

LITE-ON TECHNOLOGY CORPORATION

A World-Class Company Striving for Excellence

LED Display Introduction

Display LOB










LED Display Product

Providing Variety Display

- ✓ Through Hole / SMD type
- ✓ Digits size (0.28"~1.0")
- ✓ Reflector Dimension
- ✓ Appearance Color
- ✓ LED Color

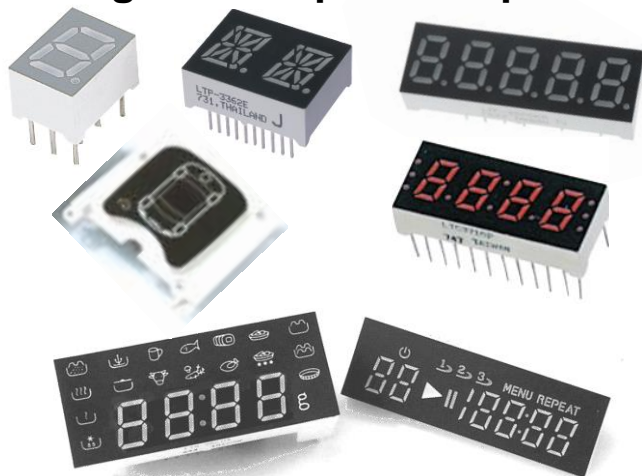
Color

λ_d (nm)

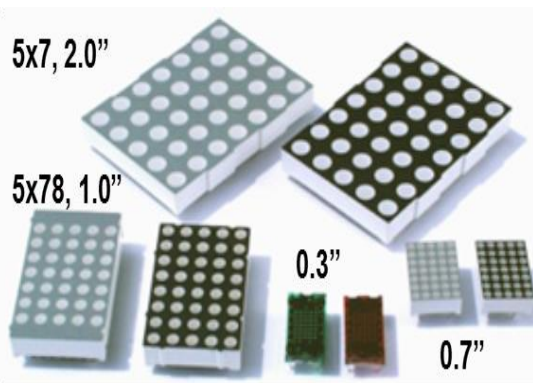
	Hyper Red	639
	Super Red	631
	Orange	605
	Yellow	587
	Yellow Green	572
	Blue	470
	White	-

Through Hole Display

7 segment / Alpha / Graphic

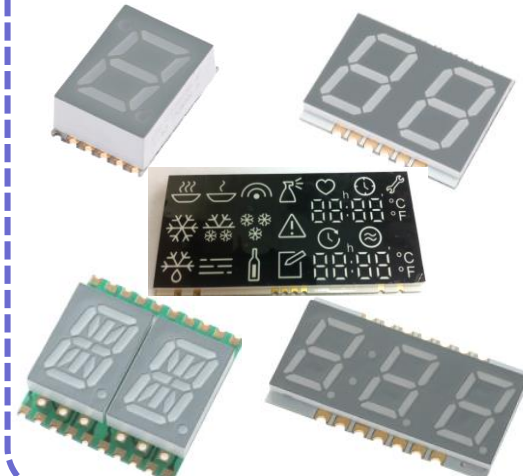


Dot Matrix



SMD Display

3.75T / 2.1T / 1.6T

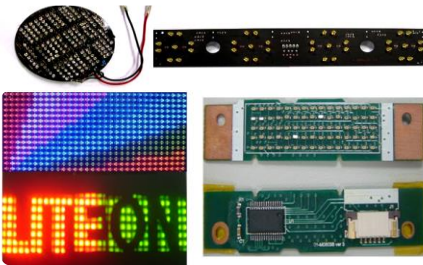


LED Display Module Solution

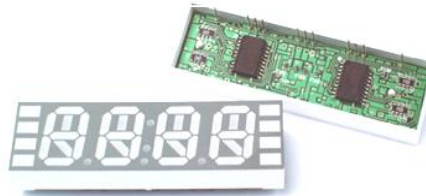
Core Capability in Module Design Solution

- ✓ Circuit and Mechanical Design
- ✓ Combine with Capacitor Sensor
- ✓ IC control
- ✓ Assembly Electric Component
- ✓ Specialized Optical Team
- ✓ Professional Optical Simulation

