

Reasonable Achromatic Lens S-DLB

RoHS Code W3197

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motoeized **Stages**

Light Sources & Laser Safety

Index

Guide

Mirrors

Beamsplitters

Polarizers

Multi-Element Op

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

Achromats

Focusing Lenses

fθ Lenses **Objectives**

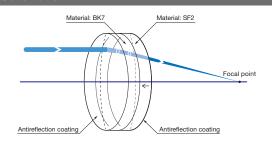
Expanders

Others

An economic general use achromatic lens suitable for an optical system, which does not require high surface quality imaging such as a microscope lens or telescope lens.



Schematic



Outline Drawing ●Tolerance Diameter<φ30 ϕD_{-0}^{+0} Thickness tc±0.2 ±1% Focal length (546.1nm)

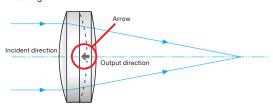
| ϕ 10 – ϕ 20 | | | | | |
|-----------------------|-----------------------------|---------------------------|---------------------------------|-----------------------------------|------------------------------------|
| Part Number | Diameter \$\phi D\$ [mm] | Focal length f [mm] | Edge Thickness te [mm] | Center Thickness tc [mm] | Back focal length fb [mm] |
| S-DLB-10-20PM | φ10 | 20.0 | 5.1 | 6.7 | 16.6 |
| S-DLB-10-25PM | φ10 | 25.0 | 4.9 | 6.1 | 22.1 |
| S-DLB-10-40PM | φ10 | 40.0 | 4.6 | 5.3 | 37.5 |
| S-DLB-10-50PM | φ10 | 50.0 | 4.4 | 5.0 | 47.5 |
| S-DLB-10-100PM | φ10 | 100.5 | 4.2 | 4.5 | 98.1 |
| S-DLB-15-25PM | φ15 | 25.2 | 6.0 | 8.8 | 20.7 |
| S-DLB-15-30PM | φ15 | 30.1 | 5.7 | 8.0 | 26.0 |
| S-DLB-15-40PM | φ15 | 40.1 | 5.2 | 6.9 | 36.5 |
| S-DLB-15-50PM | φ15 | 50.1 | 5.0 | 6.3 | 47.1 |
| S-DLB-15-80PM | φ15 | 79.9 | 4.7 | 5.5 | 77.1 |
| S-DLB-15-100PM | φ15 | 100.0 | 4.5 | 5.2 | 97.3 |
| S-DLB-20-30PM | φ20 | 30.6 | 6.8 | 10.9 | 24.9 |
| S-DLB-20-40PM | φ20 | 40.1 | 6.2 | 9.2 | 35.3 |
| S-DLB-20-50PM | φ20 | 50.2 | 5.7 | 8.1 | 46.0 |
| S-DLB-20-60PM | φ20 | 60.2 | 5.4 | 7.4 | 56.6 |
| S-DLB-20-70PM | φ20 | 70.1 | 5.2 | 6.9 | 66.7 |
| S-DLB-20-80PM | φ20 | 79.9 | 5.1 | 6.6 | 76.6 |
| S-DLB-20-100PM | φ20 | 99.5 | 4.9 | 6.1 | 96.4 |
| S-DLB-20-120PM | φ20 | 120.3 | 4.7 | 5.7 | 117.3 |
| S-DLB-20-150PM | φ20 | 149.8 | 4.6 | 5.4 | 147.0 |
| S-DLB-20-200PM | φ20 | 200.1 | 4.5 | 5.1 | 197.3 |

- Specification except surface quality is almost the same as DLB series. Except when used in high-precision experiment using a laser, this lens is recommended.
- It is optimized so that focal length gap is small in the visible light range and the aberration is minimized.

| Specifications | |
|-------------------------------|--|
| Material | BK7, SF2 |
| Design wavelength | Blue: 486.1nm, Green: 546.1nm, Red: 656.3nm |
| Centration | <3′ |
| Cement | Ultraviolet Hardened Adhesive |
| Coating | Antireflection coating |
| Surface Quality (Scratch-Dig) | 60–40 |
| Clear aperture | 90% of actual aperture |
| Laser Damage Threshold | 0.3J/cm ² (Laser pulse width 10ns, repetition frequency 20Hz) |

Attention

- Achromatic lens is used when focusing an image at infinity or when making the point light source to collimated light. It does not provide sufficient optical performance when used in such as short-range imaging.
- ▶ There is a direction of the incident parallel light with achromatic lens. The radius of curvature is allowed to be incident parallel light from the side of (the surface indicated by arrows) small curvature surface. If the parallel light incidents from the opposite side, then spherical aberration and chromatic aberration occur and the focused spot size will be large.



| ϕ 25 – ϕ 30 | | | | | |
|-------------------------------------|-----------------------------|---------------------------|---------------------------------|-----------------------------------|------------------------------------|
| Part Number | Diameter \$\phi D\$ [mm] | Focal length f [mm] | Edge Thickness te [mm] | Center Thickness tc [mm] | Back focal length fb [mm] |
| S-DLB-25-50PM | φ25 | 50.1 | 7.1 | 10.9 | 44.9 |
| S-DLB-25-70PM | φ25 | 69.9 | 6.3 | 9.0 | 65.3 |
| S-DLB-25-100PM | φ25 | 100.2 | 5.9 | 7.7 | 96.5 |
| S-DLB-25-120PM | φ25 | 119.8 | 5.6 | 7.2 | 116.2 |
| S-DLB-25-150PM | φ25 | 149.6 | 5.5 | 6.7 | 146.2 |
| S-DLB-30-60PM | φ30 | 60.3 | 8.1 | 12.6 | 53.9 |
| S-DLB-30-100PM | φ30 | 100.7 | 6.8 | 9.5 | 96.0 |
| S-DLB-30-120PM | φ30 | 120.1 | 6.6 | 8.8 | 115.7 |
| S-DLB-30-150PM | φ30 | 150.0 | 6.3 | 8.1 | 146.0 |
| S-DLB-30-200PM | φ30 | 200.2 | 6.0 | 7.3 | 196.4 |
| S-DLB-30-300PM | φ30 | 300.4 | 5.7 | 6.6 | 296.9 |

Compatible Optic Mounts

Principal point

410 420

LHF-10S, -15S, -20S, -25S, -30S

