

"Light up your imagination!"

LumiSheet



evo-**lite**
.COM

A FAWOO TECHNOLOGY
COMPANY

1247 Santa Fe Dr.
Denver, CO 80204
303-996-2980



FAWOO TECHNOLOGY

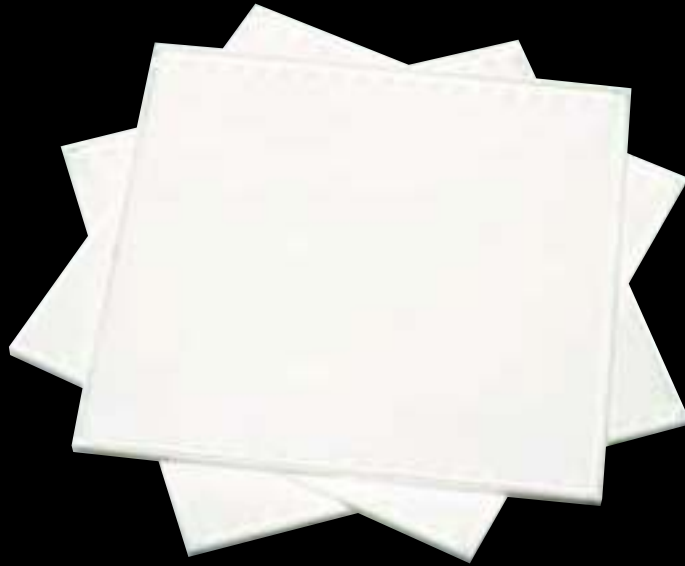
About Fawoo Technology

Fawoo Technology leads the competition by designing and producing the most advanced LED Lighting products available today. This newly constructed 650,000 sq. ft. carbon neutral facility houses R&D, manufacturing and testing of all Fawoo products.



President & CEO
Young-Ho, Yoo



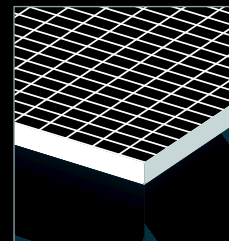


About Lumisheet

LumiSheet is the world's first LED integrated BLU (Back Light Unit) which is unlike existing BLUs that rely on framework and other methods to attach the LEDs to the LGP (Light Guide Plate). LumiSheet combines high brightness LEDs with a proprietary and patented 3D-V cut Light Guide Plate to produce a Back Light Unit that surpasses all competition. Conventional LGPs are limited to the signage and display industry. Fawoo's LumiSheet, characterized by its simple, thin, fully customizable, eco-friendly design, allows for evolving applications that are gaining the interest of a growing number of markets such as Lighting, Interior Design, POP and others. LumiSheet has proven itself as the next generation of flat lighting.

3D V-Cutting Technology

Fawoo's 3D V-cutting technology ensures that light is evenly reflected throughout the acrylic Light Guide Plate (LGP) by producing V-grooves at specific intervals according to LED placement and the direction of irradiation. The vertical V-grooves are widely spaced when close to the light source and narrowly spaced as they get further away from the light source. The horizontal V-grooves gradually grow wider and deeper as their distance from the light source increases. This allows for maximum light output over the entire surface of the LGP.





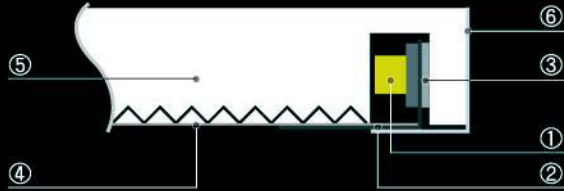
"Make the impossible possible with LumiSheet!"

