

# Variable Optical Imaging System

## High-definition Imaging Lens Set

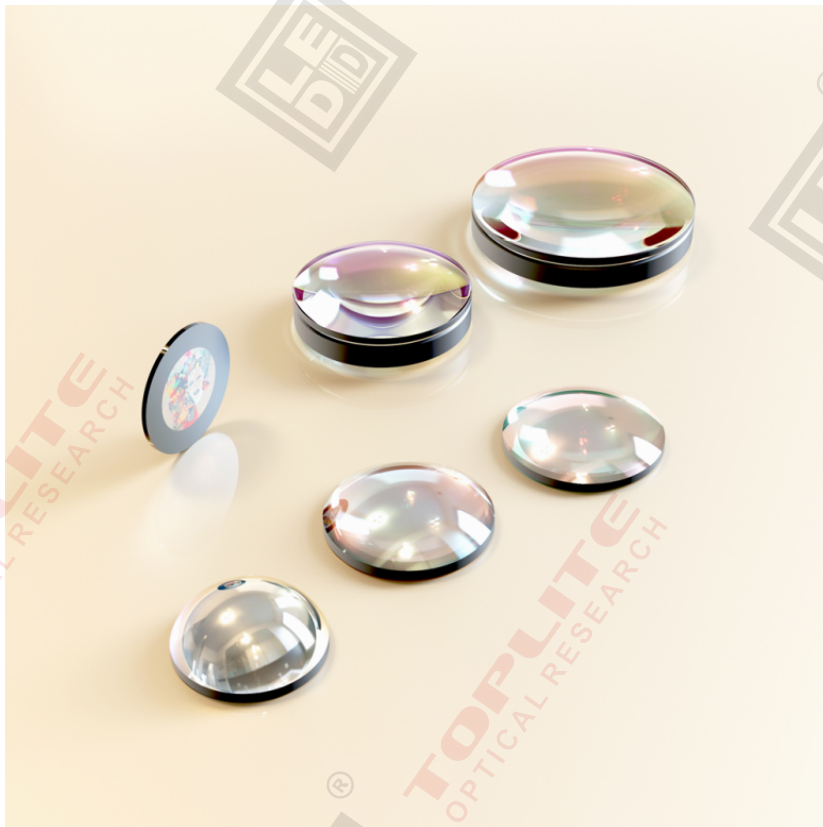
### IMM16

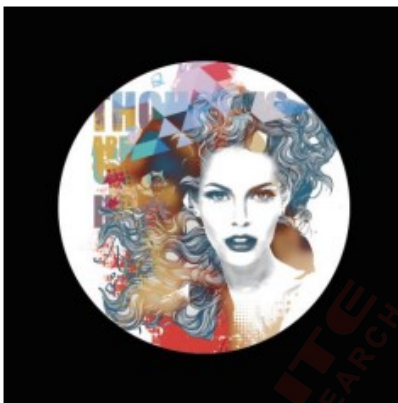
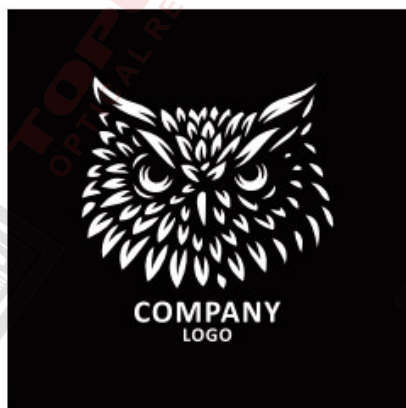
The "IMM16 Imaging Lens Set" includes six different imaging lenses with varying diameters and thicknesses, all are made of special glass materials using high-precision grinding and surface polishing processes. These lenses are coated with multiple layers of high-transmittance film and, through precise bonding, form a low-dispersion lens group with high resolution, offering high-quality imaging.

These lenses can be freely combined and, when used with specific LED light sources and condensing lens sets, can create special optical imaging systems of fixed or variable beam angles. The projected light spots exhibit high clarity, uniform, fullness, distortion less than 1%, and are free from color fringing (like blue, yellow). IMM16 imaging lens set is particularly well-suited for high-definition imaging, pattern projection, profile cutting, and other medium to low-power LED lighting applications.

Applications scope: High-definition LED imaging lights, pattern projection lights, cutting lights, profile spotlighting, and more.

