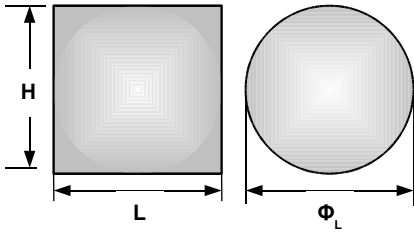


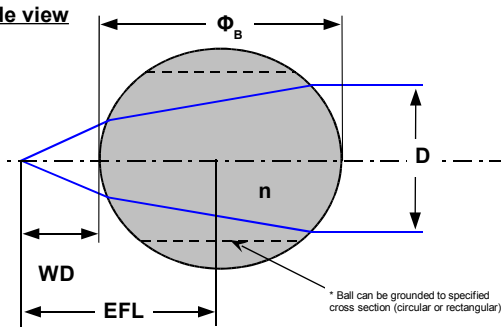
Silicon Ball Lenses

LENS DRAWING

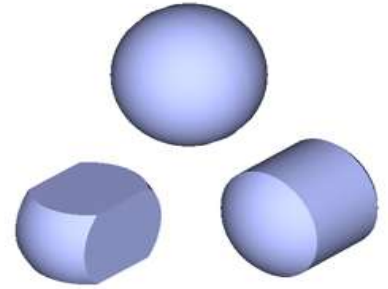
Front view



Side view



3D view



LENS DESIGN INFORMATIONS

Ball lens

Ordering Code	Dimensions ¹
	SPL_BAL_Si_Φ _B _AR(λ ₁ -λ ₂)
Material: Silicon	
to be completed	

1. All units are mm

Circular cross-section ball lens (drum lens)

Ordering Code	Dimensions ¹	
	SPL_BAL_Si_Φ _B _Φ _L _AR(λ ₁ -λ ₂)	Φ _B
Material: Silicon		
to be completed		

1. All units are mm

Rectangular cross section ball lenses

Ordering Code	Dimensions ¹		
	SPL_BAL_Si_Φ _B _H×L_AR(λ ₁ -λ ₂)	Φ _B	H
Material: Silicon			
to be completed			

1. All units are mm

Useful formulae

$$R = \Phi_B / 2$$

$$EFL = \frac{n \cdot R}{2 \cdot (n - 1)}$$

$$WD = \frac{EFL \cdot (2 - n)}{n}$$

$$D = 2 \cdot EFL \cdot NA$$

Silicon refractive index vs. λ

λ (nm)	1000	1500	2000	2500	5000
n	3.5719	3.4821	3.4526	3.4393	3.4277

Legend

EFL: Effective focal length

Φ_B: Ball diameter

Φ_L: Lens diameter

NA: Numerical aperture

R: Ball radius

n: Refractive index

WD: Working distance

H: Lens height

AR(λ₁ - λ₂): Anti-reflection coating wavelength range

D: Beam diameter

L: Lens length