Features & Benefits of Fawoo Lumisheet

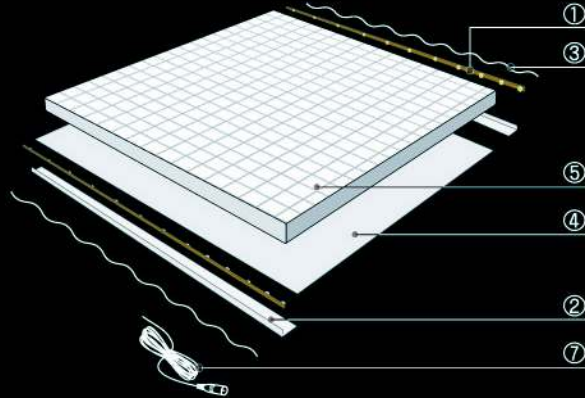
- **Super Slim** ----- Available thicknesses include 4, 6, 8 and 10mm.
- **Long Lifetime & Maintenance Free** ----- Over 50,000 hours/11 years @ 12hrs a day
This equates to lower maintenance costs as well as the inconvenience of down time.
- **Low Power Consumption & Cost Saving** ----- LumiSheet consumes up to 70% less energy than T5 fluorescent lamps and up to 30% less energy than cold cathode fluorescent lamps.
- **Eco-Friendly Product** ----- LumiSheet contains NO mercury or other heavy metals.
- **UL approved** ----- E3325796, E325001
- **High quality approved parts** ----- Licensed LEDs, Crystal acrylic, high temperature resistant silicone rubber, UL/CE approved wiring.
- **Water Resistant** ----- IP-67 rating available (Protection against dust and temporary emersion up to 39 inches).
- **Fully Customizable** ----- Virtually any shape and size up to 59"x118".
- **World wide Patented** ----- Refer to back cover.

Unit Drawing

2D drawing



3D drawing



Description

- ① High Density Flexible LED Module
- ② Aluminum Heat Sink Plate
- ③ STS Zig-Zag Tensioner
- ④ Reflective Sheet
- ⑤ 3D V - Cut Light Guide Plate
- ⑥ Reflection Tape
- ⑦ DC Power Cord

Types of Lumisheet

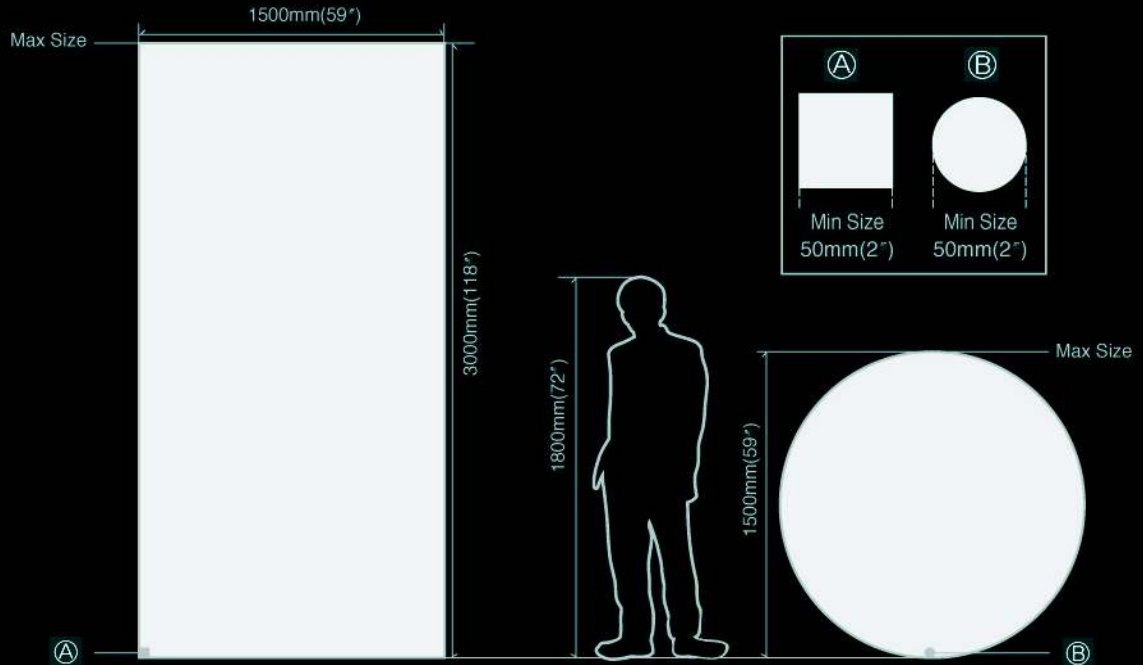
TYPES	THICKNESS(mm)	ACRYLIC	LED TYPE	MAX SIZE(mm)
Single Face	4	4T	Side Emitting	59"x39"
Single Face	5.2	5.2T	Top Emitting	59"x39"
Single Face	6	6T	Top Emitting	59"x118"
Single Face	8	8T	Top Emitting	59"x118"
Single Face	10	10T	Top Emitting	59"x118"
Double Face	8	4T + 4T	Side Emitting	59"x39"

