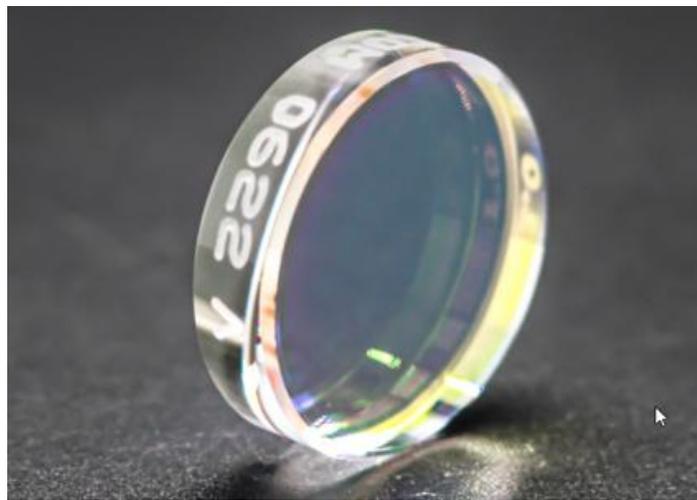


## Low loss ultra-high laser reflection plane mirror 1450-1650 nm reflectivity 99.99%



### ● Product Description

For laser optical components requiring ultra-low loss coating applications, Idealphotonics offers mirrors with  $R > 99.99\%$  and total loss less than 10 ppm. Such super-mirrors can be used in ring laser gyroscope assemblies or cavity ring-down applications. When processing low-absorption, low-scattering coatings on super-polished substrates, we employ an advanced IBS coating machine. To ensure cleanliness, this machine is housed in a dedicated ultra-clean room, and all production-related



substrate pre-treatment and post-processing procedures are completed within this cleanroom environment. Additionally, the ultra-clean room is equipped with various measurement devices, such as white light surface profilometers and high-resolution microscopes used during the inspection process. The reflectivity (with an accuracy of up to four decimal places) and total loss can be determined using a customized cavity ring-down setup. Measuring these values necessitates the use of super-polished substrates with a surface roughness of less than  $< 1 \text{ \AA}$  rms. To guarantee the quality of the finished mirrors, white light surface profilometers are also used for quality inspection.

- **Product features**

Low loss、 Different sizes can be customized、 Incident angle: 0deg

- **Part Number**

MP-149595

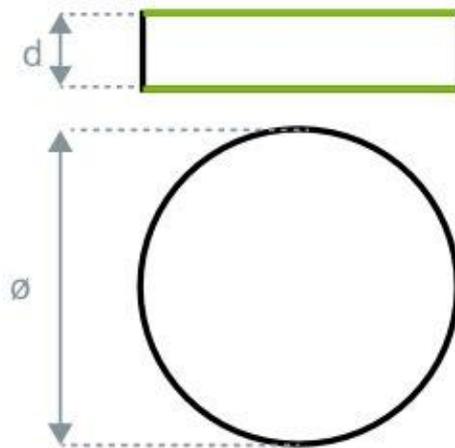
- **Application area**

TDLAS、 Cavity Ring-Down

## ● Core parameters

Shape	Diameter	Thickness
Round	25mm	6.35mm

## ● Dimension Drawing



## ● General Parameters

Parameter:

Name	149595 Standard Laser Plane Mirror
Category	Low Loss Optical Devices
Coating material (underside)	137683
Coating material (back side)	140851

**Optical parameters:**

<b>Material</b>	<b>Infrasil 302</b>
<b>Shape</b>	<b>Round</b>
<b>Diameter (Ø)</b>	<b>25 mm (-0.1 mm)</b>
<b>Thickness (t)</b>	<b>6.35 mm (<math>\pm 0.1</math> mm)</b>
<b>Parallelism</b>	<b>5 '</b>

<b>Optical parameters</b>	<b>Front (S2)</b>	<b>Optical parameters</b>	<b>Back side (S1)</b>
<b>Shape</b>	<b>flat</b>	<b>Shape</b>	<b>flat</b>
<b>Chamfer</b>	<b>0.3 mm (<math>\pm 0.1</math> mm)</b>	<b>Chamfer</b>	<b>0.3 mm (<math>\pm 0.1</math> mm)</b>
<b>Test area Øe</b>	<b>21</b>	<b>Test area Øe</b>	<b>21</b>
<b>Surface shape tolerance</b>	<b>3/0.2(0.2) [L/10 @546.1nm]</b>	<b>Surface shape tolerance</b>	<b>3/0.2(0.2) [L/10 @546.1nm]</b>
<b>Cleanliness</b>	<b>5/1x0.04; L1x0.004</b>	<b>Cleanliness</b>	<b>5/1x0.04; L1x0.004</b>

<b>Coating Specifications Front (S2) (137683)</b>	
<b>1<sup>st</sup> working range</b>	<b>Highly reflective(0°,1550nm)&gt;99.99%</b>
<b>Category</b>	<b>High reflectivity</b>
<b>Polarization</b>	<b>unpol.</b>
<b>Incident angle</b>	<b>0°</b>
<b>Wavelength range</b>	<b>1550 nm</b>
<b>High reflection</b>	<b>&gt; 99.99 %</b>
<b>2<sup>nd</sup> working range</b>	<b>T(0°,1550nm)~0.005%</b>
<b>Category</b>	<b>Transmittance</b>
<b>Polarization</b>	<b>unpol.</b>
<b>Incident angle</b>	<b>0°</b>
<b>Wavelength range</b>	<b>1550 nm</b>
<b>HT</b>	<b>~0.005%</b>
<b>Coating Specifications Backside (S1) (140851)</b>	
<b>1<sup>st</sup> Operating Range</b>	<b>Anti-reflection(0°,1450-1650nm)&lt;0.2%</b>
<b>Category</b>	<b>Anti-reflection</b>
<b>Incident Angle</b>	<b>0°</b>
<b>Wavelength Range</b>	<b>1450-1650 nm</b>
<b>AR / HT</b>	<b>&lt; 0.2 %</b>