

Knife Edge Right Angle Prisms

KRPB

RoHS

Catalog
Code

W3125

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CoatingsOpto-
Mechanics

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45 Degrees Angle

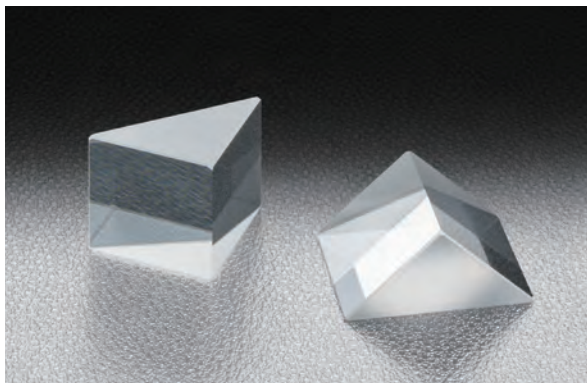
Retro-reflectors

Equilateral
Dispersing Prisms

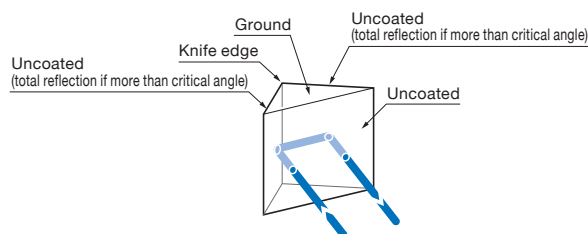
Others

The knife edge prism is polished to the sharp edges of the right angle surfaces and have no chamfers on these edges.

- With knife edge prism having no coating (KRPB) by using light in the range of 0 ± 5.7 degrees angle of incidence to the slope surface the total reflection critical angle is obtained.

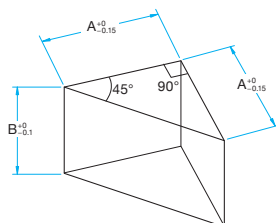


Schematic



Outline Drawing

(in mm)



Chamfered, the entire circumference of the ridge crest except right angles
 $<C0.2 (A \leq 15)$
 $<C0.3 (20 \leq A)$

Specifications

Material	BK7 (Refractive Index $n_d = 1.517$)
Ridge Processing	Right-angle ridge: Knife edge (Not chamfered) Other ridge: Chamfered
Clear aperture	90% of Circle or Ellipse to Actual dimension for entrance and exit surface

Guide

- Contact our Sales Division with your request for custom prisms not listed on our website or in the catalog.

Attention

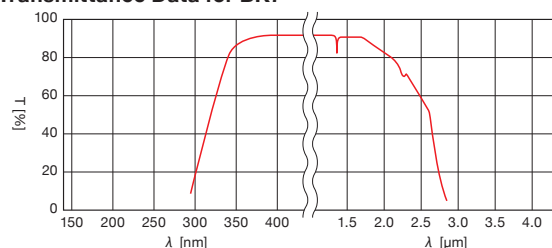
- Knife-edge ridge right angle is very easily damaged so please carefully handled.
- The knife edge will not be able to be cleaned with lens paper. Use an air blower to remove small dust particles.
- A dimension measured is slightly shorter than the catalog size because it contains chamfer dimension. Dimensional tolerances are defined by the sides of the triangle with the slope and two bottom surface.
- KRPB (with a no coat), the reflectance of the reflection above the critical angle is nearly 100%, there is a loss of about 8% in the reflection of the input and the exit surface of the prism.
- Sometimes when dirt or fingerprints on the surface with no coating, total reflection will not happen anymore at the critical angle. Do not contact anything on the no coated surface.