PCB Assembly Module



IC driver Module



Backlight Module



Touch Film Solution



Special Lighting

Agriculture Lighting



Refrigerator Lighting

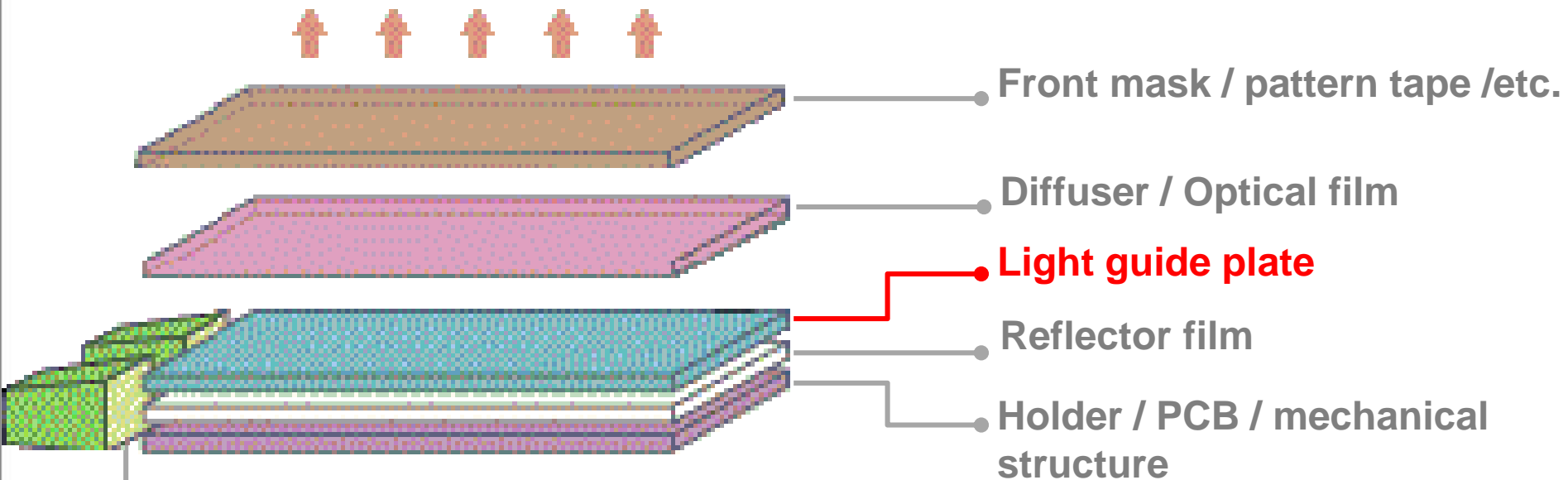


Panel Light Channel Letter Flexible LED strip

Backlight Application

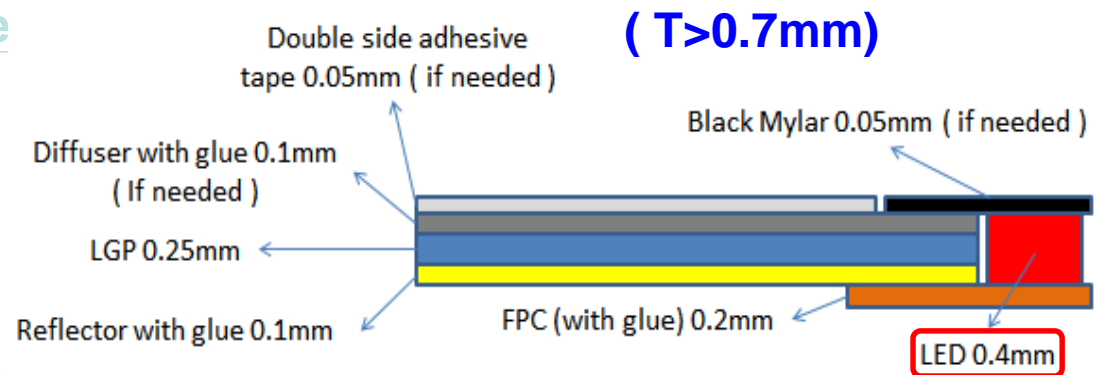


What Is BLM



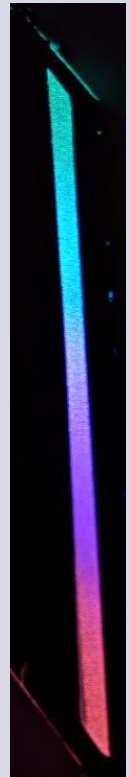
BLM Structure

LED



Why BLM (Back Light Module)

