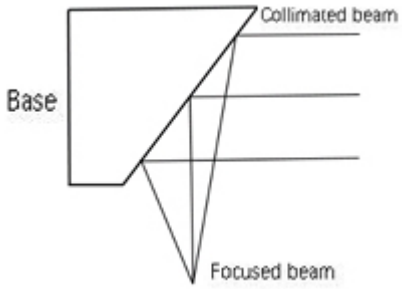
Off - axis Parabolic Mirror

Off-axis parabolic mirror (OAP) can get beam focused or collimated at certain angles, and infinite focus is possible, too. The total reflection design eliminates the absorption loss, chromatic aberration, dispersion and phase delay due to transmissive optical element. Sometimes there is a small hole at a specific point of the OAF, which enables the coaxial transmission of two beams in the space.

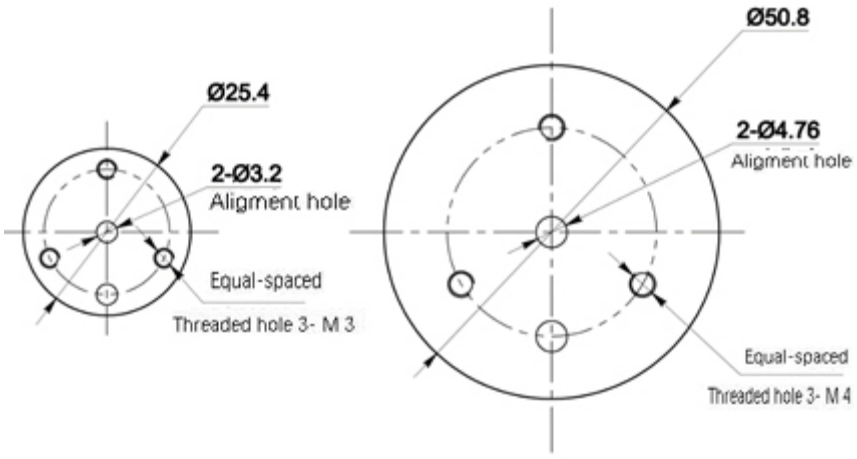
GCC-501 series OAP has an off-axis angle of 90°, meaning the focused beam is perpendicular to the collimated beam, or the transmission axis of the collimated beam is perpendicular to the base to achieve an ideal focusing effect, as shown in the following diagram:



GCC-501 series OAPs adopt high-quality aluminum with a metal reflective coating on the parabolic surface. There are three types of reflection coatings: protective gold, protective silver and UV enhanced aluminum.

- GCC-5011 series OAP, with the protective gold reflection coating, has an average reflectivity of more than 96% in the 0.65-12μm band.
- GCC-5013 series OAP, with the protective silver coating, has an average reflectivity of over 95% in the 0.45-2μm band.
- GCC-5012 series OAP, with the UV-enhanced aluminum coating, has an average reflectivity of over 85% in the 250-450μm band.

GCC-501 series OAPs are available in two sizes: Φ25.4mm and Φ50.8mm. There are three equal-spaced threaded holes and two alignment holes at the bottom for easy installation and fixation.



