

# Chromium Plate Half Mirrors

PSCH

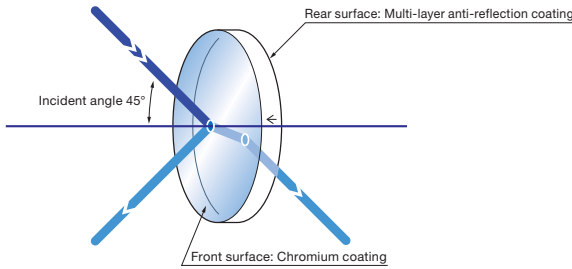
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Chromium plate half mirrors are plate beamsplitters that are coated with chromium (Cr) on the front surface of optical parallels or wedged substrates. The other surface is coated with multi-layer anti-reflection.

- Half mirror divides input beam into reflectance and transmittance ratio of 1:1. A beamsplitter of R:T=1:1 is called "Half Mirror".
- Approximately one third of the input beam is lost because of the absorption of chromium. However these beamsplitters do not depend on wavelength, polarization and angle of incidence of the input beam, and provide a highly neutral reflectivity.
- Plate beamsplitters have beam deviations on transmission and ghost on rear surface reflections. Wedged substrates are used to prevent ghosting.

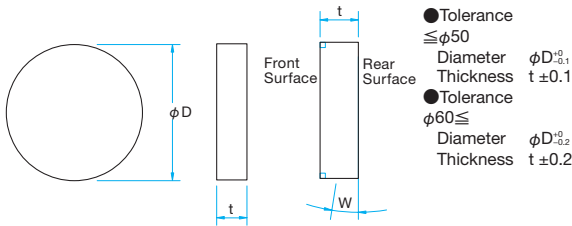


### Schematic



### Outline Drawing

(in mm)



### Specifications

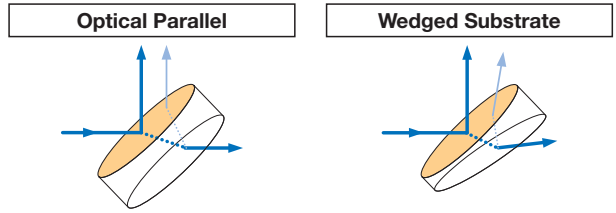
Material	BK7
Surface Flatness	$\lambda/10$
Coating	Front surface: Chromium Rear surface: Multi-layer anti-reflection coating
Incident angle	45°
Transmittance	Average 30±5% (The average value of the P-Polarization and the S-Polarization)
Divergence ratio (reflectance : transmittance)	1 : 1
Laser Damage Threshold	0.25J/cm <sup>2</sup> (Laser pulse width 10ns, repetition frequency 20Hz)
Surface Quality (Scratch-Dig)	40-20
Clear aperture	90% of actual aperture

### Guide

- ▶ Please contact our Sales Division for customized products. (Customized on size, wavelength or R:T, etc.)
- ▶ For a guarantee in reflected wavefront error or transmitted wavefront error, please contact our Sales Division with your requests.

### Attention

- ▶ The beam deviation at transmission of a wedged beamsplitter is large compared to a one made of optical parallel.
- ▶ The amount of beam deviation of a beamsplitter depends on the thickness of the substrate, the wavelength or the angle of incidence of the input beam.
- ▶ Transmission curves are based on actual measurements and may vary with manufacturing lots.
- ▶ Surface flatness is the reflected wavefront distortion of the surface prior to coating.
- ▶ Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.



### Specifications

Part Number	Wavelength Range [nm]	Diameter ϕD [mm]	Thickness t [mm]	Parallelism W
PSCH-25.4C03-10-550	400 - 700	ϕ25.4	3	<5"
PSCH-30C03-10-550	400 - 700	ϕ30	3	<5"
PSCH-30C05-10W-550	400 - 700	ϕ30	5	1°±5'
PSCH-40C04-10-550	400 - 700	ϕ40	4	<5"
PSCH-50C05-10-550	400 - 700	ϕ50	5	<5"
PSCH-50C08-10W-550	400 - 700	ϕ50	8	1°±5'
PSCH-60C06-10-550	400 - 700	ϕ60	6	<5"
PSCH-100C10-10-550	400 - 700	ϕ100	10	<5"
PSCH-100C15-10W-550	400 - 700	ϕ100	15	1°±5'
PSCH-25.4C03-10-800	750 - 850	ϕ25.4	3	<5"
PSCH-30C03-10-800	750 - 850	ϕ30	3	<5"
PSCH-30C05-10W-800	750 - 850	ϕ30	5	1°±5'
PSCH-50C05-10-800	750 - 850	ϕ50	5	<5"
PSCH-50C08-10W-800	750 - 850	ϕ50	8	1°±5'

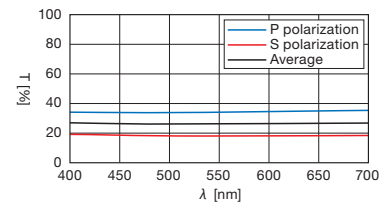
### Compatible Optic Mounts

BHAN-30S, -50S / MHAN-25.4S, -40S, -60S / MHG-MP25-NL, MP30-NL, MP50-NL

### Typical Transmittance Data

#### PSCH-550

T: Transmission



#### PSCH-800