Specifications

ITEM	DESCRIPTION	REMARKS
Primary Material	Acrylic (PMMA)	
Thickness(mm)	4, 6, 8, 10	5.2(LumiSheet Ad)
Min. Size	2"x2"	
Max. Size	118"x59"	
Power Supply	AC 100-240V, DC 12V Adaptor	
Input Voltage	DC 12V	DC 24V Available
Light Source	3528 SMD Top Emitting LED(6, 8, 10mm)/Side Emitting LED(4mm)	
Luminous Efficiency(LED)	More Than 60lm/W	
Color Temp. (CCT)	Standard - 3700K, 5300K	Other CCT Available
IP Rating	IP-67 Upon Request	Refer to note below
Lifetime	More Than 50,000 Hours	
LED Warranty	2 Years	
LGP Warranty	5 Years	

Standard LumiSheet has No IP rating and is for indoor use. LumiSheet with an IP-67 rating can be made upon customer's request at additional cost.

Max Size & Min Size | LumiSheet can be produced in sizes ranging from 2"x2" to 59"x118"



Example Size & Specifications

SIZE(mm)	SIZE(inches)	LED STRIP	SURFACE BRIGHTNESS(Lx)	POWER CONSUMPTION(W)
150 x 150	6"x6"	1 Side	5,000	2.25
300 x 300	12"x12"	1 Side	3,500	3.9
600 x 600	24"x24"	2 Sides	2,800	13.3
900 x 900	36"x36"	2 Sides	2,000	18.4
1200 x 1200	48"x48"	2 Sides	1,800	20.0
2400 x 2400	96"x96"	2 Sides	1,600	31.0
152 dia. circle	6" dia. circle	Entire Perimeter	17,000	5.8
300 dia. circle	12" dia. circle	Entire Perimeter	11,000	11.2
600 dia. circle	24" dia. circle	Entire Perimeter	4,500	17.0
900 dia. circle	36" dia. circle	Entire Perimeter	3,000	21.5
1200 dia. circle	48" dia. circle	Entire Perimeter	2,200	24.0

Above brightness data was measured from Jan. to Aug., 2009. As LEDs continue to evolve, the brightness of LumiSheet may differ from above data. Above power consumption may differ from actual wattage.

LED Light Panel

Fawoo's LED Light Panel features a slim profile, 50,000hr + life, low power consumption, easy to use front accessible snap frame and is customizable in size up to 59"x118". The LED Light Panel enables effective advertising in space limited areas with little to no maintenance costs.

- UL, CE approval
- Super slim profile, 1" thick frame
- Low power consumption
- Ultra long life (50,000hr avg.)
- Eco-friendly
- Convenient snap frame
- Single and double sided
- Multiple finishes
- Customizable in size up to 59"x118"

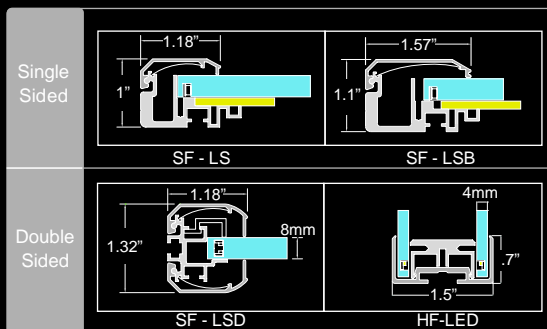


LumiSheet

LED Light Panel



Frame structure



The below sizes are standard. Custom sizes are available.

