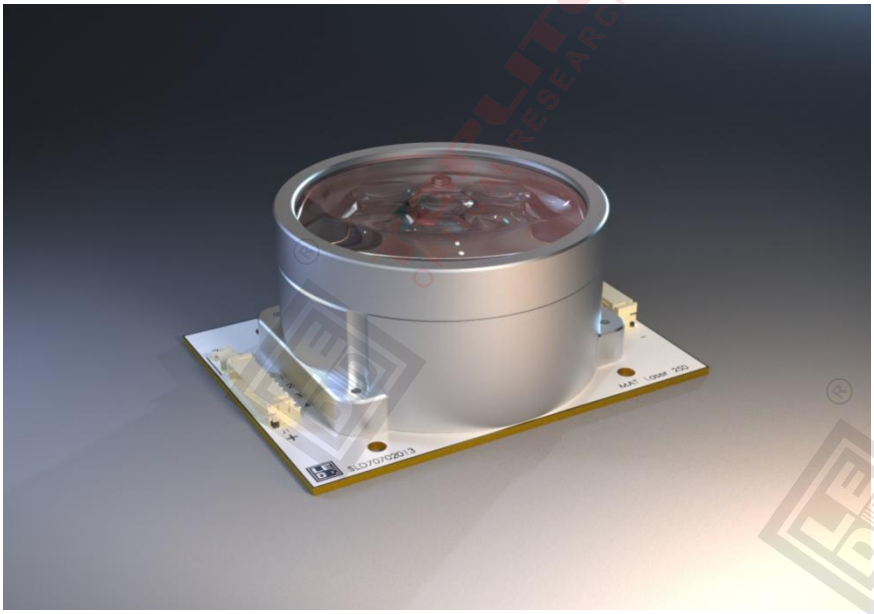
Optical Fly-eye Lens Matrix Module

MATLASER400

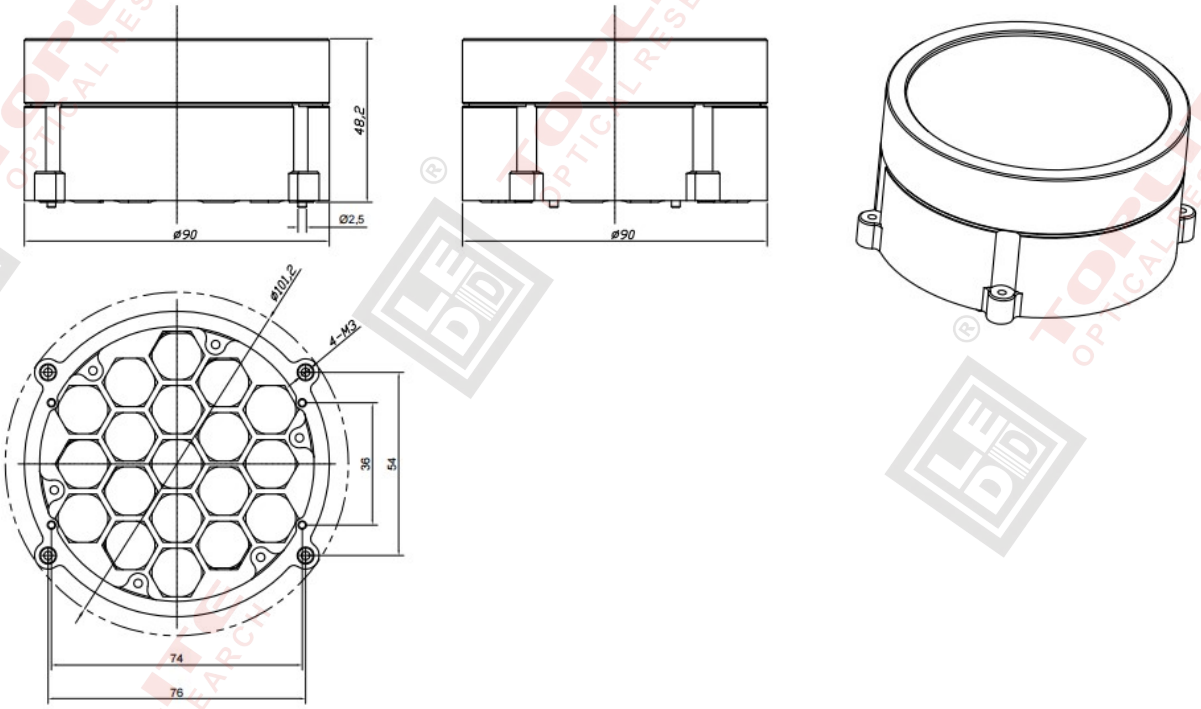
The MATLASER400 Laser Matrix Modules feature a groundbreaking condenser optics design, utilizing a patented multi-layer optical fly-eye lens matrix, which focuses the rays from the laser matrix into a very small area in space, offering high luminous density and brightness. The laser matrix supports the usage of 19 high-power laser chips. Through a simple way of installation, the condenser optics of the MATLASER400 can be quickly assembled with the corresponding laser matrix to form a laser matrix module that is high-power and equipped with dust protection. This module boasts ease of use, maintenance, upgradability and excellent performance (up to 33X of the zoom range and 26 million cd of the luminous intensity).

