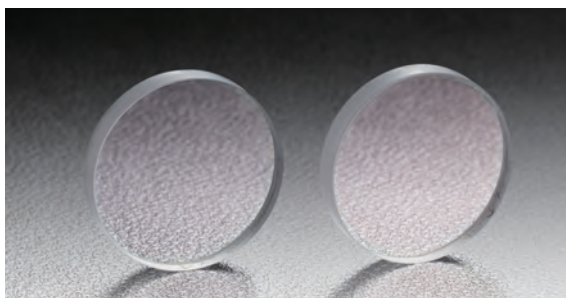
Dielectric Coating

Aluminum Coating

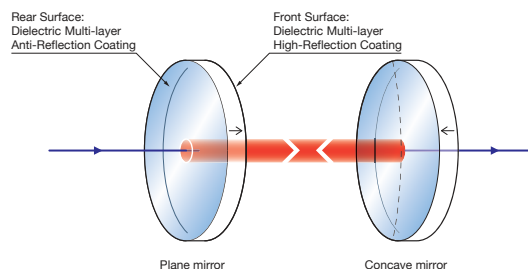
Gold Coating

The Fabry-Perot type resonator cavity is often used for measuring extremely high accuracy time or distance with use of the light. Super mirror is a ultra-high performance mirror that surface reflectance is close to 1 (100%) as much as possible in order to increase the performance of the resonator.

- By using an ion beam sputtering (IBS), high quality and dense coating with few defects has been coated.
- With a special polishing technique, the low-scattering substrate of surface flatness $Ra < 0.1\text{nm}$ is used.
- The mirror coating with reflectivity of 99.999% is achieved from the coating design technology that had been developed for many years.
- Scattering loss due to the substrate and the coating is very small, when it is incorporated into a cavity, it is to be expected a high finesse and very narrow spectral bandwidth.
- It is provided two types of wavelength 532nm and 1064nm.

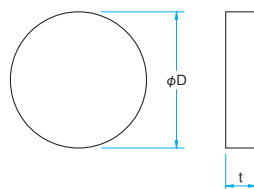


Schematic



Outline Drawing

(in mm)



- Tolerance
Diameter $\phi D_{-0.1}^0$
Thickness $t \pm 0.1$

Specifications

Material	Synthetic Fused Silica
Coating	Front Surface: Dielectric Multi-layer High-Reflection Coating Rear Surface: Dielectric Multi-layer Anti-Reflection Coating
Incident Angle	0°
Surface flatness of substrate	$\lambda/10$
Parallelism	$< 5''$
Surface Quality (Scratch-Dig)	10-5
Clear Aperture	80% of Actual Aperture
Reflectance of Rear Surface	$< 0.15\%$
Substrate Type	Optical Flat

Guide

- ▶ The super mirror coated on a concave substrate is available as custom. Please specify the radius of curvature.
- ▶ For products with different wavelengths, sizes, and incident angles not listed on-line or in our catalog, contact our Sales Division with your request.

Attention

- ▶ When used as a single mirror, it does not transmit the light because the reflectance is high. Please use it after assembled to precise cavity in order to use transmitted light.
- ▶ Please make a measurement or handling of the mirror in the clean environment. The dirt, dust and gas contamination will cause a significant effect on the measured value.
- ▶ If a cavity is consisted of two plane mirrors, the output light may become unstable. In order to realize the stable cavity, please change the mirror of one side or both into a concave mirror, and build a cavity.
- ▶ The Super Mirror has an extremely long lead time manufacture and test resulting in longer delivery than simple products on-line and in our general catalog. Please consult our Sales Team in advance when ordering.

Specifications

Part Number	Wavelength Range [nm]	Diameter ϕD [mm]	Thickness t [mm]	Reflectance*1 [%]	Loss*2 [ppm]
TFHSM-12.7C06-532	532	$\phi 12.7$	6	99.995	20
TFHSM-25C06-532	532	$\phi 25$	6	99.995	20
TFHSM-25.4C06-532	532	$\phi 25.4$	6	99.995	20
TFHSM-30C06-532	532	$\phi 30$	6	99.995	20
TFHSM-50C08-532	532	$\phi 50$	8	99.995	20
TFHSM-12.7C06-1064	1064	$\phi 12.7$	6	99.999	8
TFHSM-25C06-1064	1064	$\phi 25$	6	99.999	8
TFHSM-25.4C06-1064	1064	$\phi 25.4$	6	99.999	8
TFHSM-30C06-1064	1064	$\phi 30$	6	99.999	8
TFHSM-50C08-1064	1064	$\phi 50$	8	99.999	8

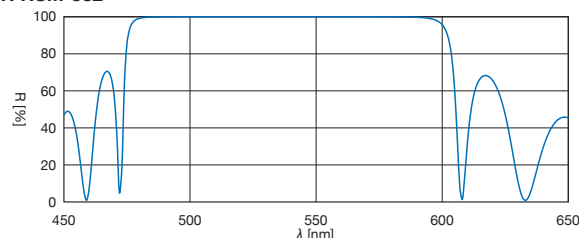
*1 The above is the reflectance measured in the CRD method. However, there may vary depending on measurement conditions and measurement method.

*2 The values indicated in "Loss" is only reference data. These data will not be attached with the product.

Typical Reflectance Data

R: Reflectance

TFHSM-532



TFHSM-1064