- ✓ Various shapes of the lighting performance
- ✓ Minimize LED quantities
- ✓ Diversity Module structure



What **LITE-ON** Can Do

Light guide solution



plate



injection



pipe

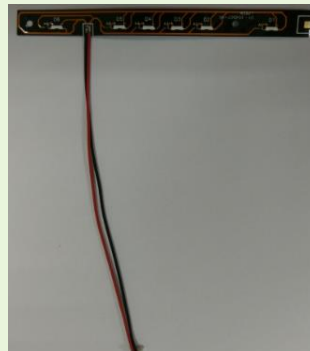


sheet

Connecting type



FFC



wire

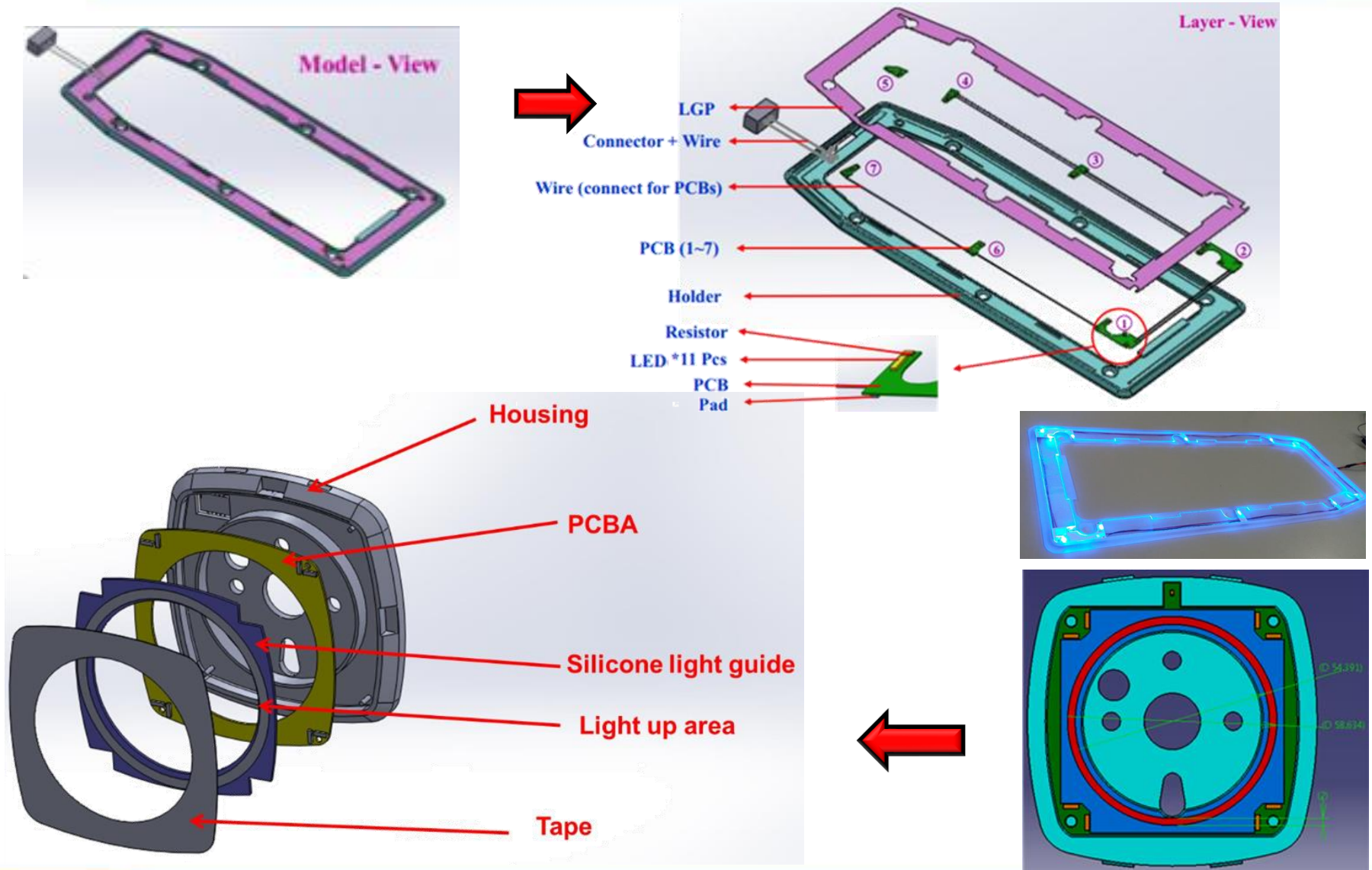


cable

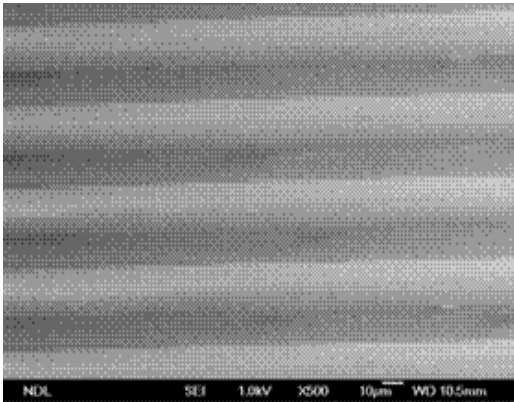
Product solution



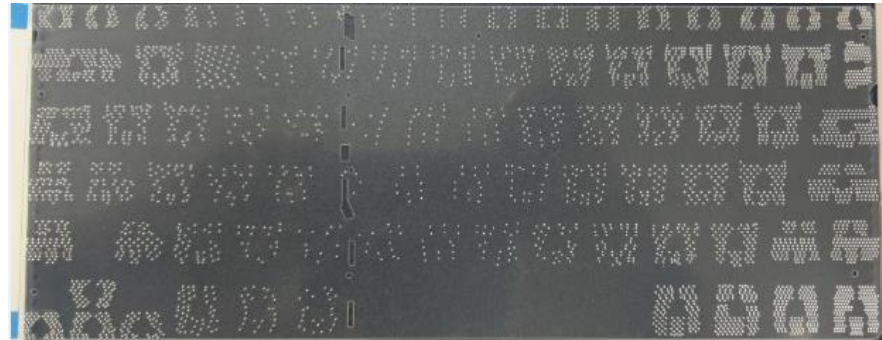
