

D E C E N T L I G H T I N G S O L U T I O N S

MEMSLUX

Decent Lighting Solutions

MEMS LUX



대전광역시 유성구 문지로 193 행정동 A606호 (문지동, 카이스트문지캠퍼스)
A606, 193, Munji-ro, Yuseong-gu, Daejeon, 34051, Republic of Korea
Tel: +82-42-867-0504 Fax: +82 -505-850-0504 Email: info@memslux.com

Decent Lighting Solutions

MEMS LUX

MEMSLUX

DECENT
LIGHTING
SOLUTIONS
FOR
OUR LIFE

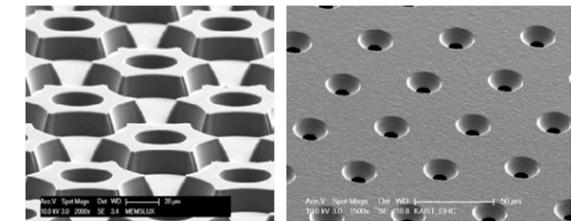
Decent Lighting
Solutions



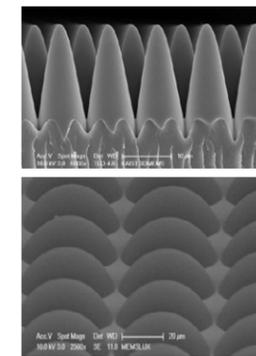
COMPANY BY MEMSLUX

Founded in May 2017, MEMSLUX is a technology startup company that is developing the world's first and world's best ultra-precision optical components such as microlens array (MLA) and magic lighting sheet (for front/back lights). Handed over from 3D Micro-Nano Structures Laboratory in Korea Advanced Institute of Science and Technology (KAIST), we have been making unique 3D microstructures for more than 15 years using proprietary 3D diffuser lithography and many other original techniques. These 3D microstructures play an essential role of enabling unprecedented performance in many optical components. Based on the 3D microstructure manufacturing technologies, our business area includes MLAs, machine vision lighting plates, automotive lightings and front light unit products. We will be growing up as a strong company that is trusted by customers and helps society through our core technologies.

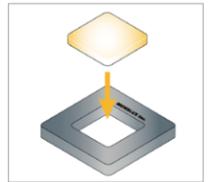
MEMSLUX Items



3D Microstructure Manufacturing



MLA(Micro Lens Array)



Machine Vision Lighting Plate
(Flat Dome Light)



