

# Variable Optical Imaging System

## High-definition Imaging Lens Set

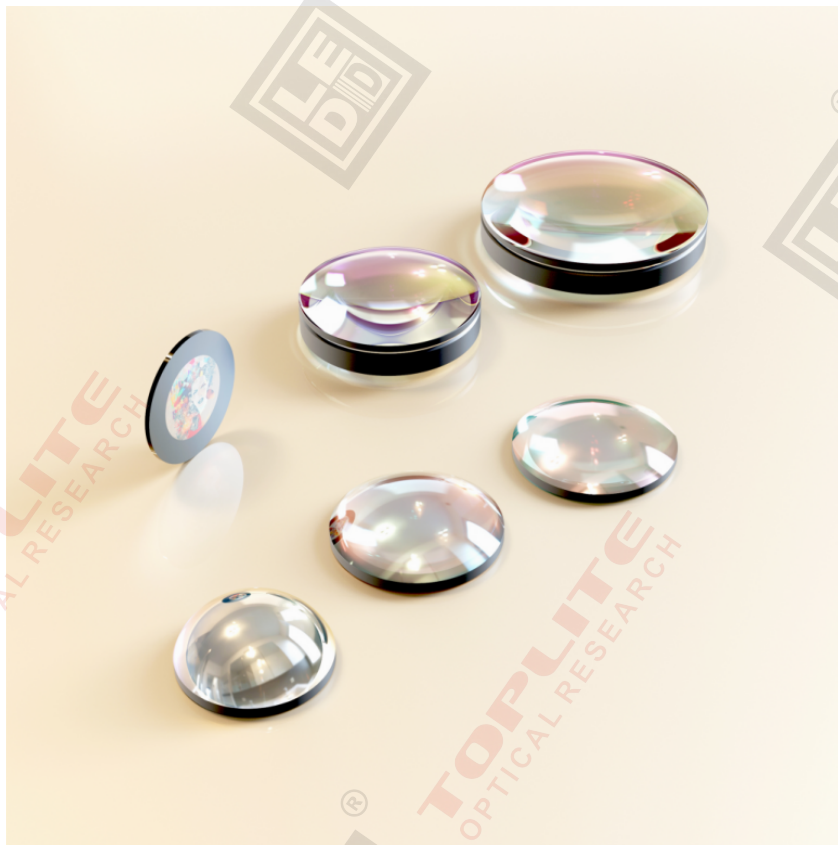
### IMM50

The "IMM50 Imaging Lens Set" includes five 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). IMM50 imaging lens set is particularly well-suited for high-definition imaging, pattern projection, profile cutting, and other medium to high-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.





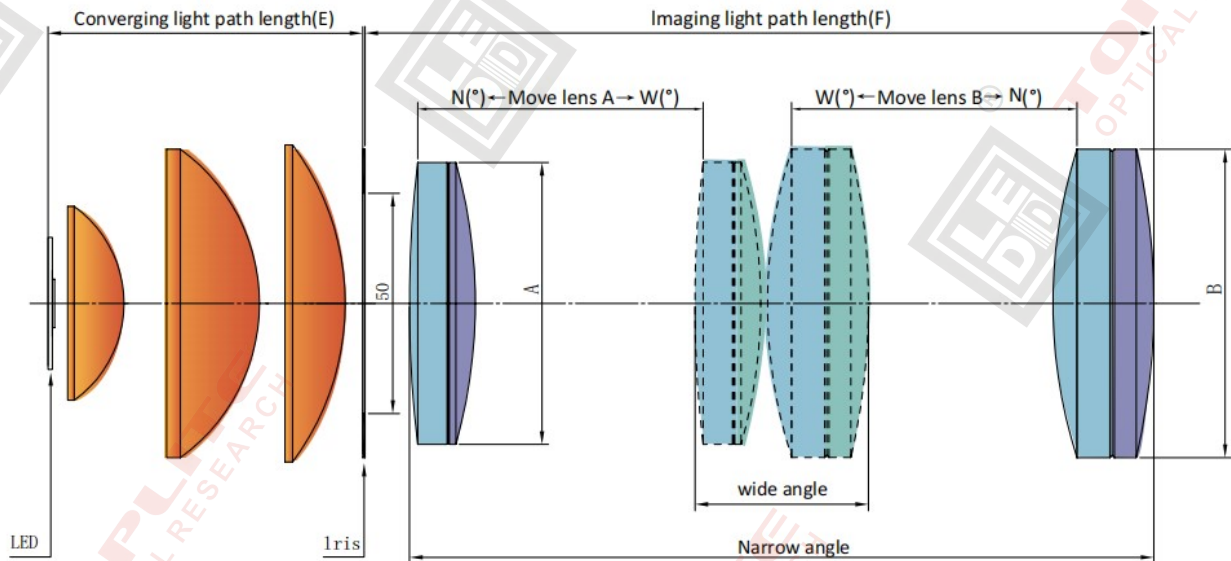
### Main Parameters:

Product Model	IMM50	
Product Type	Optical Imaging Lens Set	
LED	High integrated LED or COB, $LES \leq \Phi 22\text{mm}$ , LED matrix module, e.g. STONEHENGE, MATBEAM, MATGOBO	
Condensing Lens Set	IMMDX447072( $LES \leq \Phi 11\text{mm}$ ), IMMDX70X272( $LES \leq \Phi 22\text{mm}$ ) lens diameter: $\Phi 44\text{mm}$ , $\Phi 70\text{mm}$ , $\Phi 72\text{mm}$ Used to adapt to single LED, like COB	
Gate (Effective Gobo Size)	$\leq \Phi 50\text{mm}$	
Achromatic Cemented Lens	$\Phi 64\text{mm}$ , $\Phi 70\text{mm}$ , $\Phi 100\text{mm}$	
Coatings	Multi-layer anti-reflection	
Angles	Fixed	10°, 15°, 19°, 20°, 24°, 25°, 26°, 30°, 36°, 40°, 45°, 50°
	Zoom	10~22°, 10~27°, 12~34°, 14~25°, 14~28°, 14~30°, 14~31°, 14~41°, 15~31°, 16~31°, 16~38°, 16~41°, 16~43°, 19~44°, 19~47°, 20~34°, 20~36°, 23~48°, 25~49°, 25~50°, Provide the schematic diagram of the light path for each angle option
Model Description	IMM50-F36, F indicates fixed focus, angle is 36°.	
	IMM50-Z2036, Z indicates zoom, zoom range is 20°~36°.	

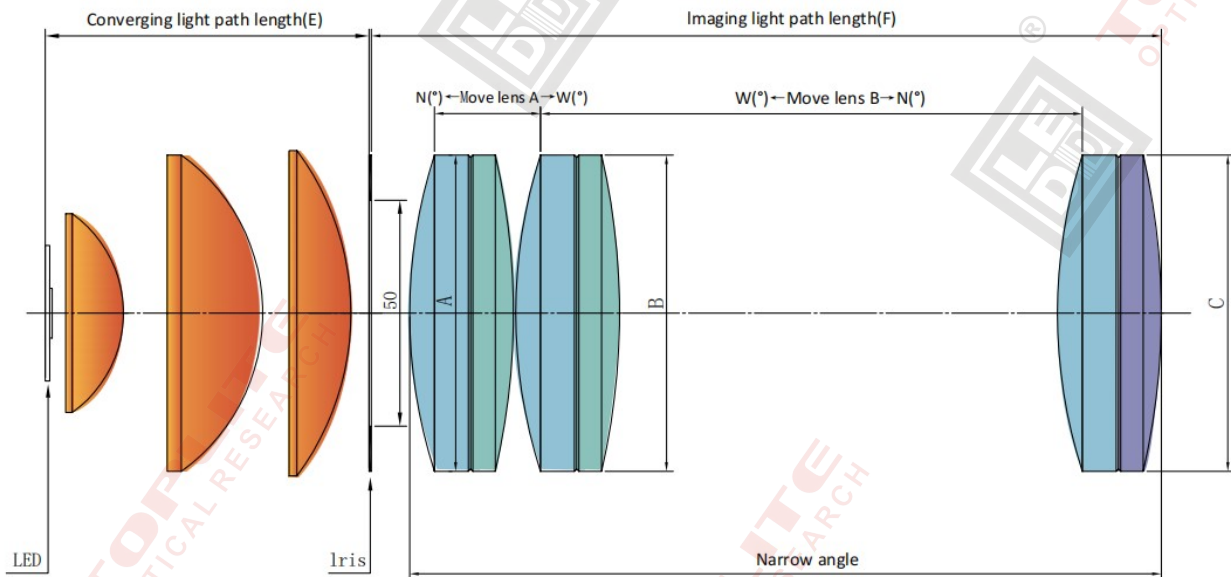
### Schematic diagram of imaging light path