Graphic Size (mm)	Graphic Size (inch)	Brightness (Lx)	Power Consumption(w)
841 x 594 (A1)	33" x 23"	2100	16.5
420 x 594 (A2)	17" x 23"	2900	10.6
297 x 420 (A3)	12" x 17"	3600	7.2
297 x 210 (A4)	12" x 8"	3600	3.9
700 x 500	28" x 20"	2500	15.5
1000 x 700	40" x 28"	2000	17.4
246 x 1794	10" x 71"	1500	20.2

LED Channel Letter



Almost any font or logo can be produced using Fawoo's Channel Letter Technology. Each letter has a brightness of over 7000Lux and can be produced as halo, front and halo or front illuminating. Multiple letters can be daisy chained using Fawoo's spider wire connectors. Mounting is dependant upon your application. This can be as easy as direct mounting using VHB tape or drilling the letter for stud mounting. Fawoo's Channel Letters are rated for interior use only at this time.

- High brightness and long life (50,000hrs)
- Almost any font including cursive and script
- Any color
- Easy to install with no maintenance
- reasonably priced
- High quality

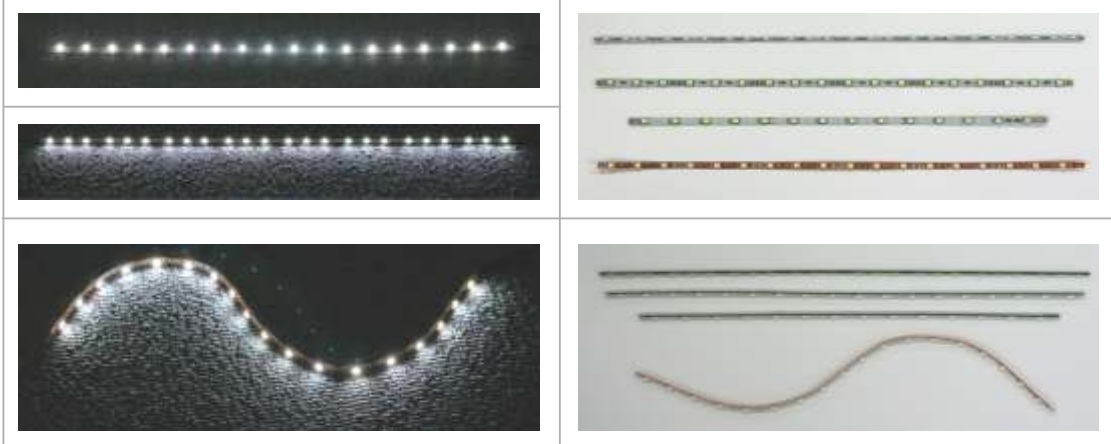


ITEM	DESCRIPTION
Min. Height	4"
Max. Height	48"
Thickness	.75" - 1.06"
Surface Brightness(Lux)	5,000 ~ 9,000
Input Voltage	DC 12V
Lifetime	More than 30,000 hours



Parts & Accessories

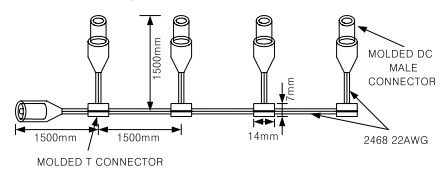
LED Module



Model	Input Voltage	Dimension (mm)	LED Quantity	LED pitch(mm)	Power Dissipation(W)	Remarks
FT12V280	DC 12V	4.4(W) x 280(L)	18	15	4.5	TOP VIEW
FT12VE280	DC 12V	4.4(W) x 280(L)	24	11	6	
FT12V280P15V35	DC 24V	4.4(W) x 280(L)	18	15	3	
FT24V270	DC 12V	5.5(W) x 270(L)	18	15	4.5	
FS12VE280	DC 12V	3.0(W) x 280(L)	36	7.5	3.06	SIDE VIEW