Automotive Lighting



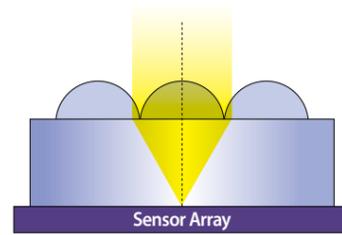
FLU(Front Light Unit) Products



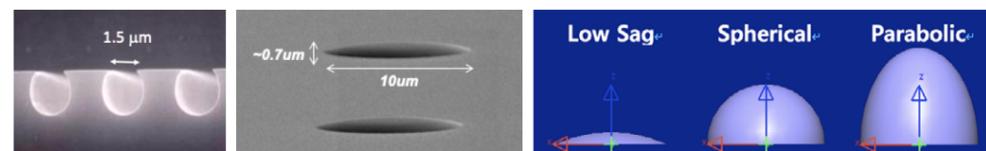
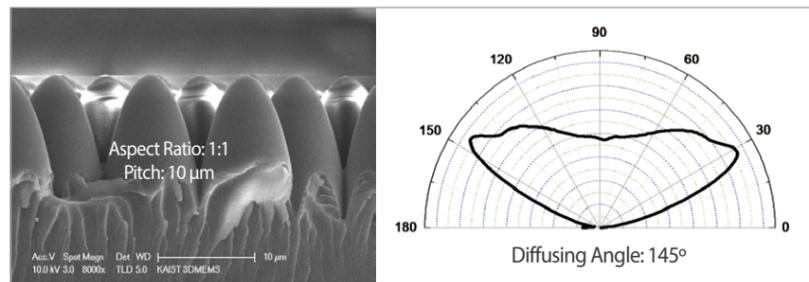
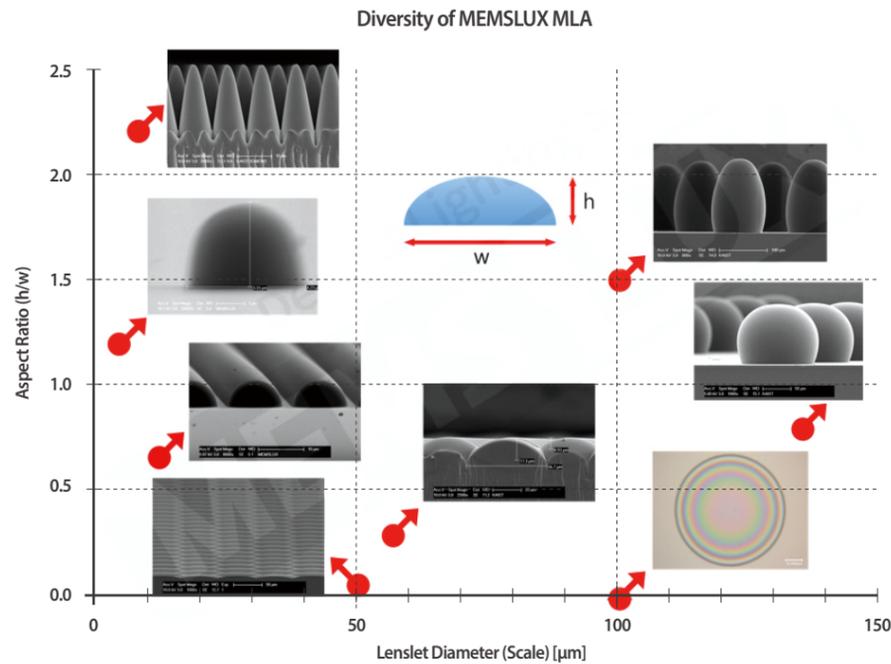
MLA(MICROLENS ARRAY)

MEMSLUX MLA

We provide various kinds of customized MLAs using not only our proprietary 3D Diffuser Lithography but also many other techniques. We have been working on the MLA field for more than 15 years. Now, many customers contact us because no other companies can provide specialized MLAs that they request.