Mechanical Design



Light guide pattern design



V-cut



Printing



Hot-stamped

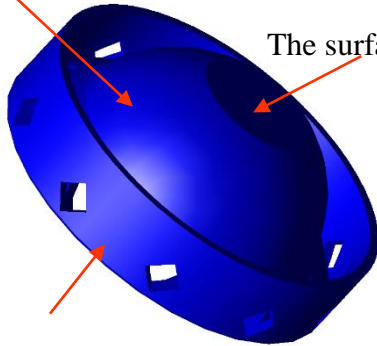


Injection

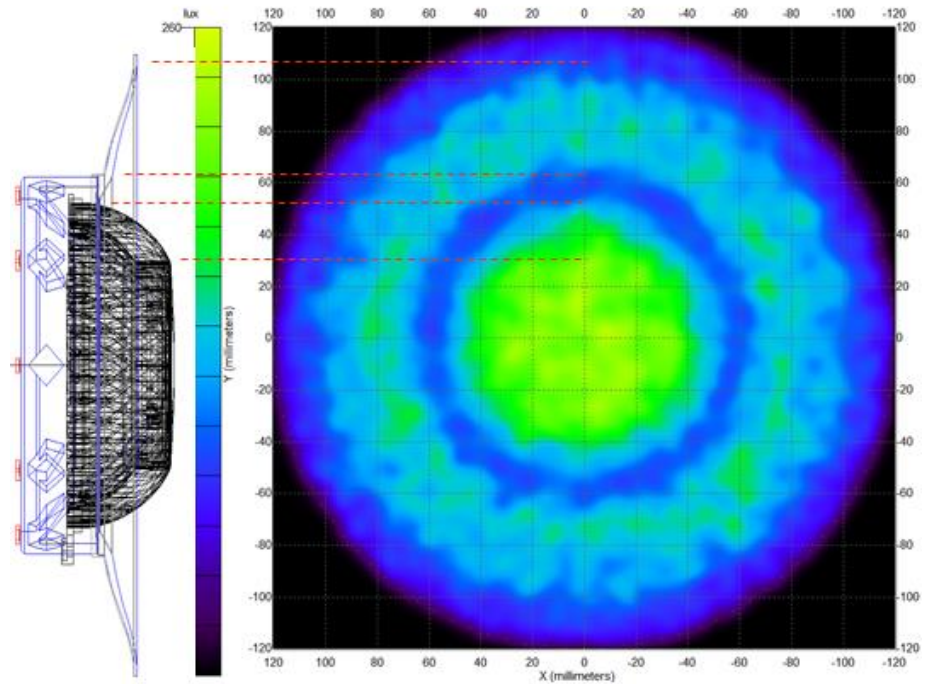
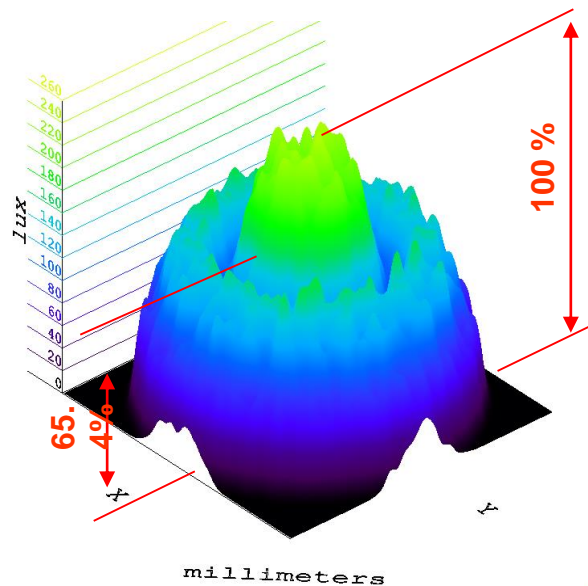
Optical Simulation

The surface of semi-sphere with 18% diffusion

The surface with 35% diffusion

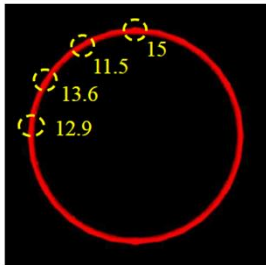


Other surfaces are smooth surface.