Spider Connector Cable

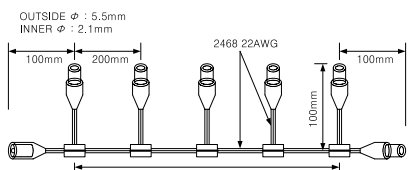
A 4 Way Long Spider Connector Cable



MOLDED DC MALE CONNECTOR
MOLDED T CONNECTOR
2468 22AWG

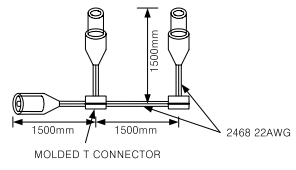
C 6 Way Short Spider Connector Cable

OUTSIDE ϕ : 5.5mm
INNER ϕ : 2.1mm



2468 22AWG
800mm

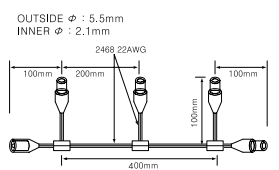
B 2 Way Long Spider Connector Cable



MOLDED T CONNECTOR
2468 22AWG

D 4 Way Short Spider Connector Cable

OUTSIDE ϕ : 5.5mm
INNER ϕ : 2.1mm



2468 22AWG
400mm

Parts & Accessories

Switching Adaptor

CE    **Class2**



Output: **12V / 0.3A**
 Input: AC100-240V 50/60Hz 0.2A
 Power consumption(W): 3.6W
 Certification: UL/CE/EK
 Type: Wall Mount
 Size: 2.35"(L)x1.97"(W)x1.57"(H)



Output: **12V / 3.0A**
 Input: AC100-240V 50/60Hz 1.2A
 Power Consumption:36W
 Certification: UL/CE/EK/PSE/UK/AU
 Type: Desk Top
 Size: 3.75"(L)x2.26"(W)x1.31"(H)



Output: **12V / 1.0A**
 Input: AC100-240V 50/60Hz 0.3A
 Power consumption(W): 12W
 Certification: UL/CE/EK/PSE
 Type: Wall Mount
 Size: 2.75"(L)x1.17"(W)x2.52"(H)



Output: **12V / 5.0A**
 Input: AC100-240C 50/60Hz 1.2A
 Power Consumption:60W
 Certification: UL/CE/EK/PSE/UK/AU
 Type: Desk Top
 Size: 4.78"(L)x2.22"(W)x1.31"(H)



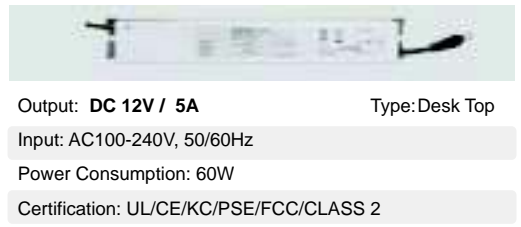
Output: **24V / 2.0A**
 Input: AC100-240V 50/60Hz 1.5A
 Power Consumption: 48W
 Certification: UL/CE/EK/PSE
 Type: Desk Top
 Size: 47.24"(L)x2.36"(W)x2.36"(H)



Dimmer
 Use within 12V / 5A
 On / Off function
 10 levels of brightness
 Controllable by Remote Control
 3m length censor



Output: **DC 12V / 0.8A**
 Input: AC100-240V, 50/60Hz
 Power Consumption: 10W
 Certification: UL/CE/KC/PSE
 /FCC/CLASS2
 Type: Desk Top



Output: **DC 12V / 5A** Type: Desk Top
 Input: AC100-240V, 50/60Hz
 Power Consumption: 60W
 Certification: UL/CE/KC/PSE/FCC/CLASS 2

Class 2 Adaptor



Output: 12V / 3.0A, 5.0A Type: Desk Top
 Input: AC100-240V 50/60Hz 1.5A
 Power Consumption: 36W
 Certification: UL/CE/EK/PSE/CLASS 2
 Size: 9.05"(L)x1.10"(W)x.6"(H)

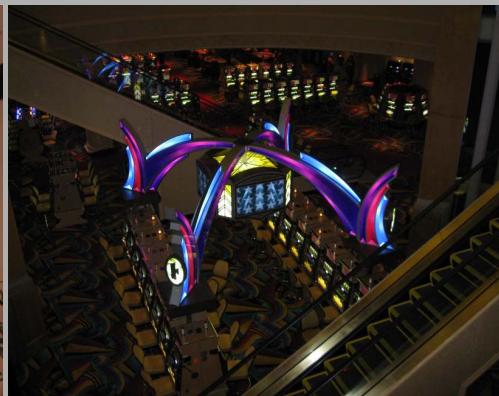
Class 2 Adaptor - Hard Wire Type



Output: 12V / 3.0A, 5.0A Type: Desk Top
 Input: AC100-240V 50/60Hz 1.5A
 Power Consumption: 60W
 Certification: UL/CE/EK/PSE/CLASS 2
 Size: 9.05"(L)x1.10"(W)x.6"(H)



Applications





Lumisheet

● Indoor Lighting

LumiSheet's customizable, lightweight simple design allows for interesting and unique lighting options.