The MATLASER400 Laser Matrix Module is ideal for a wide range of lighting applications, including beam lights, outdoor searchlights, moving head lights, and other speciality lighting needs.



Product Features:

- Module No.: MATLASER400
- Laser Matrix: LaserLight SMD1000 × 19
- Total Power: 380 W
- Luminous Flux: Up to 19,000 lm
- Light Emission Size: Φ78 mm
- Iris/Gate: Φ4.0 mm
- Converging Lens Module Size: L90mm× Φ101.2mm × H48.2mm



Photoelectric Parameter and Test:

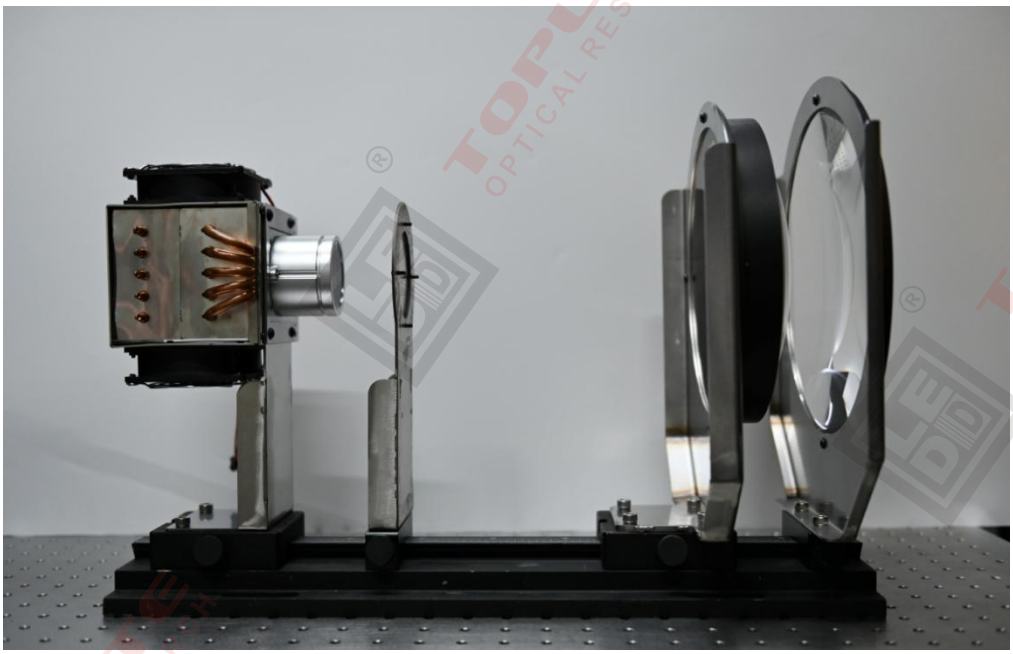


Fig3, Laser beam illumination test light path

There are 3 main parts in this set of test prototype above, from left to right they are: MATLASER400 module mounted on one heat sink, iris with diameter of Φ4.0 mm and the IMMBEAM lens set.