Application Areas: Stage performances, cultural and tourism landscapes, film and video shooting, commercial photography, museums, art galleries, and more.





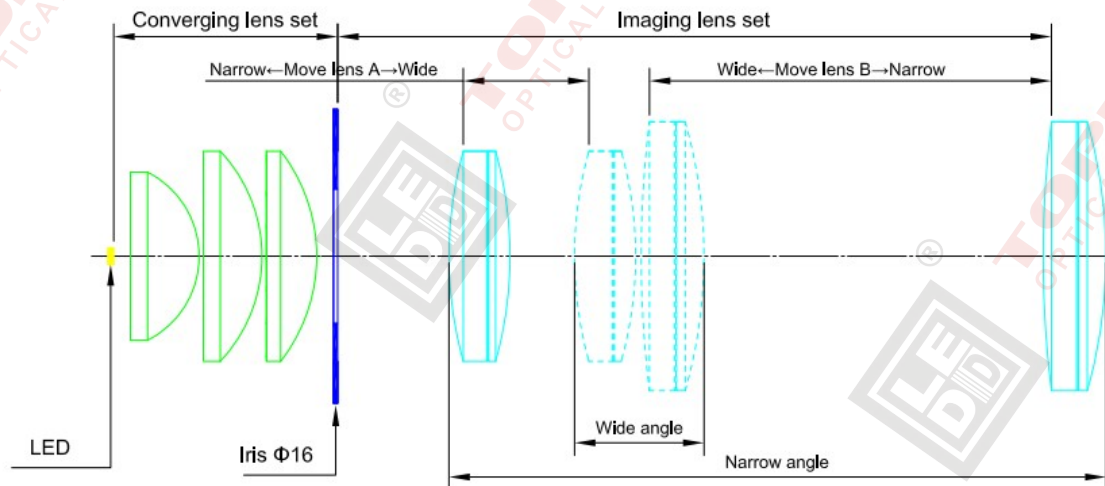
### Main Parameters:

Product Model	IMM16		
Product Type	Optical Imaging Lens Set		
LED	High integrated LED or COB, LES ≤ Φ8mm,		
Condensing Lens Set	IMMDX202525, IMMDX25X3, lens diameter: Φ20mm, Φ25mm, Used to adapt to single LED, like COB		
Gate (Effective Gobo Size)	≤Φ16mm		
Achromatic Cemented Lens	Φ22mm, Φ25mm, Φ32mm, Φ42mm, Φ50mm, Φ64mm		
Coatings	Multi-layer anti-reflection		
Angles	Fixed	5°, 8°, 10°, 14°, 15°, 16°, 19°, 20°, 24°, 25°, 26°, 27°, 28°, 30°, 36°, 38°, 40°, 44°, 45°, 50°, 55°,	Provide the schematic diagram of the light path for each angle option
	Zoom	10~20°, 13~25°, 13~27°, 14~28°, 15~30°, 15~32°, 16~26°, 17~30°, 19~37°, 21~42°, 22~36°, 22~44°, 22~45°, 23~38°, 28~50°, 30~50°, 36~50°	
Model Description	IMM16-F36, F indicates fixed focus, angle is 36°.		
	IMM16-Z1530, Z indicates zoom, zoom range is 15°~30°.		