● Outdoor Lighting

LumiSheet can be requested with an IP-67 rating to allow for outdoor applications such as signage / way finding and architectural elements.

● Shop Display

LumiSheet is perfect for display lighting as integrated shelving drawing attention to articles on display.

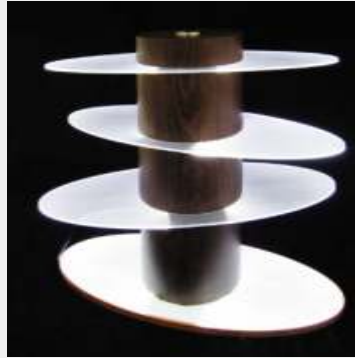
● Backlight Unit

LumiSheet's brightness and uniform illumination is perfect for backlighting many materials such as onyx, glass and cast acrylic.

● Signage Industry & Others

LumiSheet's customizable options allow for easy integration into the signage industry. From menu boards to custom logos and identity signs, we're sure you'll agree that LumiSheet is in a league all it's own.

Indoor Lighting



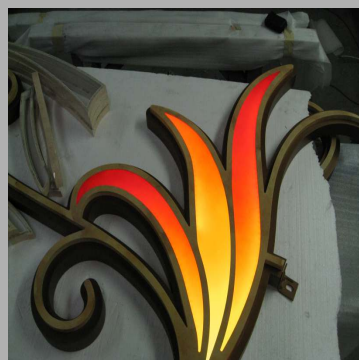
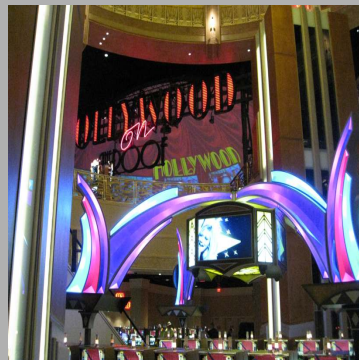
Outdoor Lighting



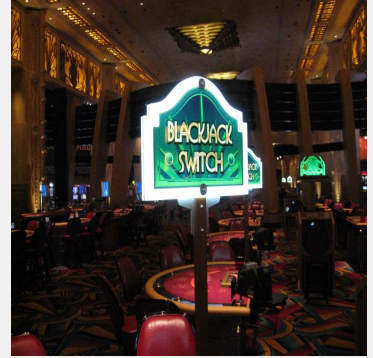
Store Display



BackLightUnit



Signage industry & Others



Samples

The brightness and evenness of light distribution differs depending upon size, shape and thickness. LumiSheet samples of a particular size, shape and thickness do not fully represent other sizes, shapes and thicknesses. We recommend that a full size sample is reviewed and fully understood and approved by the client before placing final order.

TERMS & CONDITIONS

General

It's the client's responsibility to become adequately familiar with Evo-Lite's product line and to have a full understanding of the technologies and their use alone or in conjunction with other materials prior to ordering. Technical manuals and the support of Evo-Lite are available for this purpose. Any questions pertaining to the use or installation of Evo-Lite's product line should be adequately answered and fully understood prior to purchase.

Request for Quote

When submitting a request for quote "Per Plans" and "Per Specifications" is not acceptable to Evo-Lite. Proper dialogue along with appropriate drawings is necessary to ensure an accurate quote.

Purchase Orders

Proper documentation including approved and signed drawings in PDF and DXF file formats must accompany all Purchase Orders sent to Evo-Lite when ordering LumiSheet.