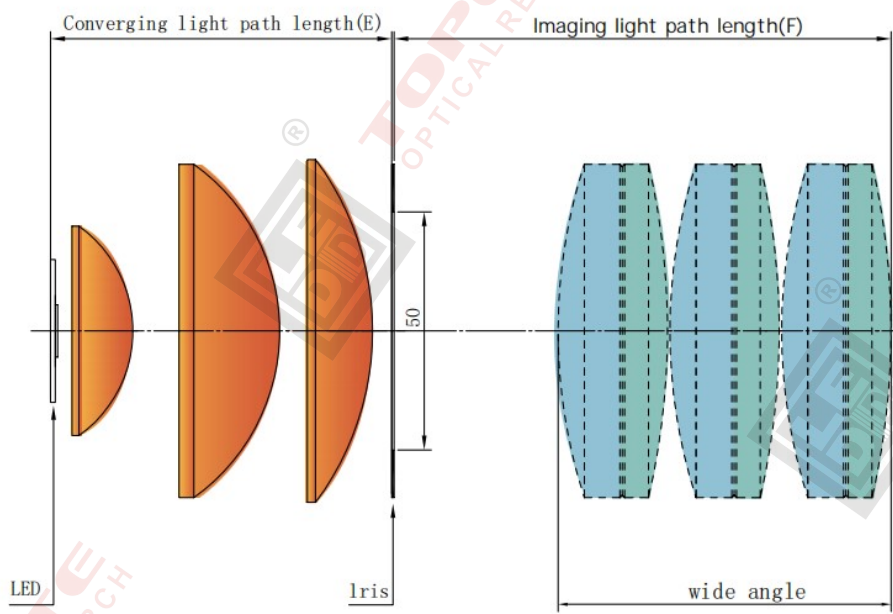
There are two typical variable optical imaging system schematic diagrams are showed here. Each one consists of four parts, from left to right they are, LED, condensing lens set, gate (Gobo), and imaging lens set. The condensing lens set is composed of three plano-convex lenses, and the gate (effective gobo size) is  $\Phi 50\text{mm}$ .

① As 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.





**IMM50 imaging beam angle selection list:**

No.	IMM50 Model	Angle (°)	Imaging lens size (mm)			Total light path length: E+F (mm)	
			A	B	C	Condensing lens set: E	Imaging lens set: F
1	IMM50-F10D10070	10	Φ70	Φ100	-	71.7	331
2	IMM50-F15D10070	15	Φ70	Φ100	-	71.7	294
3	IMM50-F19D64X2	19	Φ64	Φ64	-	71.7	192.1
4	IMM50-F19D70X2	19	Φ70	Φ70	-	71.7	199.4
5	IMM50-F19D10070	19	Φ70	Φ100	-	71.7	233.1
6	IMM50-F20D64X2	20	Φ64	Φ64	-	71.7	187.1
7	IMM50-F20D70X2	20	Φ70	Φ70	-	71.7	187.4
8	IMM50-F24D64X2	24	Φ64	Φ64	-	71.7	162.1
9	IMM50-F24D70X2	24	Φ70	Φ70	-	71.7	168.5
10	IMM50-F24D10070	24	Φ70	Φ100	-	71.7	191.1
11	IMM50-F25D64X2	25	Φ64	Φ64	-	71.7	157.1
12	IMM50-F25D70X2	25	Φ70	Φ70	-	71.7	163.5