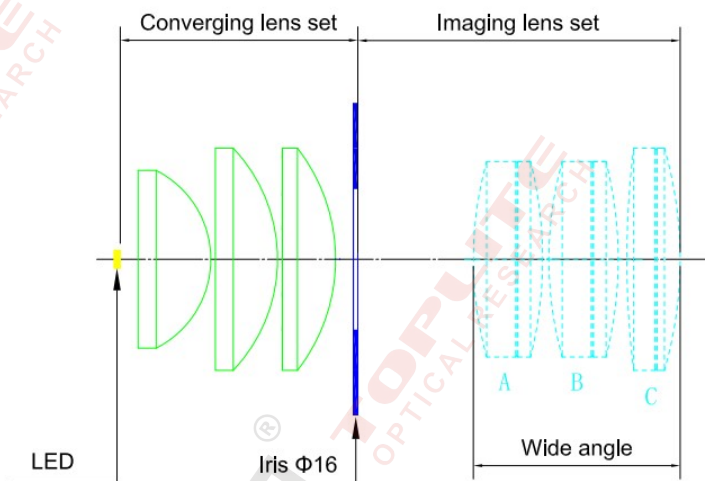
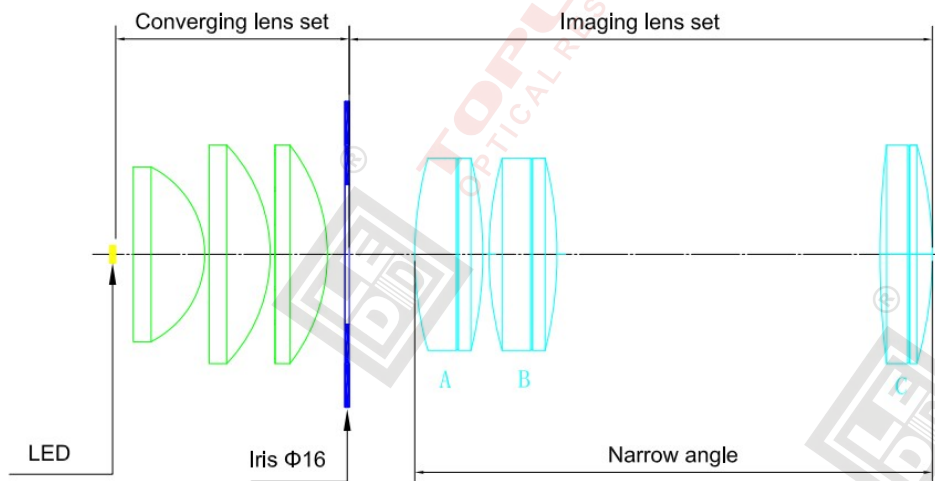
### Schematic diagram of imaging light path

There are two typical variable optical imaging system schematic diagrams are showed here. Each one consists of four parts, from left to right they are, LED, condensing lens set, gate (Gobo), and imaging lens set. The condensing lens set is composed of three plano-convex lenses, and the gate (effective gobo size) is Φ16mm.

①As shown in the following diagram, the part of imaging lens set consists of two achromatic cemented lenses. This is a zoom system, it output wide beam when two lenses are closing to each other, if the two lenses move away from each other, the output beam will be narrow-angle.



② As shown in the following diagram, the part of imaging lens set consists of three achromatic cemented lenses. We can divide these three lenses into two groups. From left to right, group 1 includes A and B, group 2 is C. This is a zoom system, it output wide beam when two lens groups are closing to each other, if the two lens groups move away from each other, the output beam will be narrow-angle.