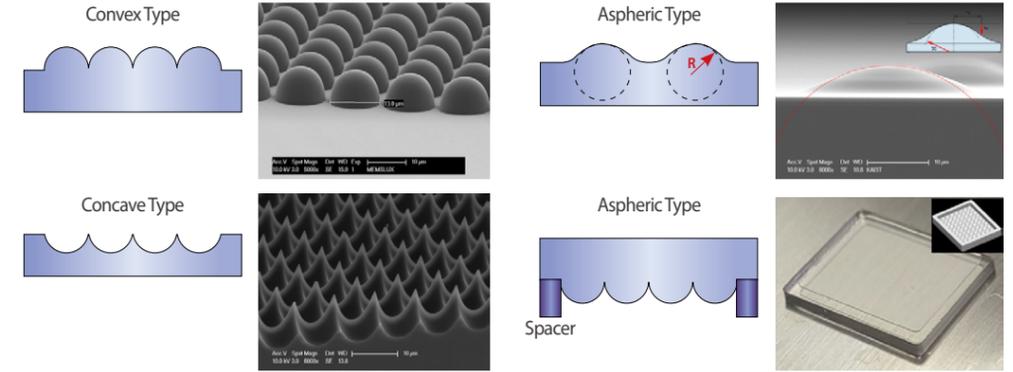


Various Features of the MEMSLUX MLA

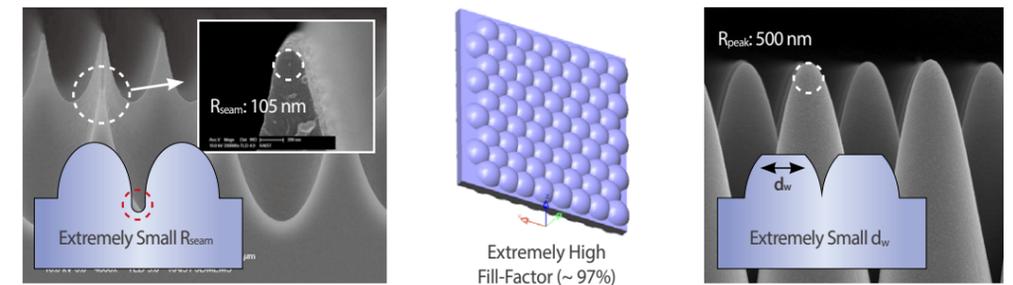


MLA(MICROLENS ARRAY)

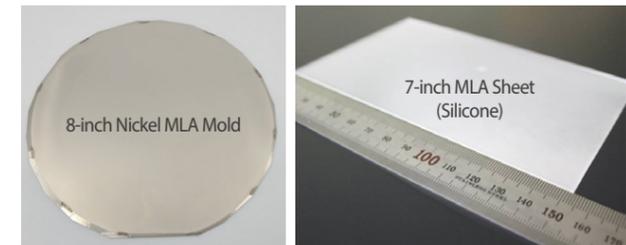
Types of the MEMSLUX MLA



Specialty of the MEMSLUX MLA

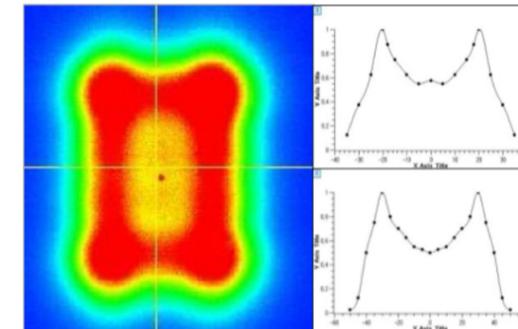


MEMSLUX MLA Products

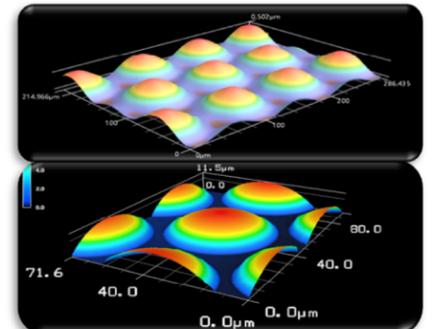


We can also provide UV resin MLA on a glass substrate upon your request.

MEMSLUX Engineered Diffuser



3D Profile Images



Let us know your MLA specification!



MAGIC LIGHTING SHEET BY MEMSLUX

What is "Magic Lighting Sheet?"

MEMSLUX Magic Lighting Sheet looks really MAGICAL; Normally, it is transparent at both sides. When (edge) light is on, light is coming out of the sheet at only one side. If you look at the sheet on the lighting side, you will see light, not the object behind the sheet. Whereas, if you look at the sheet on the opposite side, you will see object behind the sheet very brightly, illuminated by the magic lighting sheet. This is done by the unique 3D microstructures residing in one side of the magic lighting sheet.



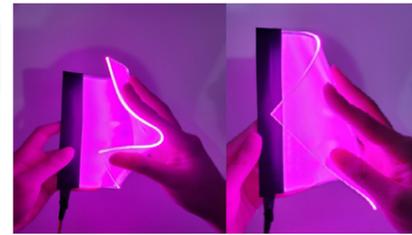
One-side
Emission



Back Front



Flexible



Patterning



LED On LED Off

LED On LED Off

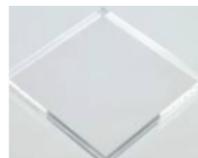
LED On LED Off

Available Materials

MEMSLUX Magic Lighting Sheet is available with transparent optical materials such as silicone, acryl, PC and glass in forms of plate, sheet and film.



