

Harmonic Separators | YHS/YHSQ

RoHS

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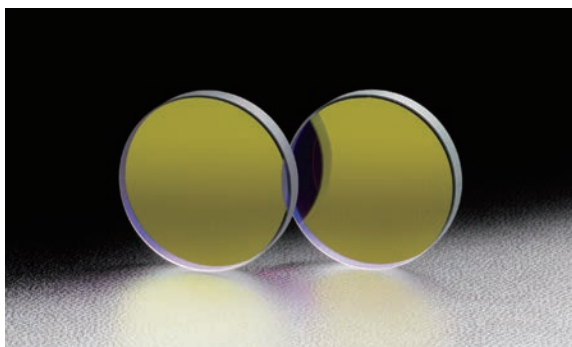
Harmonic Separator

Beam Samplers

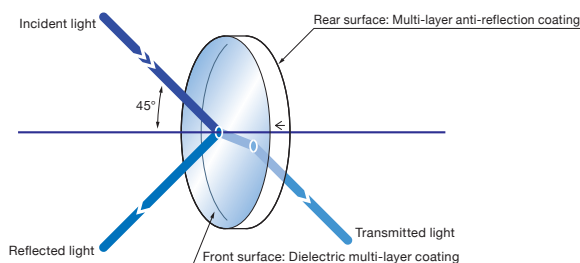
Others

Used to separate or combine YAG (1064nm) and harmonic-converted laser beams (266nm, 355nm, 532nm) by wavelength. Five types with different reflectance wavelengths are available.

- Since a dielectric multilayer coating is used, there is no absorption in the coating and it can be used for laser beams with high energy density.
- Can be used for lasers with large beam diameters because of the plate type.
- The high reflectivity of 99.5% allows separation of reflected wavelengths from transmitted wavelengths.

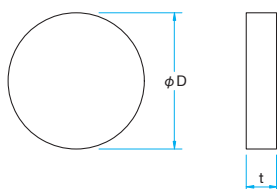


Schematic



Outline Drawing

(in mm)



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

Specifications

Material	YHS: BK7, YHSQ: Synthetic fused silica
Surface Flatness	$\lambda/10$
Coating	Front surface: Dielectric multi-layer coating Rear surface: Multi-layer anti-reflection coating
Angle of Incidence	45°
Parallelism	<5"
Surface Quality (Scratch-Dig)	10-5
Clear aperture	90% of actual aperture

Guide

- ▶ Please contact our Sales Division for customized products. (Customized on size, wavelength or R:T, etc.) [Reference](#) B068
- ▶ For a guarantee in reflected wavefront error or transmitted wavefront error, please contact our Sales Team with your requests.
- ▶ Please refer to the website for numerical data for various characteristic graphs. (Reference data, EXCEL file format)

Attention

- ▶ Due to the effect of the refractive index and thickness of the substrate, the light path of transmitted light shifts several mm parallel to the incident light.
- ▶ Transmittance and reflectance wavelength characteristics change when used at incident angles other than 45 degrees.
- ▶ Use the side indicated by the arrow on the side of the substrates as the reflective side. Reflection on the back side may cause loss of light intensity and ghosting.
- ▶ Transmitted light is rarely mixed with light of reflected wavelengths, but reflected light may be mixed with light of transmitted wavelengths. (5% to 15%)
- ▶ The wavelength characteristic of transmittance varies depending on the polarization orientation of the laser. The specifications show average values for P and S polarization. Please check the actual laser polarization orientation before use.

For Reflected wavelength : 266nm, Transmitted wavelength : 532, 1064nm

Part Number	Diameter ϕD [mm]	Thickness t [mm]	Reflectance at 266nm (The average value of the P-Polarization and the S-Polarization) [%]	Transmittance at 532·1064nm (The average value of the P-Polarization and the S-Polarization) [%]	Laser Damage Threshold* [J/cm²]
YHSQ-25.4C05-266	$\phi 25.4$	5	>99.2	>95	2
YHSQ-30C05-266	$\phi 30$	5	>99.2	>95	2
YHSQ-50C08-266	$\phi 50$	8	>99.2	>90	2

*Laser pulse width 10ns, repetition frequency 20Hz

For Reflected wavelength : 266, 355nm, Transmitted wavelength : 532, 1064nm

Part Number	Diameter ϕD [mm]	Thickness t [mm]	Reflectance at 266·355nm (The average value of the P-Polarization and the S-Polarization) [%]	Transmittance at 532·1064nm (The average value of the P-Polarization and the S-Polarization) [%]	Laser Damage Threshold* [J/cm²]
YHSQ-25.4C05-266/355	$\phi 25.4$	5	>98	>90	2 (@266nm) 5 (@355nm)
YHSQ-30C05-266/355	$\phi 30$	5	>98	>90	2 (@266nm) 5 (@355nm)
YHSQ-50C08-266/355	$\phi 50$	8	>98	>90	2 (@266nm) 5 (@355nm)

*Laser pulse width 10ns, repetition frequency 20Hz

For Reflected wavelength : 355nm, Transmitted wavelength : 532, 1064nm

Part Number	Diameter ϕD [mm]	Thickness t [mm]	Reflectance at 355nm (The average value of the P-Polarization and the S-Polarization) [%]	Transmittance at 532·1064nm (The average value of the P-Polarization and the S-Polarization) [%]	Laser Damage Threshold* [J/cm²]
YHS-25.4C05-355	$\phi 25.4$	5	>99.5	>85	5
YHS-30C05-355	$\phi 30$	5	>99.5	>85	5
YHS-50C08-355	$\phi 50$	8	>99.5	>85	5
YHSQ-25.4C05-355	$\phi 25.4$	5	>99.5	>85	5
YHSQ-30C05-355	$\phi 30$	5	>99.5	>85	5
YHSQ-50C08-355	$\phi 50$	8	>99.5	>85	5