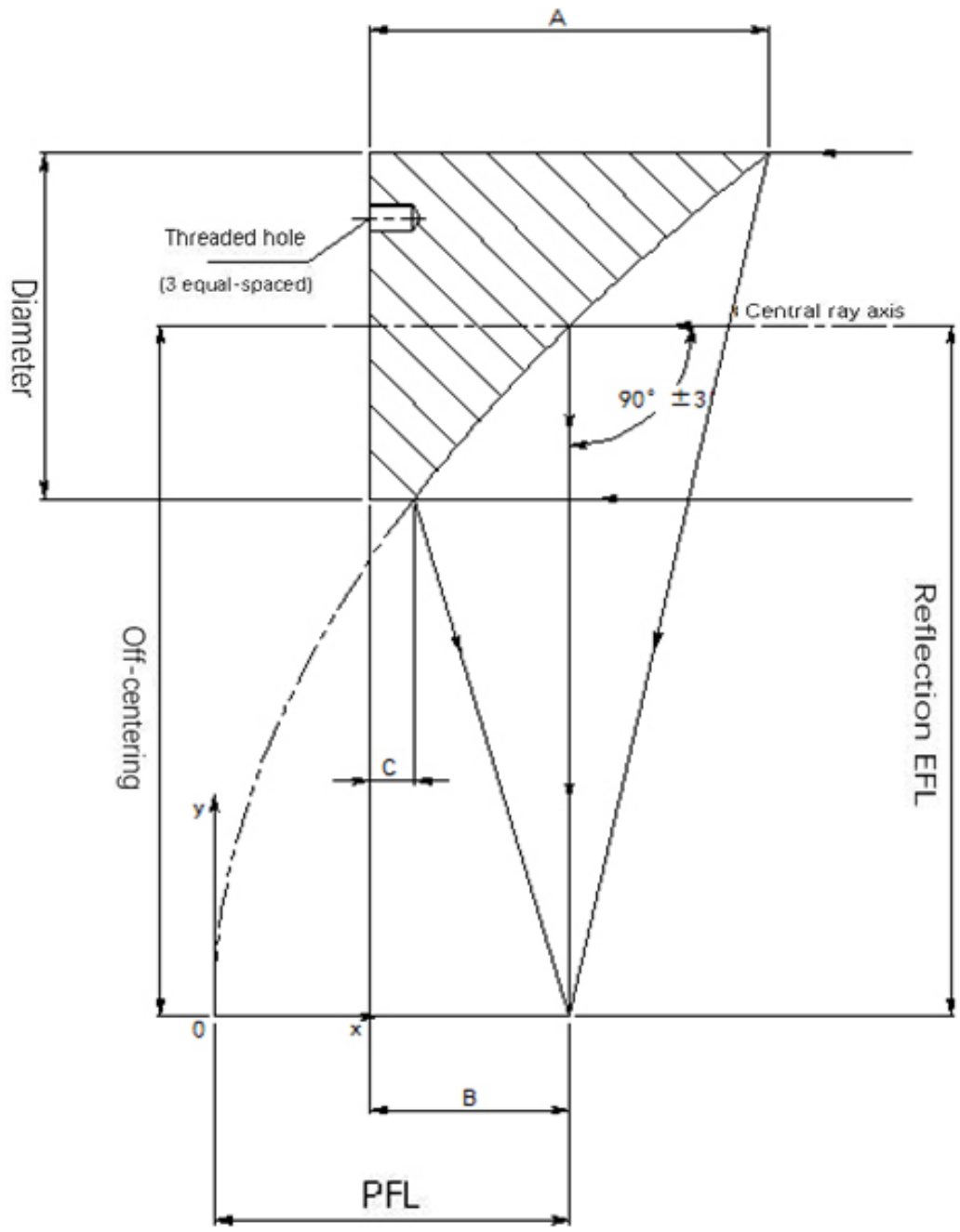
How to Choose OAPs

When choosing OAP to collimate a point light source, the output beam diameter should be considered, which is determined by the divergence angle θ of the incident light and the reflection EFL of OAP. The beam diameter is calculated according to the angle approximation in the following formula: Beam diameter = sin(θ) x reflection EFL

For output beam of optical fiber, using the following formula: Beam diameter = 2 × NA (fiber) ×reflection EFL

Note that the output beam diameter shall not exceed the clear aperture of OAP.

The following is a cross-section diagram of the OAP:



GCC-5011 series 90° OAP with protective gold coating

Model	Name	PFL	Reflected EFL	Diameter	A	B	C
GCC-501101	90° OAP	25.4	50.8	50.8	57.2	25.4	6.4
GCC-501102	90° OAP	50.8	101.6	50.8	57.2	28.5	6.4
GCC-501103	90° OAP	76.2	152.4	50.8	57.2	29.7	6.4
GCC-501104	90° OAP	12.7	25.4	25.4	38.1	15.9	6.4
GCC-501105	90° OAP	25.4	50.8	25.4	38.1	17.45	6.4
GCC-501106	90° OAP	38.1	76.2	25.4	38.1	18.05	6.4
GCC-501107	90° OAP	50.8	101.6	25.4	38.1	18.3	6.4
GCC-501111	90° OAP with hole	25.4	50.8	50.8	57.2	25.4	6.4
GCC-501112	90° OAP with hole	50.8	101.6	50.8	57.2	28.5	6.4
GCC-501113	90° OAP with hole	76.2	152.4	50.8	57.2	29.7	6.4

GCC-5012 series 90° OAP with UV-enhanced aluminum coating

Model	Name	PFL	Reflected EFL	Diameter	A	B	C
GCC-501201	90° OAP	25.4	50.8	50.8	57.2	25.4	6.4
GCC-501202	90° OAP	50.8	101.6	50.8	57.2	28.5	6.4
GCC-501203	90° OAP	76.2	152.4	50.8	57.2	29.7	6.4
GCC-501204	90° OAP	12.7	25.4	25.4	38.1	15.9	6.4
GCC-501205	90° OAP	25.4	50.8	25.4	38.1	17.45	6.4
GCC-501206	90° OAP	38.1	76.2	25.4	38.1	18.05	6.4
GCC-501207	90° OAP	50.8	101.6	25.4	38.1	18.3	6.4

GCC-5013 series 90° OAP with protective silver coating

Model	Name	PFL	Reflected EFL	Diameter	A	B	C
GCC-501301	90° OAP	25.4	50.8	50.8	57.2	25.4	6.4
GCC-501302	90° OAP	50.8	101.6	50.8	57.2	28.5	6.4
GCC-501303	90° OAP	76.2	152.4	50.8	57.2	29.7	6.4
GCC-501304	90° OAP	12.7	25.4	25.4	38.1	15.9	6.4
GCC-501305	90° OAP	25.4	50.8	25.4	38.1	17.45	6.4
GCC-501306	90° OAP	38.1	76.2	25.4	38.1	18.05	6.4
GCC-501307	90° OAP	50.8	101.6	25.4	38.1	18.3	6.4