Glass



Plastic Plate/Sheet



Plastic Film

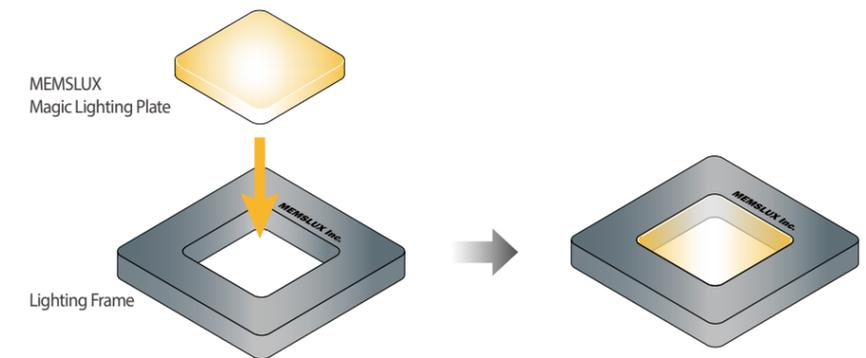


Flexible Material (Silicone etc)

MACHINE VISION LIGHTING PLATE

Machine Vision Lighting

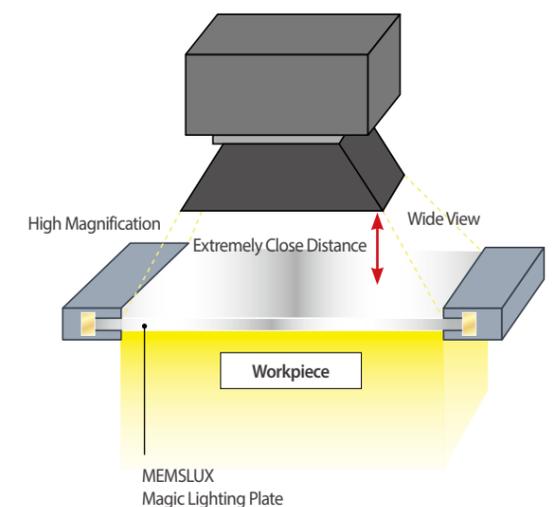
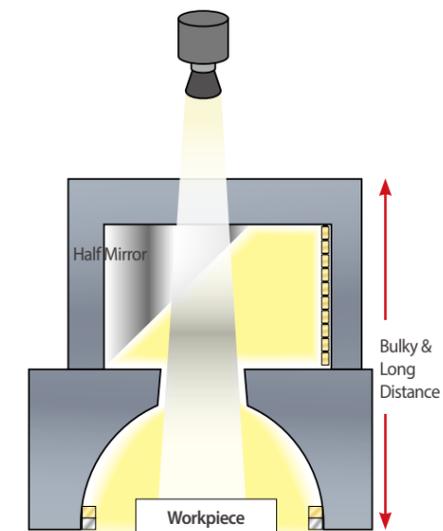
Products produced in the factory are automatically inspected for detecting whether there are defective parts through the Machine Vision System, and the Machine Vision Lighting is preferably used to enhance the image/video quality. Machine Vision Lighting needs to be placed right under the camera and this is why the Machine Vision Lighting should be transparent and emits unidirectional light. It can illuminate the product uniformly without blocking the camera's field of view. In this sense, MEMSLUX Machine Vision Lighting (Flat Dome Light) will give you better picture quality, high magnification and wide view during machine vision inspection.



