

## Gold Flat Mirrors | GFM/GSMS

**RoHS**

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Measurement & Control

FA Electrical Parts

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Cleanroom & AntiStatic

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Mirrors

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Filters

Polarizers

Lenses

Multi-Element Optics

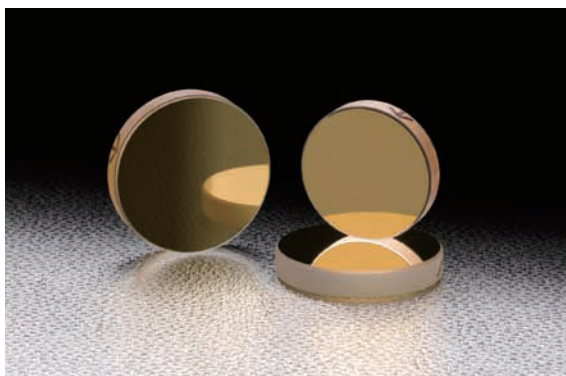
Prisms

Substrates & Windows

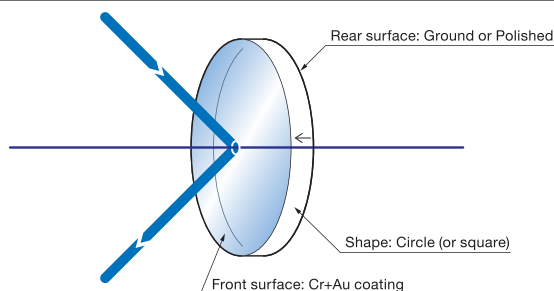
Holder & Vibration isolator

### Gold (Au) coated reflection mirrors have high reflectance in a wide infrared range.

- Chromium (Cr) is deliberately undercoated to better reinforce the adhesion of gold to the substrate.
- Gold mirrors with silicon substrates have higher durability than glass because gold coating adheres much stronger to silicon and has a higher thermal conductivity. (thermal conductivity of silicon is 111 times better compared to glass)



#### Schematic



#### Specifications

Material	BK7 Hard glass (Pyrex® etc.) Silicon crystal
Coating	Cr (chrome) + Au (Gold)
Parallelism	<3'
Surface Quality (Scratch-Dig)	40-20
Clear aperture	90% of diameter or circle that internally contacts 90% square of dimension
Laser Damage Threshold	1.2kW/cm² (CW laser)

#### Guide

- ▶ Please contact our International Sales Division for customized products. (customized on outer diameter, etc.)
- ▶ Pyrex® is a registered trademark of Corning Inc.

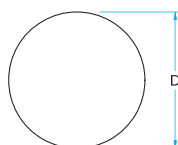
#### Attention

- ▶ When silicon mirrors are water-cooled, heat dissipates more quickly and they have higher durability.
- ▶ Since gold coating has an extremely low mechanical strength, it can only be blown by air to clean its coating surface. It must be handled carefully.
- ▶ Reflectance of the specification are represented by the average of the reflectance of P polarized light and S polarized light.

#### Outline Drawing

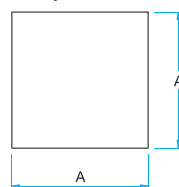
(in mm)

##### ●Circle



●Tolerance  
Diameter  $D \begin{smallmatrix} +0 \\ -0.1 \end{smallmatrix}$   
Thickness  $t \pm 0.1$

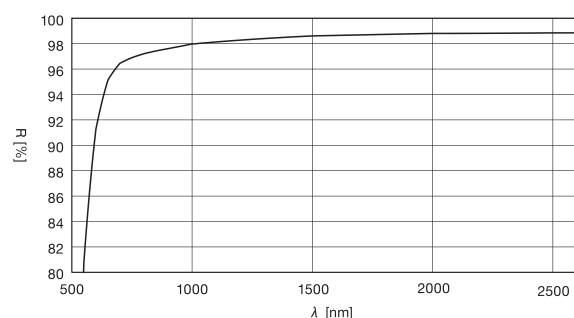
##### ●Square



●Tolerance  
Length  $A \begin{smallmatrix} +0 \\ -0.1 \end{smallmatrix}$   
Thickness  $t \pm 0.1$

#### Typical Reflectance Data

R: Reflectance



## Gold Flat Mirrors | GFM/GSMS

### Gold Flat Mirrors

Circle						
Part Number	Dimension D [mm]	Thickness t [mm]	Surface Flatness		Material	Rear Surface
			(at 632.8nm)	(at 10.6μm)		
GFM-20C05-10	φ20	5	λ/10	λ/160	BK7	Ground
GFM-25C05-10	φ25	5	λ/10	λ/160	BK7	Polished
GFM-30C05-10	φ30	5	λ/10	λ/160	BK7	Polished
GFM-40C06-10	φ40	6	λ/10	λ/160	BK7	Polished
GFM-50C08-10	φ50	8	λ/10	λ/160	BK7	Polished

Square						
Part Number	Length A [mm]	Thickness t [mm]	Surface Flatness		Material	Rear Surface
			(at 632.8nm)	(at 10.6μm)		
GFM-20S05-10	□20	5	λ/10	λ/160	BK7	Ground
GFM-25S05-10	□25	5	λ/10	λ/160	BK7	Ground
GFM-30S05-10	□30	5	λ/10	λ/160	BK7	Ground
GFM-50S08-10	□50	8	λ/10	λ/160	Hard glass	Polished

### Gold Silicon Mirrors

Circle						
Part Number	Dimension D [mm]	Thickness t [mm]	Surface Flatness		Material	Rear Surface
			(at 632.8nm)	(at 10.6μm)		
<b>GSM-30C03-2</b>	φ30	3	λ	λ/16	Silicon crystal	Ground
<b>GFMS-40C04-2</b>	φ40	4	λ	λ/16	Silicon crystal	Ground
<b>GFMS-50C05-2</b>	φ50	5	λ	λ/16	Silicon crystal	Ground

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Compatible Optic Mounts

KMH-HS25, -HS30 / KMH-MP50 / MHF-20 / GMB-40M