*Laser pulse width 10ns, repetition frequency 20Hz

For Reflected wavelength : 532nm, Transmitted wavelength : 1064nm

Part Number	Diameter ϕ D [mm]	Thickness t [mm]	Reflectance at 532nm (The average value of the P-Polarization and the S-Polarization) [%]	Transmittance at 1064nm (The average value of the P-Polarization and the S-Polarization) [%]	Laser Damage Threshold* [J/cm ²]
YHS-25.4C05-532	ϕ 25.4	5	>99.5	>95	8
YHS-30C05-532	ϕ 30	5	>99.5	>95	8
YHS-50C08-532	ϕ 50	8	>99.5	>95	8
YHSQ-25.4C05-532	ϕ 25.4	5	>99.5	>95	8
YHSQ-30C05-532	ϕ 30	5	>99.5	>95	8
YHSQ-50C08-532	ϕ 50	8	>99.5	>95	8

*Laser pulse width 10ns, repetition frequency 20Hz

For Reflected wavelength : 1064nm, Transmitted wavelength : 532nm

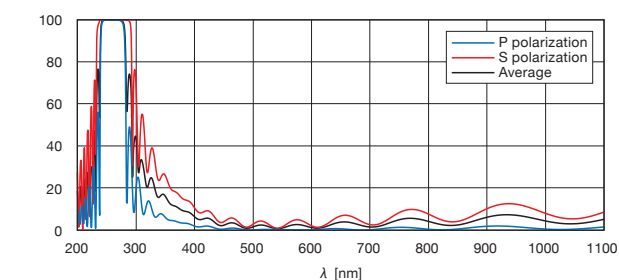
Part Number	Diameter ϕ D [mm]	Thickness t [mm]	Reflectance at 1064nm (The average value of the P-Polarization and the S-Polarization) [%]	Transmittance at 532nm (The average value of the P-Polarization and the S-Polarization) [%]	Laser Damage Threshold* [J/cm ²]
YHS-25.4C05-1064	ϕ 25.4	5	>99.5	>90	20
YHS-30C05-1064	ϕ 30	5	>99.5	>90	20
YHS-50C08-1064	ϕ 50	8	>99.5	>90	20
YHSQ-25.4C05-1064	ϕ 25.4	5	>99.5	>90	20
YHSQ-30C05-1064	ϕ 30	5	>99.5	>90	20
YHS-50C08-1064	ϕ 50	8	>99.5	>90	20

*Laser pulse width 10ns, repetition frequency 20Hz

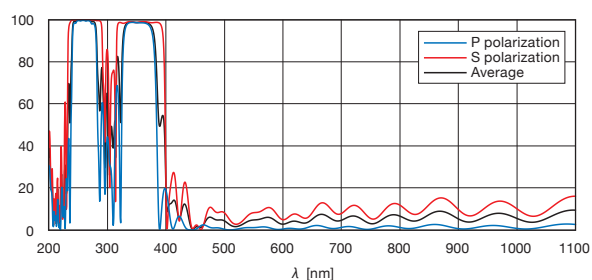
Typical Reflectance Data

R: Reflectance

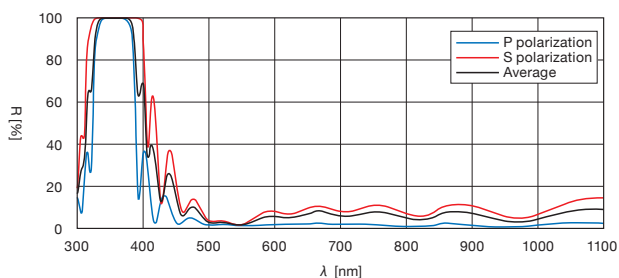
YHSQ-266



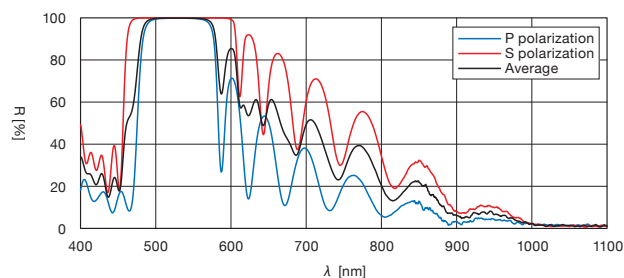
YHSQ-266/355



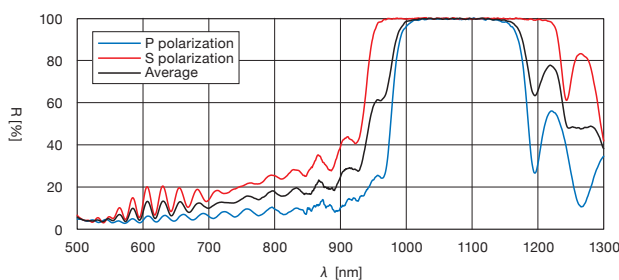
YHS/YHSQ-355



YHS/YHSQ-532



YHS/YHSQ-1064



Compatible Optic Mounts

MHG-HS25-NL, HS30-NL / MHG-PM50-NL / BHAN-30S, -50S

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