Conventional Machine Vision Lighting

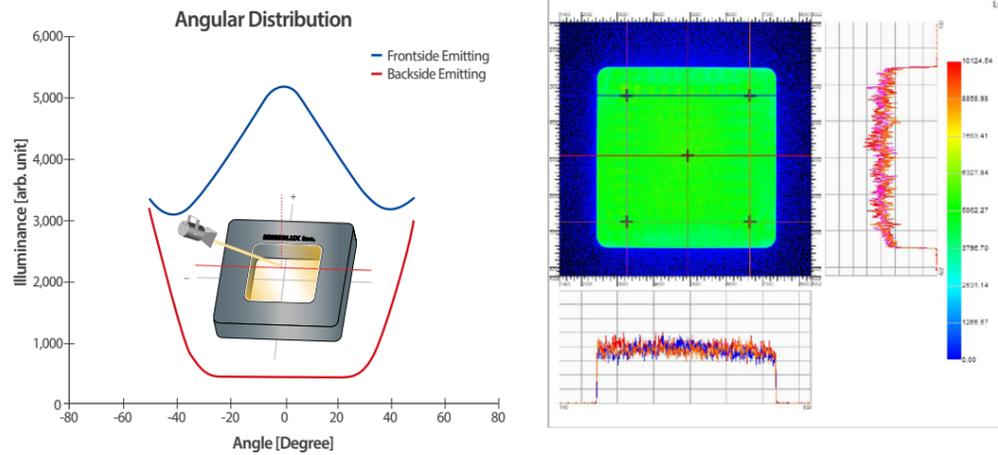
VS

MEMSLUX Machine Vision Lighting



MACHINE VISION LIGHTING PLATE

Optical Properties



- Adjustable Angular Distribution
- Unidirectional Light

$$\frac{\text{Backside}}{\text{Frontside}} \times 100 \approx 8\%$$

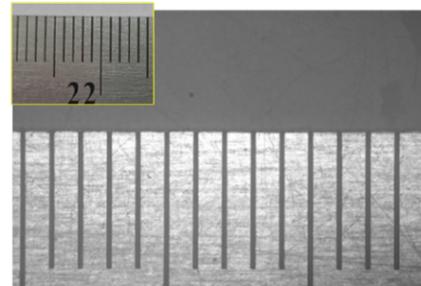
- Excellent Uniformity
- ↓
- ≈ 90%

Specification

MEMSLUX Machine Vision Lighting Plate can be made up to silicone, plastic and glass. The lighting color can be all colors including white, green, red, and blue.

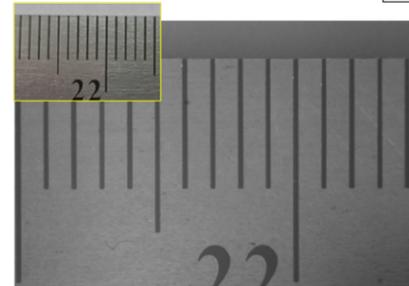
Machine Vision Demonstration Images

Other Company's Flat Dome Light



Surface texture can be seen and might disturb accurate imaging

MEMSLUX Flat Dome Light



Surface texture is no longer visible, making it possible to read the printed text more clearly

