

Gold Flat Mirrors | TFG/TFGS

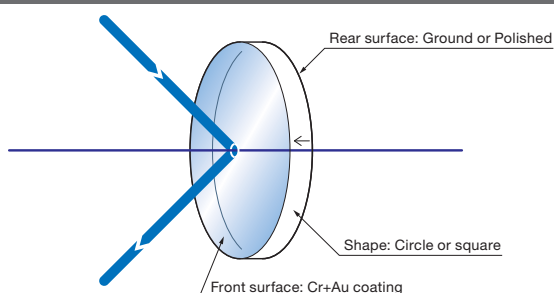
RoHS

Gold (Au) coated reflection mirrors have high reflectance over wide infrared range.

- Chromium (Cr) is used as the 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)



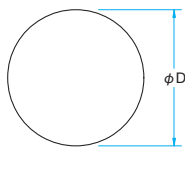
Schematic



Outline Drawing

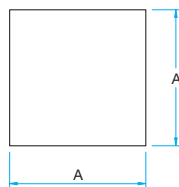
(in mm)

●Circle



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

●Square



●Tolerance
Length $A_{-0.1}^{+0}$
Thickness $t \pm 0.1$

| 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/cm ² (CW laser) |

Guide

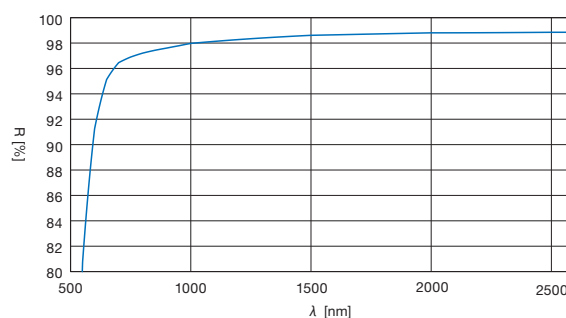
- ▶ Please contact our Sales Division for customized products. (customize outer diameter, etc.)
- ▶ Pyrex® is a registered trademark of Corning Inc.

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, extra care should be taken and it is recommended that cleaning of the surface be limited to blowing off the coated surface.
- ▶ Reflectance of the specification are represented by the average of the reflectance of P polarized light and S polarized light.

Typical Reflectance Data

R: Reflectance



Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motorized Stages

Light Sources & Laser Safety

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

Super Mirror

Femtosecond Laser

Frameless

Accuracy Guarantee

High Power

Ultra Broadband

Dielectric Coating

Aluminum Coating

Gold Coating



Gold Flat Mirrors

| Circle | | | | | | |
|--------------|----------------------------|---------------------|------------------|-------------------|----------|--------------|
| Part Number | Dimension ϕD [mm] | Thickness t [mm] | Surface Flatness | | Material | Rear Surface |
| | | | (at 632.8nm) | (at 10.6 μ m) | | |
| TFG-20C05-10 | $\phi 20$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Ground |
| TFG-25C05-10 | $\phi 25$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Polished |
| TFG-30C05-10 | $\phi 30$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Polished |
| TFG-40C06-10 | $\phi 40$ | 6 | $\lambda/10$ | $\lambda/160$ | BK7 | Polished |
| TFG-50C08-10 | $\phi 50$ | 8 | $\lambda/10$ | $\lambda/160$ | BK7 | Polished |

| Square | | | | | | |
|--------------|------------------|---------------------|------------------|-------------------|------------|--------------|
| Part Number | Length A [mm] | Thickness t [mm] | Surface Flatness | | Material | Rear Surface |
| | | | (at 632.8nm) | (at 10.6 μ m) | | |
| TFG-20S05-10 | $\square 20$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Ground |
| TFG-25S05-10 | $\square 25$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Ground |
| TFG-30S05-10 | $\square 30$ | 5 | $\lambda/10$ | $\lambda/160$ | BK7 | Ground |
| TFG-50S08-10 | $\square 50$ | 8 | $\lambda/10$ | $\lambda/160$ | Hard glass | Polished |

Gold Silicon Mirrors

| Circle | | | | | | |
|--------------|----------------------------|---------------------|------------------|-------------------|-----------------|--------------|
| Part Number | Dimension ϕD [mm] | Thickness t [mm] | Surface Flatness | | Material | Rear Surface |
| | | | (at 632.8nm) | (at 10.6 μ m) | | |
| TFGS-30C03-2 | $\phi 30$ | 3 | λ | $\lambda/16$ | Silicon crystal | Ground |
| TFGS-40C04-2 | $\phi 40$ | 4 | λ | $\lambda/16$ | Silicon crystal | Ground |
| TFGS-50C05-2 | $\phi 50$ | 5 | λ | $\lambda/16$ | Silicon crystal | Ground |

Compatible Optic Mounts

MHG-HS25, -HS30 / MHG-MP50 / MHF-20 / MHAN-40M

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Adjusters

MotORIZED
Stages

Light Sources &
Laser Safety

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

Super Mirror

Femtosecond Laser

Frameless

Accuracy Guarantee

High Power

Ultra Broadband

Dielectric Coating

Aluminum Coating

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