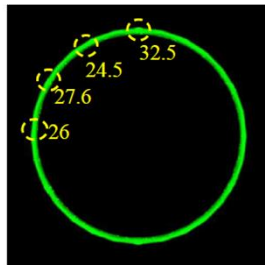


Brightness Distribution on Screen

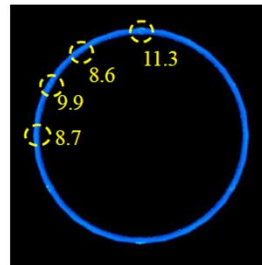
Optical Simulation



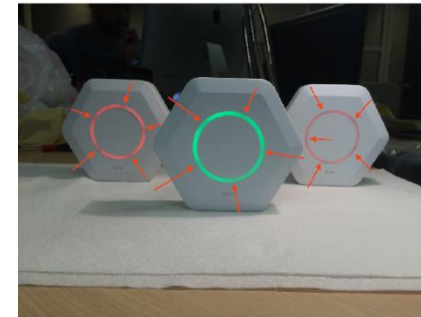
Average: 13.25 cd/m²
Uniformity: 76.6%



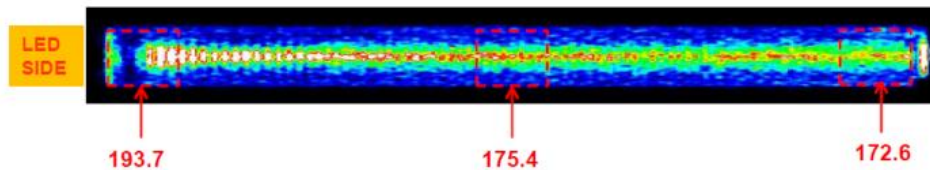
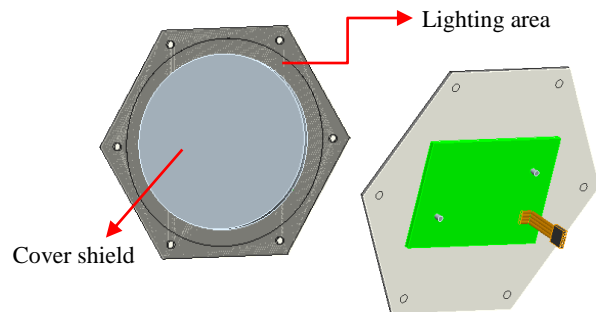
Average: 27.65 cd/m²
Uniformity: 75.3%