No.	IMM50 Model	Angle (°)	Imaging lens size (mm)			Total light path length: E+F (mm)	
			A	B	C	Condensing lens set: E	Imaging lens set: F
13	IMM50-F25D10070	25	Φ70	Φ100	-	71.7	180.1
14	IMM50-F26D64X2	26	Φ64	Φ64	-	71.7	151.1
15	IMM50-F26D70X2	26	Φ70	Φ70	-	71.7	159.5
16	IMM50-F30D64X3	30	Φ64	Φ64	Φ64	71.7	164.6
17	IMM50-F30D70X2	30	Φ70	Φ70	-	71.7	142.5
18	IMM50-F30D10070	30	Φ70	Φ100	-	71.7	138.1
19	IMM50-F36D64X3	36	Φ64	Φ64	Φ64	71.7	131.6
20	IMM50-F36D70X2	36	Φ70	Φ70	-	71.7	111.5
21	IMM50-F40D64X3	40	Φ64	Φ64	Φ64	71.7	116.6
22	IMM50-F40D70X3	40	Φ70	Φ70	Φ70	71.7	135.5
23	IMM50-F45D64X3	45	Φ64	Φ64	Φ64	71.7	94.1
24	IMM50-F45D70X3	45	Φ70	Φ70	Φ70	71.7	118.5
25	IMM50-F50D70X3	50	Φ70	Φ70	Φ70	71.7	105.5
26	IMM50-Z1022	10~22	Φ70	Φ100	-	71.7	333
27	IMM50-Z1027	10~27	Φ70	Φ100	-	71.7	330
28	IMM50-Z1234	12~34	Φ70	Φ70	Φ100	71.7	331
29	IMM50-Z1425	14~25	Φ70	Φ100	-	71.7	252.4
30	IMM50-Z1428	14~28	Φ70	Φ70	-	71.7	229.4
31	IMM50-Z1430	14~30	Φ64	Φ70	-	71.7	230.5
32	IMM50-Z1431	14~31	Φ70	Φ100	-	71.7	255.4
33	IMM50-Z1441	14~41	Φ70	Φ70	Φ100	71.7	326.5
34	IMM50-Z1531	15~31	Φ70	Φ70	-	71.7	228.3

No.	IMM50 Model	Angle (°)	Imaging lens size (mm)			Total light path length: E+F (mm)	
			A	B	C	Condensing lens set: E	Imaging lens set: F
35	IMM50-Z1631	16~31	Φ64	Φ64	-	71.7	205.1
36	IMM50-Z1638	16~38	Φ70	Φ70	Φ100	71.7	250.4
37	IMM50-Z1641	16~41	Φ70	Φ70	Φ70	71.7	227.4
38	IMM50-Z1643	16~43	Φ64	Φ64	Φ70	71.7	233.5
39	IMM50-Z1944	19~44	Φ70	Φ70	Φ100	71.7	247.9
40	IMM50-Z1947	19~47	Φ70	Φ70	Φ70	71.7	226.8
41	IMM50-Z2034	20~34	Φ64	Φ70	-	71.7	179.7
42	IMM50-Z2036	20~36	Φ70	Φ70	-	71.7	177.5
43	IMM50-Z2348	23~48	Φ64	Φ64	Φ70	71.7	186.2
44	IMM50-Z2549	25~49	Φ64	Φ64	Φ64	71.7	160.7
45	IMM50-Z2550	25~50	Φ70	Φ70	Φ70	71.7	175

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 IMM50447072. If there is another lens set used in the system for LED focusing, the corresponding E value will change, as shown in the diagram below.