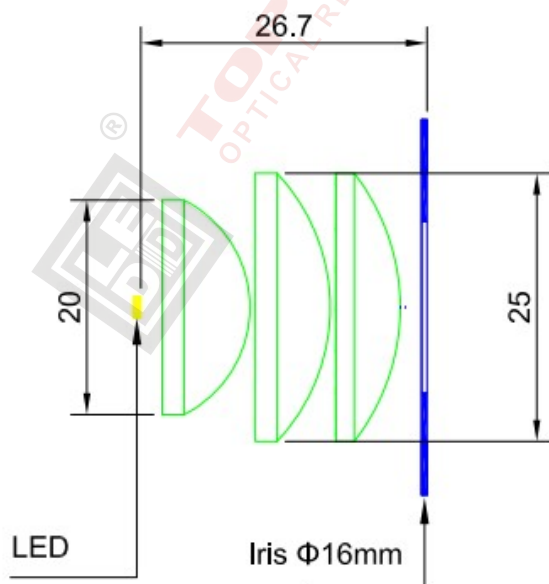


**IMM16 imaging beam angle selection list:**

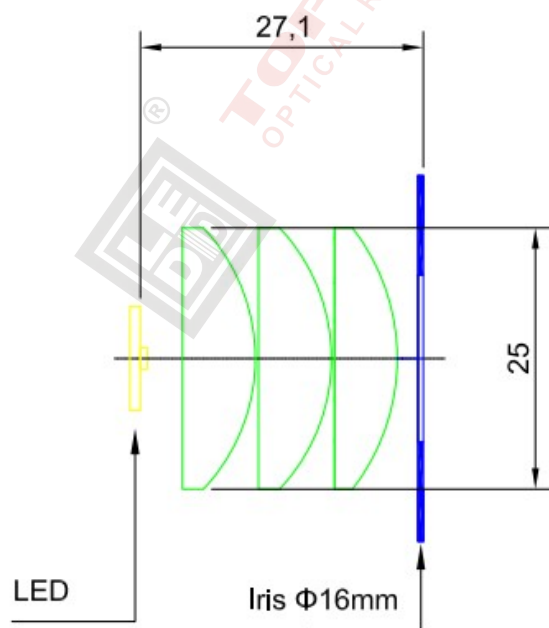
No.	IMM16 Model	Angle (°)	Imaging Lens Diameter (mm)				Light Path Length: E+F (mm)	
			A	B	C	D	Condensing (E)	Imaging (F)
1	IMM16-F5D64X2	5	Φ64	Φ64			26.7	207.8
2	IMM16-F8D50X2	8	Φ50	Φ50			26.7	150.2
3	IMM16-F10D32X2	10	Φ32	Φ32			26.7	98.4
4	IMM16-F14D32X2	14	Φ32	Φ32			26.7	88.5
5	IMM16-F15D2225	15	Φ22	Φ25			26.7	74.7
6	IMM16-F19D2225	19	Φ22	Φ25			26.7	70.3
7	IMM16-F20D2225	20	Φ22	Φ25			26.7	67.6
8	IMM16-F24D22X2	24	Φ22	Φ22			26.7	52
9	IMM16-F25D22X2	25	Φ22	Φ22			26.7	51.2
10	IMM16-F26D22X2	26	Φ22	Φ22			26.7	50.3
11	IMM16-F30D22X2	30	Φ22	Φ22			26.7	46.7
12	IMM16-F36D22X2	36	Φ22	Φ22			26.7	37.5
13	IMM16-F38D22X2	38	Φ22	Φ22			26.7	62.6
14	IMM16-F40D22X3	40	Φ22	Φ22	Φ22		26.7	45
15	IMM16-F44D22X232	44	Φ22	Φ22	Φ32		26.7	38.3
16	IMM16-F45D22X3	45	Φ22	Φ22	Φ22		26.7	41.5
17	IMM16-F50D22X225	50	Φ22	Φ22	Φ25		26.7	34.7
18	IMM16-F50D22X3	50	Φ22	Φ22	Φ22		26.7	35.8
19	IMM16-F55D22X4	55	Φ22	Φ22	Φ22	Φ22	26.7	38.2

No.	IMM16 Model	Angle (°)	Imaging Lens Diameter (mm)			Light Path Length: E+F (mm)	
			A	B	C	Condensing (E)	Imaging (F)
20	IMM16-Z1020	10 ~ 20	Φ32	Φ32			
21	IMM16-Z1325	13 ~ 25	Φ25	Φ25		26.7	77.8
22	IMM16-Z1327	13 ~ 27	Φ25	Φ32		26.7	91.7
23	IMM16-Z1428	14 ~ 28	Φ22	Φ32		26.7	90.7
24	IMM16-Z1530	15 ~ 30	Φ25	Φ25		26.7	76.3
25	IMM16-Z1532	15 ~ 32	Φ22	Φ25		26.7	75.3
26	IMM16-Z1933	19 ~ 33	Φ25	Φ25		26.7	58.5
27	IMM16-Z2236	22 ~ 36	Φ22	Φ25		26.7	56.1
28	IMM16-Z2338	23 ~ 38	Φ22	Φ22		26.7	51.9
29	IMM16-Z2142	21 ~ 42	Φ25	Φ25	Φ32	26.7	84.5
30	IMM16-Z2244	22 ~ 44	Φ22	Φ22	Φ32	26.7	78.2
31	IMM16-Z2245	22 ~ 45	Φ22	Φ22	Φ25	26.7	66.8
32	IMM16-Z2850	28 ~ 50	Φ22	Φ22	Φ25	26.7	51.7
33	IMM16-Z3050	30 ~ 50	Φ22	Φ22	Φ22	26.7	47.4
34	IMM16-Z3650	36 ~ 50	Φ22	Φ22	Φ25	26.7	46.8

In the above lists, the imaging length F is the maximum imaging length of the system which is the length at the smallest angle value within a zoom range. The condensing part uses a lens set of IMM16-Z20525. If there is another lens set used in the system for LED focusing, the corresponding E value will change, as shown in the diagrams below.



IMMDX202525



IMMDX25X3