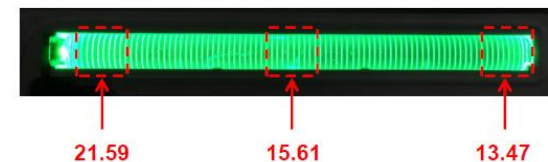
Average: 9.6 cd/m²
Uniformity: 76.1%



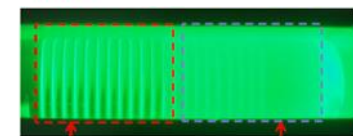
Mockup Sample



Average : 180.56 cd/m²
Uniformity : 89.16%



Average : 16.89
Uniformity : 62.38%



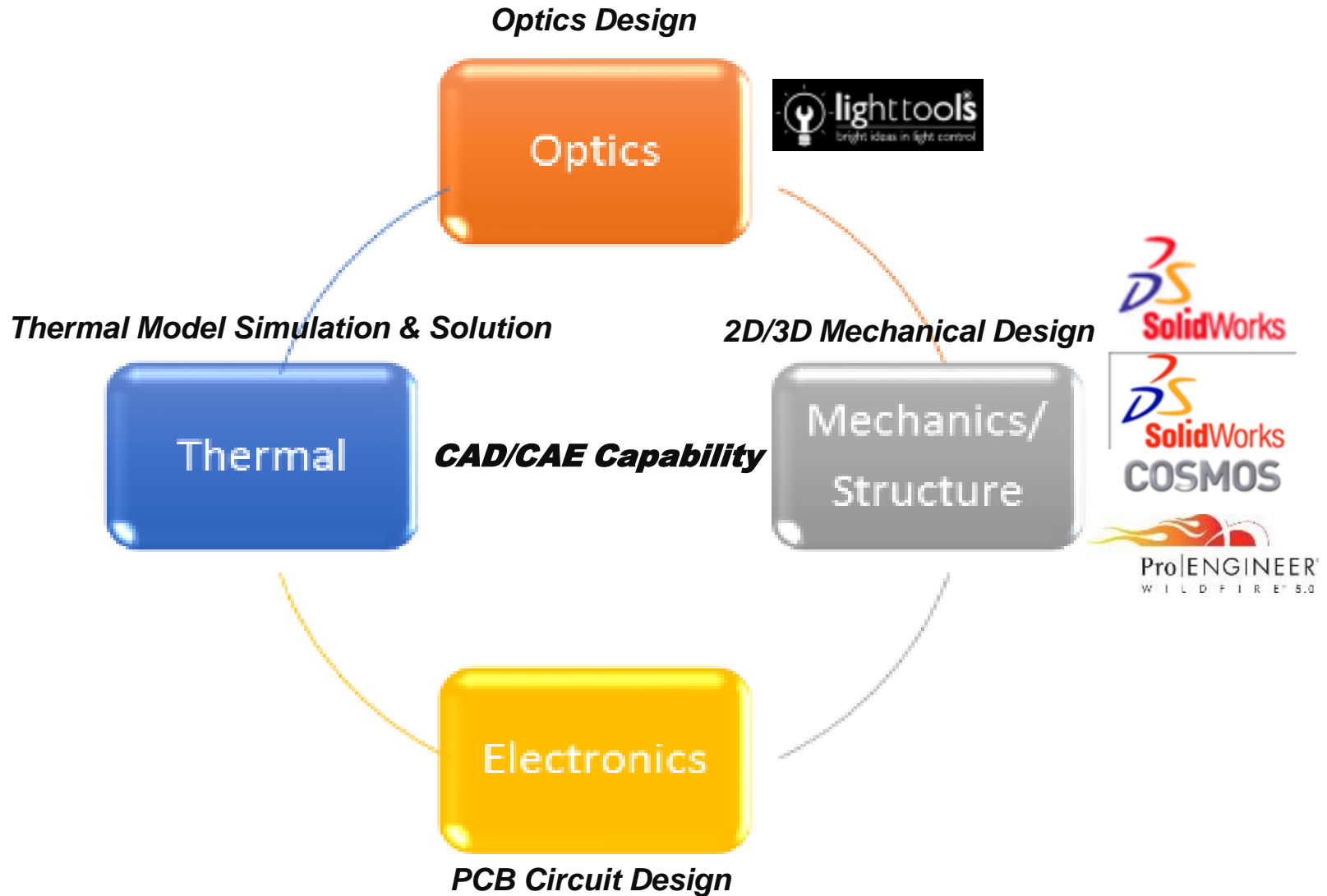
Without sand blasting
18.41mcd

With sand blasting
26.31 mcd

Optical solution

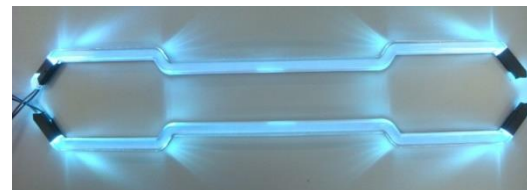
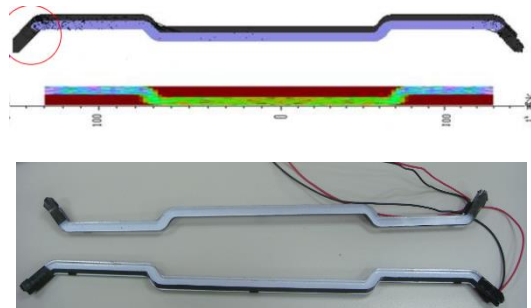
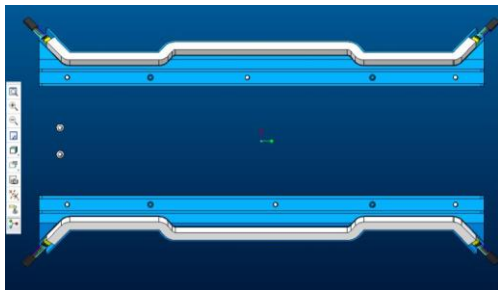
LITE-ON simulation result

LITE-ON Capability for BLM



BLM Developing Flow

DATA Input	Design & Simulation	Mockup	Tooling	MP
<ul style="list-style-type: none"> Structure Light source Materials Requirement 	<ul style="list-style-type: none"> Optical /structure design Simulation result analysis 	<ul style="list-style-type: none"> Performance Verification. Assy Proposal 	<ul style="list-style-type: none"> Pattern Structure Surface Films 	<ul style="list-style-type: none"> ASSY, Testing
<ul style="list-style-type: none"> 3D drawing (.stp) LED spec Application environment 	<ul style="list-style-type: none"> Catia / ProE AutoCad Lighttools Gtools 	<ul style="list-style-type: none"> PC, PMMA, ABS Al PCB LED 	<ul style="list-style-type: none"> Pattern-- Laser、Printing、Machining Surface -- Texture、Blasting、Coating 	<ul style="list-style-type: none"> Chroma meter CS-100 A Light meter Li-250A Process-- Injection、Hot Stamping
L/T:2~7 days		L/T:2~4 weeks	L/T:2~4 weeks	L/T:2~4 weeks