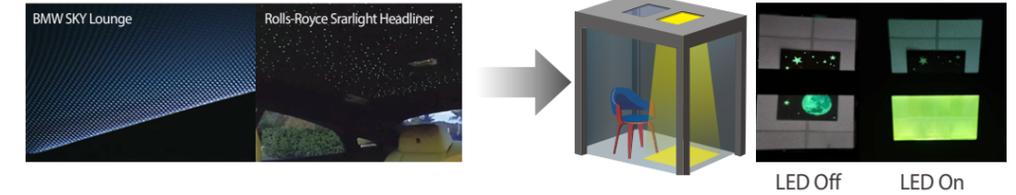
Workpiece: Ruler



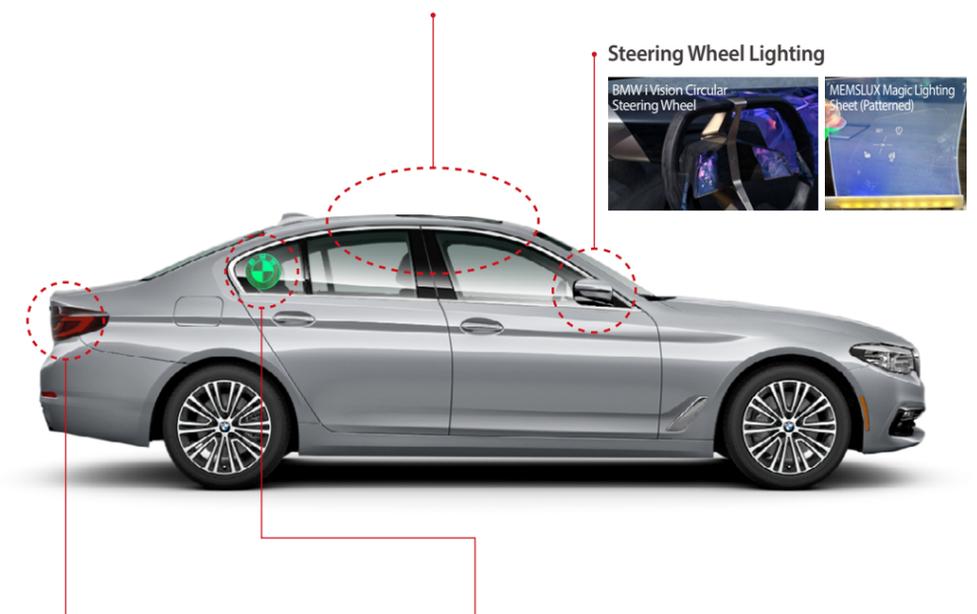
AUTOMOTIVE LIGHTING BY MEMSLUX

Automotive Interior Lighting: Ambient Lighting

Sunroof Lighting Glass



- Using flexible optical material, we provide a slim, flexible lighting sheet
- Silicone is very durable which can be operable from -70°C ~ 250 °C



Steering Wheel Lighting

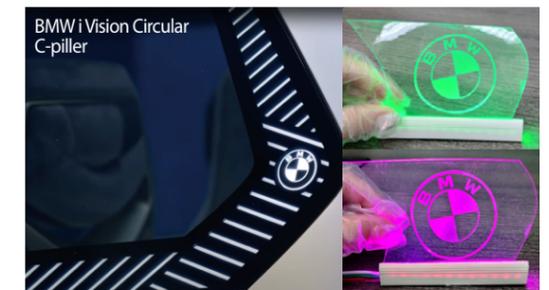


Automotive Exterior Lighting



- Slim & Lightweight
- Less than 1 mm-thick flexible LGP enables significant reduction in part size & volume
- LED layout and design can be very simplified

Logo & Ambient Lighting



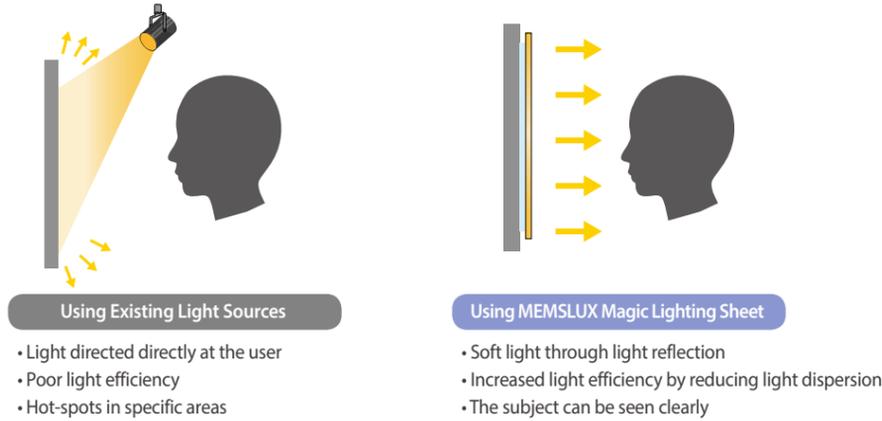
- A small space on the side glass of a car can be actively utilized.
- Various patterned sheets can be attached to this area.
- It can emphasize the identity of the brand.
- The color and brightness can be changed according to the driver's preference.



FLU PRODUCTS BY MEMSLUX

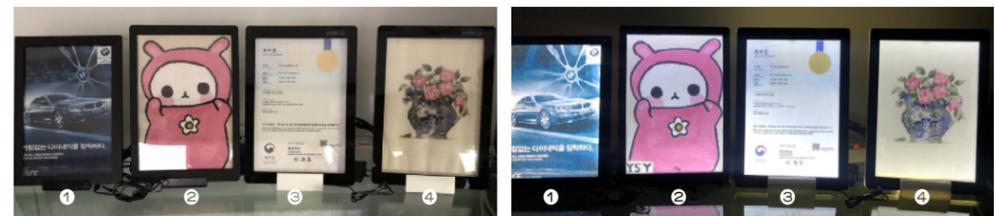
FLU (Front Light Unit)

Opposite to the conventional backlight, MEMSLUX transparent Magic Lighting Sheet can be placed on the FRONT side of the object to brighten the object.