Payment Terms

- Full payment must be received along with purchase order for all custom orders unless other terms have been agreed upon in advance. Please contact Evo-Lite for payment term options.
- All payments are non refundable
- All products are of a custom nature and are non returnable

Lead Time

Manufacturing will not commence until full payment as well as approved and signed drawings are received (when appropriate) in PDF & DXF file format. Factory estimated lead-time does not commence until full payment has been received. Delivery schedule is an estimate only. No guarantees are expressed or implied.

Freight Policy

All orders will be shipped freight pre paid.

All products represented by Evo-Lite are shipped FOB associated manufacturers factory unless otherwise noted.

Disclaimer

Evo-Lite nor associated manufacturers are liable for damages of any kind resulting from the purchase, use, or misuse of, or inability to use the product or arising directly or in directly from the use or loss of use of the product or from the original purchaser's ("you", " purchaser") lack of knowledge or comprehension, including incidental, special, consequential or similar damages, or loss of anticipated profits or benefits. Also be aware that Evo-Lite and associated manufacturers are not liable for damages arising from any tort (including negligence or gross negligence) on the part of the purchaser or faults in technical manuals.

If you are in doubt or find information which might not be correct, please contact Evo-Lite.

Evo-Lite or associated manufacturers shall not be liable for any costs associated with job schedules due to missed delivery commitments, fulfillment or performance of this contract.

Freight damage claims are the responsibility of the customer.

Warranty

Evo-Lite passes on all warranties provided by manufacturer. (See technical manuals)

Any implied warranty for fitness for any particular use is expressly disclaimed.

Evo-Lite will limit its actions to furnishing new parts in accordance with manufacturers' warranties which do not include any other costs of removal, installation or other project charges. Shipping charges may apply.

LumiSheet Patent List
(Application No.)

■ **PIN KIT FOR V-CUTTER**

Korea
10-0552589, 10-0557738, 10-0557741, 0540055, 0540053, 10-0772921, 10-0716543,
10-0565890, 10-0753963, 10-0643604, 10-0736656, 10-0748074, 10-0748073, 10-0762741
USA: 6792842 | Japan: 3463060 | EU: 1335817 | China: ZL 01818623.8 | Taiwan: 163820

■ **V-CUTTER FOR AN LCD LIGHT GUIDE PANEL**

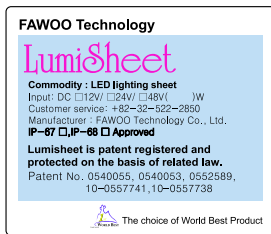
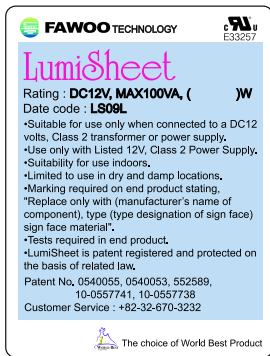
USA: 6619175 | Japan: 3500466 | Taiwan: 155175

■ **LIGHT GUIDE PANEL WITH LIGHT GUIDING PARTS**

USA: US 7,018,087 B2

■ **BACKLIGHT UNIT CAPABLE OF EASILY FORMING CURVED AND THREE DIMENSIONAL SHAPE**

USA: 7473022 | Japan: 4427528 | China: ZL 200610085027.0 | Taiwan: I 312899 | Singapore: 141901 | South Africa: 2008/03676
EU(Germany, UK, France, Italy, Spain, Netherlands, Belgium, Sweden, Austria, Poland, Denmark, Greece, Ireland, Finland, Portugal, Czech Republic, Hungary, Romania, Slovakia, Bulgaria, Switzerland, Luxembourg, Slovenia, Turkey, Latvia): 1,780,584



A FAWOO TECHNOLOGY COMPANY

**1247 Santa Fe Dr.
Denver, CO 80204
303-996-2980**

FAWOO sticker | Standard sticker | Hologram

Original LumiSheet of Fawoo Technology must be labeled with above hologram and LumiSheet stickers on the back side. And the hologram is to symbolize our license on LumiSheet.

- 5Years Warranty on LGP
- 2Years Warranty on LumiSheet & LumiSheet-Ad (LGP + LED)
- 2Years Warranty on Light Panel (LGP + LED + Frame)