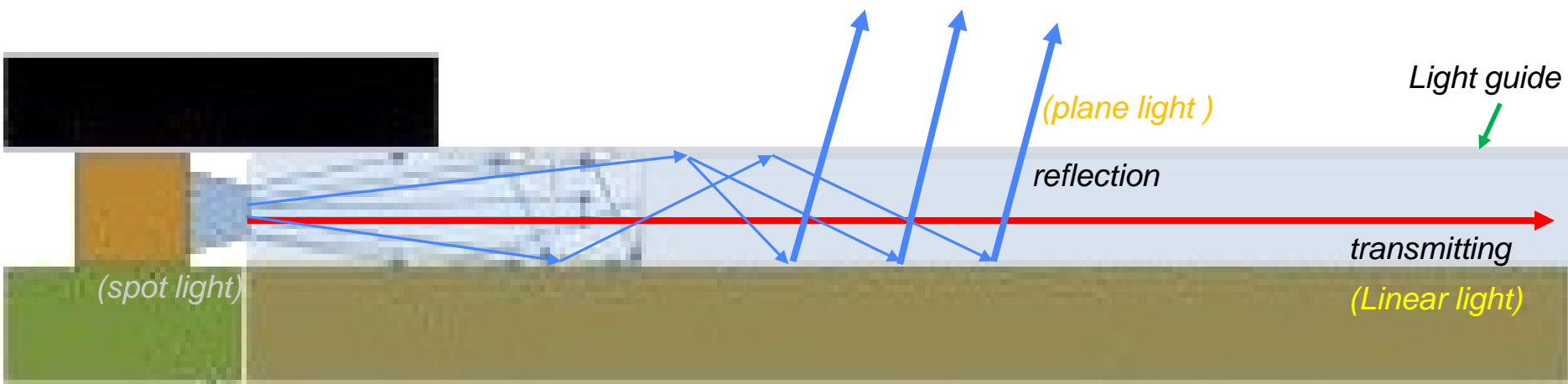




What Is Light Guide?

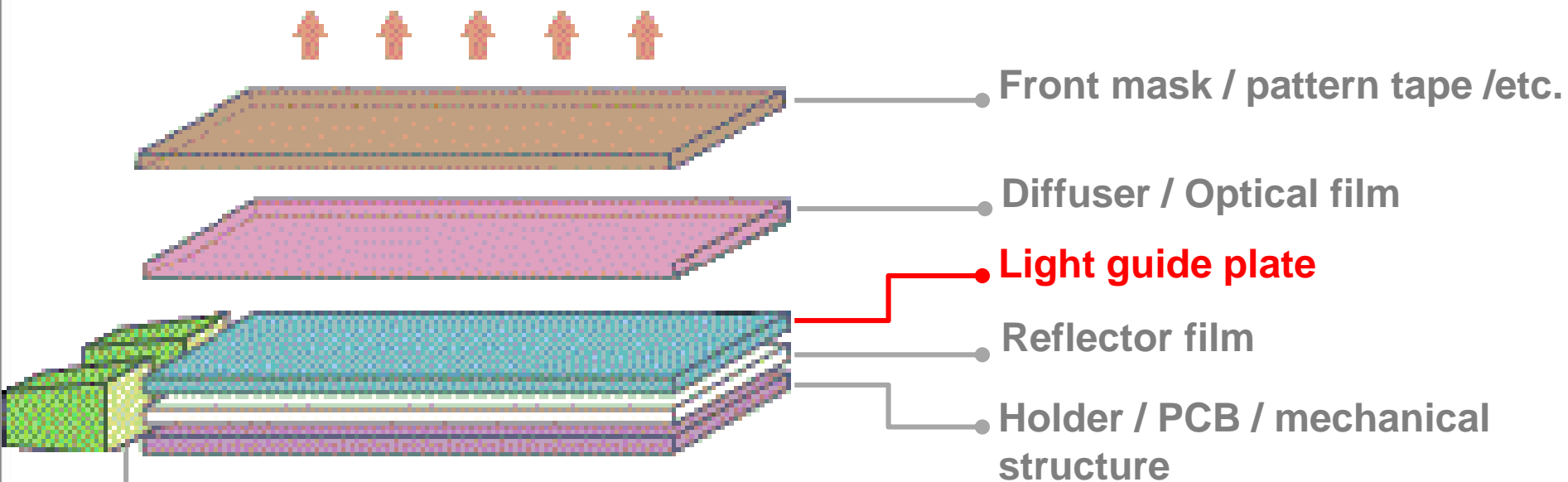
From point light source to surface light source.

- ✓ Light propagation through total reflection
- ✓ Light will reflect out of the surface due to optical structure
- ✓ *Through the optical structure to define what effect customer expect.*



Optical Principle

Where Is Light Guide?



BLM Structure