- Since the conventional lighting frame uses a backlight, the object had to be a transmissive film, so photos, certificates, patents, ordinary prints, textiles, oil paintings, etc. could not be used in the lighting frame.
- On the other hand, MEMSLUX Magic Lighting Sheet has the advantage of being able to illuminate the object from the front side, a transmissive film will no longer be necessary, instead, original photos or paintings can be used and illuminated.

Lighting Frames



1 A4 Size Paper(Conventional Backlight Type Lighting Frame) 2 Cloth 3 Certificate of a Patent 4 Cross-stitch

Conventional Booklight



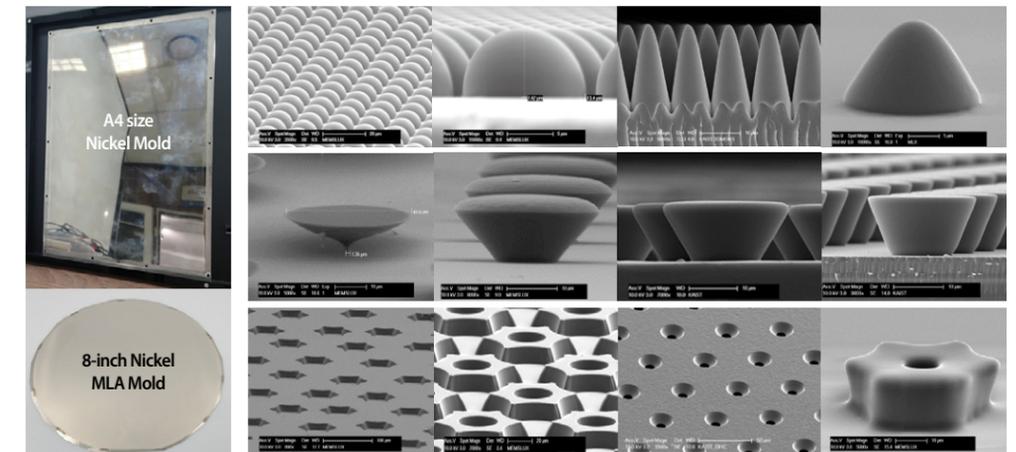
MEMSLUX Booklight



TECHNOLOGY BY MEMSLUX

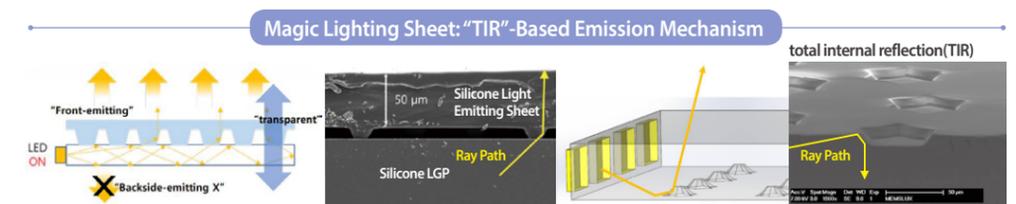
MEMSLUX Core Technology

Founded in May 2017, MEMSLUX is a technology startup company that is developing the world's first and world's best ultra-precision optical micropatterns out of polymer and metal. We make various 3D micropatterns using our proprietary techniques and many other methods. Those 3D micropatterns are very unique and effective for making particular and superior optical properties.



TIR-Based Emission Mechanism

MEMSLUX Magic Lighting Sheet enables total internal reflection(TIR) light emission mechanism by using a high-precision light emission pattern in various shapes, allowing light to be emitted in only one direction.



Cleanroom Facilities



• Semiconductor-grade Clean Room (KAIST Fab)