Specifications

Part Number	A = B [mm]	Surface flatness of substrate	Angle tolerance		Surface Quality (Scratch-Dig)
			90°	45°	
KRPB-10-4M	10	$\lambda/4$	$\pm 1'$	$\pm 1'$	10-5
KRPB-15-4M	15	$\lambda/4$	$\pm 1'$	$\pm 1'$	10-5
KRPB-20-4M	20	$\lambda/4$	$\pm 1'$	$\pm 1'$	10-5
KRPB-25-4M	25	$\lambda/4$	$\pm 1'$	$\pm 1'$	10-5
KRPB-30-4M	30	$\lambda/4$	$\pm 1'$	$\pm 1'$	10-5
KRPB-10-10H	10	$\lambda/10$	$\pm 5''$	$\pm 30''$	10-5
KRPB-15-10H	15	$\lambda/10$	$\pm 5''$	$\pm 30''$	10-5
KRPB-20-10H	20	$\lambda/10$	$\pm 5''$	$\pm 30''$	10-5
KRPB-25-10H	25	$\lambda/10$	$\pm 5''$	$\pm 30''$	10-5
KRPB-30-10H	30	$\lambda/10$	$\pm 5''$	$\pm 30''$	10-5

Typical Transmittance Data T: Transmission

Transmittance Data for BK7

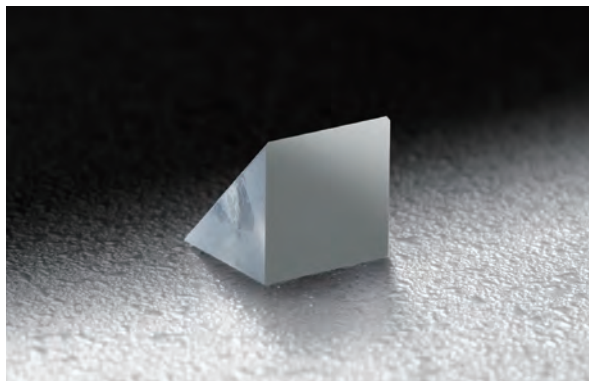


Compatible Optic Mounts

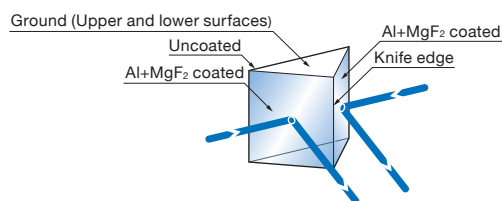
PLH / KKD / SHA

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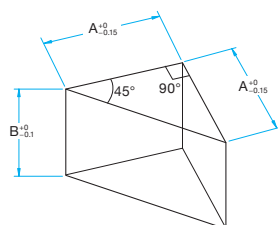


Schematic



Outline Drawing

(in mm)



Chamfered, the entire circumference of the ridge crest except right angles
<C0.2 ($A \leq 15$)
<C0.3 ($20 \leq A$)

Specifications

Material	BK7 (Refractive Index $n_d = 1.517$)
Ridge Processing	Right-angle ridge: Knife edge (Not chamfered) Other ridge: Chamfered
Coating	2-surface that make up the right angle: Al+MgF ₂ (Protected Aluminum), Obliquity: Uncoating
Laser Damage Threshold	0.25J/cm ² (Laser pulse with 10ns, repetition frequency 20Hz)
Clear aperture	90% of Circle or Ellipse to Actual dimension for entrance and exit surface

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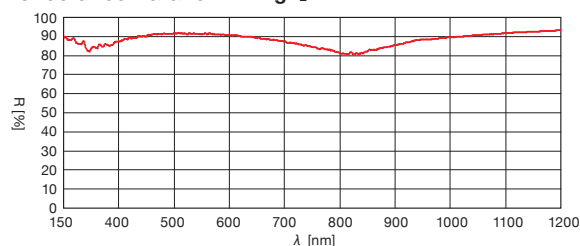
Specifications

Part Number	A = B [mm]	Surface flatness of substrate	Angle tolerance		Surface Quality (Scratch-Dig)
			90°	45°	
KRPB4-10-550	10	$\lambda/4$	$\pm 1'$	$\pm 1'$	40-20
KRPB4-15-550	15	$\lambda/4$	$\pm 1'$	$\pm 1'$	40-20
KRPB4-20-550	20	$\lambda/4$	$\pm 1'$	$\pm 1'$	40-20
KRPB4-25-550	25	$\lambda/4$	$\pm 1'$	$\pm 1'$	40-20
KRPB4-30-550	30	$\lambda/4$	$\pm 1'$	$\pm 1'$	40-20

Typical Reflectance Data

R: Reflectance

Reflectance Data for Al+MgF₂



Compatible Optic Mounts

PLH / KKD / SHA