Test I:

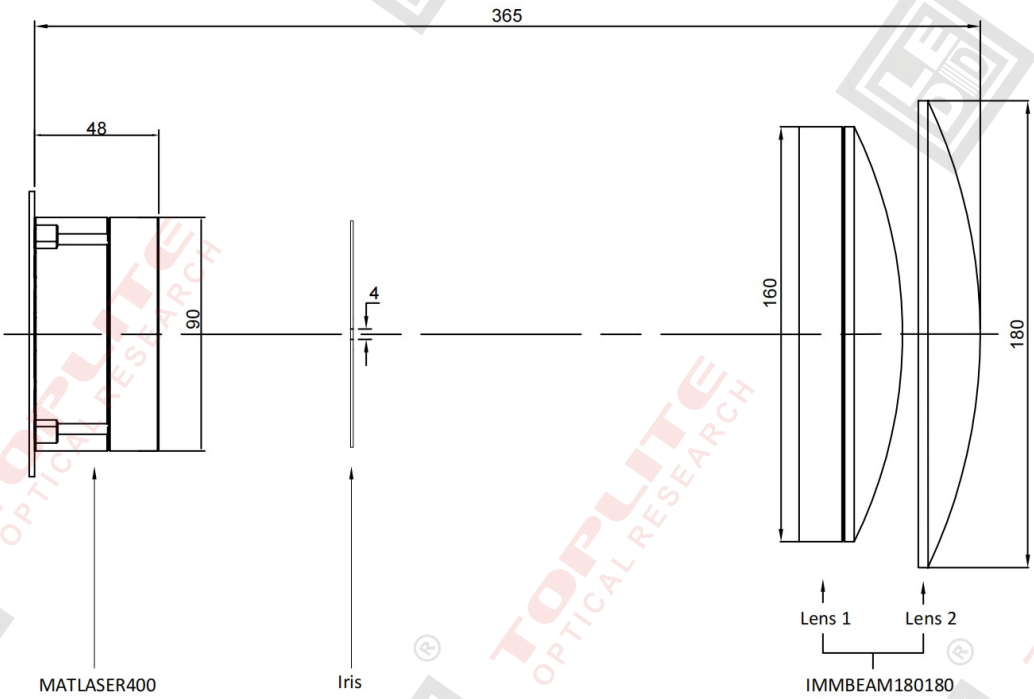
- Light Collimating Lens System: IMMBEAM180180
- PCBA: SLD70701007
- Iris: Φ4.0 mm
- Minimum Beam Angle: 1.1°
- Luminous Intensity: up to 16 million cd
- Operation A:

  Only move lens 1 to adjust beam angle and sharpness of light spot at different throw distances. When the light spot is very sharp at one given distance, it means that the output reaches its peak. Lens 1 can be moved within 15 mm. Move lens 1 towards to lens 2 can obtain narrow beam angle, towards to the iris can obtain wide beam angle with the maximum is 15°. If a soft light spot is needed at wide beam angle, it is allowed to add one piece of glass diffuser on the right of iris, then the wide beam angle can be up to 18°, the whole lighting system has 16X zoom capacity from 1.1° to 18°.

- Operation B:

  Move lens 1 and lens 2 to adjust beam angle and sharpness of the light spot. When the lens set is close to iris lighting system is wide beam angle, the maximum can be 30°, obtain up to 27X zoom capacity from 1.1° to 30°.

- Light Path Diagram of Test I:



Test II:

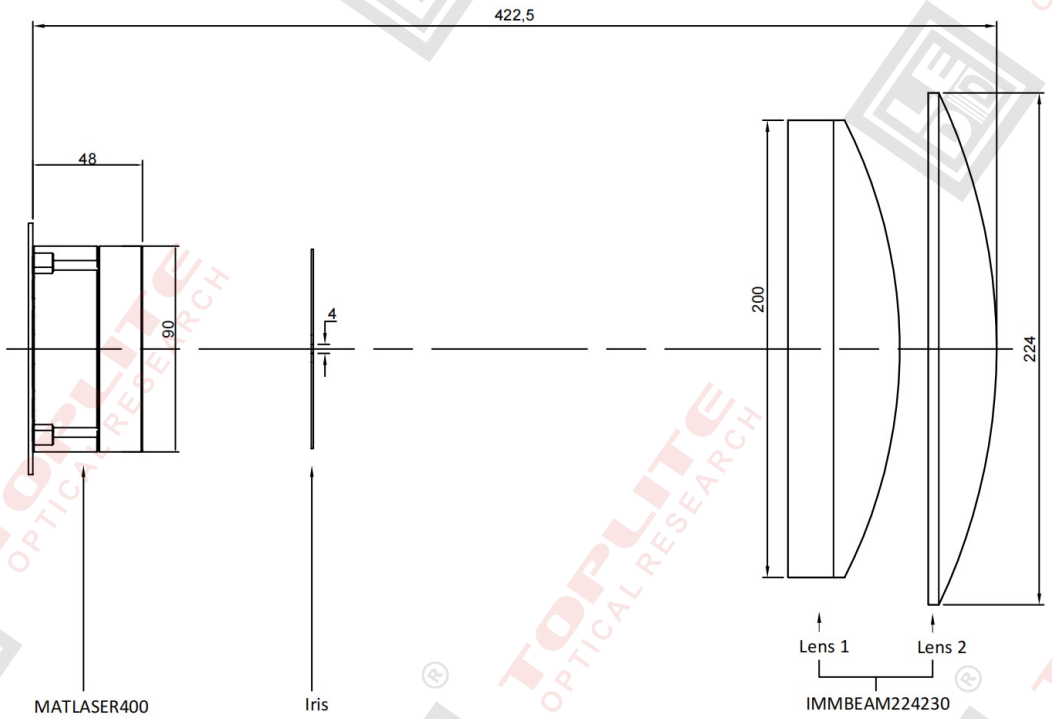
- Light Collimating Lens System: IMMBEAM224230
- PCBA: SLD70701007
- Iris: Φ4.0 mm
- Minimum Beam Angle: 0.9°
- Luminous Intensity: up to 26 million cd
- Operation A:

  Only move lens 1 to adjust beam angle and sharpness of light spot at different throw distances. When the light spot is very sharp at one given distance, it means that the output reaches its peak. Lens 1 can be moved within 15 mm. Move lens 1 towards to lens 2 can obtain narrow beam angle, towards to the iris can obtain wide beam angle with the maximum is 15°. If a soft light spot is needed at wide beam angle, it is allowed to add one piece of glass diffuser on the right of iris, then the wide beam angle can be up to 18°, the whole lighting system has 20X zoom capacity from 0.9° to 18°.

- Operation B:

  Move lens 1 and lens 2 to adjust beam angle and sharpness of the light spot. When the lens set is close to iris lighting system is wide beam angle, the maximum can be 30°, obtain up to 33X zoom capacity from 0.9° to 30°.

- Light Path Diagram of Test II:



The glass diffuser, around ϕ40mm, is allowed to be added on the right of iris in the light path to have wider angle, more uniform and soft light spot. The space between iris and glass diffuser is 0~32mm, in this space move glass diffuser to how soft the light spot is. Please keep a space, minimum 3~5mm, between lens and glass diffuser while moving lens towards to iris.

Cautions:

Since it is so bright during testing, DO NOT look directly at the rays, focus point and beam by naked eyes. Please be sure to take relevant protective measures before starting the test.