

## Back Light LED Injection Module-Tiger series



### Characteristics

- Adopting SMD2835 as light source, with high purity aluminum PCB, better heat transfer;
- Constant current driver ensuring full bunch with consistent brightness and stably working;
- Al substrate for LED and components , with better heat dissipation;
- Secondary optic design, 160 degree visual angle, no light dots, good light uniformity;
- Best sealed, IP65 with moisture-proof, water-proof, dust-proof and impact resistance;
- Adopting PVC injection molding technology, with nice structure & design;
- All raw materials are in accordance with RoHS standards;
- Long lifespan > 35,000 hours with low failure rate.

### Application

- Channel letter
- Metro sign
- Advertising light box
- Back light source

### Description

MA653E is a new design of low power LED module. Adopting secondary optic design technology, high light transmittance PMMA lens, 160 degree wide beam angle, greatly improve the light evenness on the surface;

Al substrate for LED and components , with better heat dissipation.

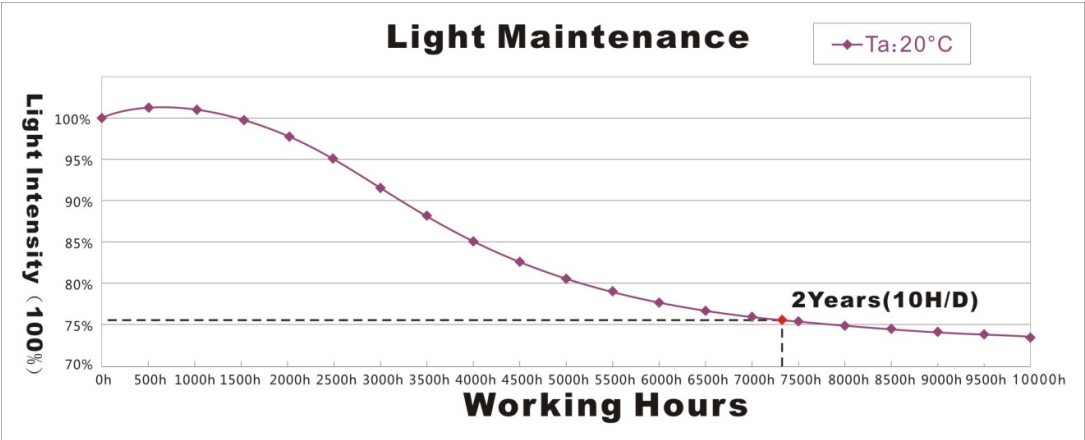
LED's working circuit is constant current, effectively prevent the unstable power supply effecting the LED lifespan.

With PVC injection technology, good protective property, nice structure and design. This product has our own patent of utility model and appearance.

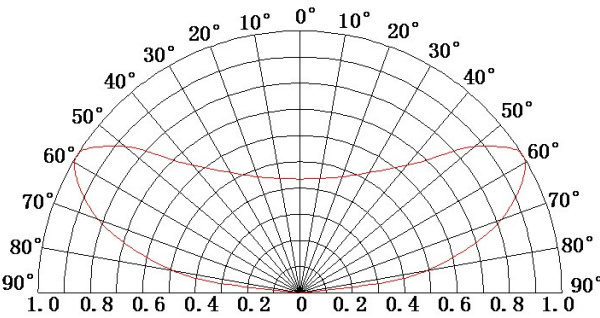
## Parameter

Parameters		(Room temperature =25□)				
Item	Parameter	Unit				
LED Type	2835					
LED Quantity	3	PCS				
Concatenation	20	PCS				
Dimension	65*14.5*7.8	mm				
Module's Center Dis.	157	mm				
Power	0.72±10% or 1w	W				
Input Voltage	DC12	V				
Input Current	0.06±10% or 0.083±10%	A				
Driving mode	Constant voltage					
Surface Temp.	< 40	□				
Working Temp.	-20 ~ +45	□				
Storage Temp.	-30 ~ +60	□				
Protect Level	IP65	-				
Optical and Electrical Parameters		(Room temperature=25□)				
Test Item	Test condition	symbol	Parameters			Unit
			Min.	Typical	Max.	
Color temperature	DC12V	CCT	10000	12000	15000	k
			5500	6000	6500	
			2800	3000	3200	
CRI	DC12V	CRI	70	75	80	--
Luminous Flux	DC12V@12000K	Φ	-	52	-	lm
	DC12V@6000K		-	60	-	
	DC12V@3000K		-	56	-	
Visual Angle	DC12V	Wd	-	160	-	Deg

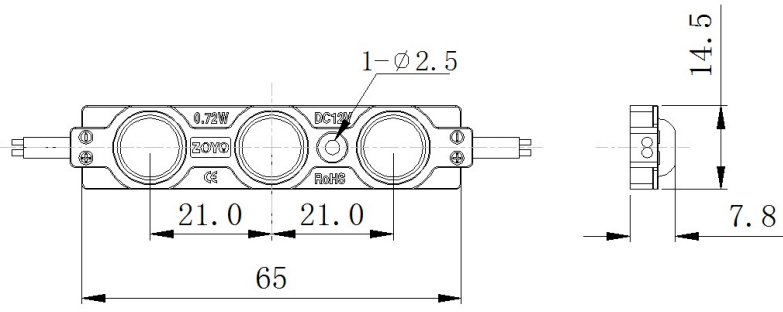
Light Attenuation Graph



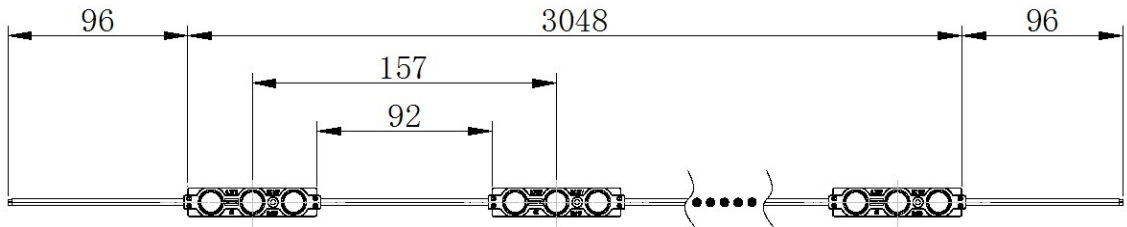
Light Distribution Curve



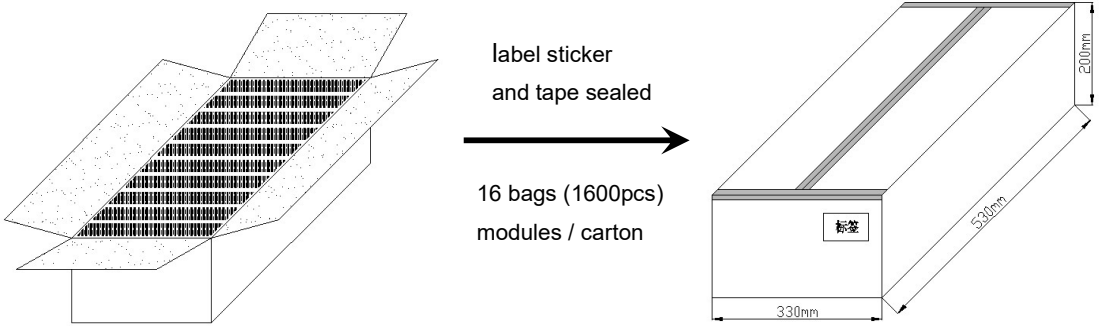
Product Sketch



20PCS



**Package Diagram**

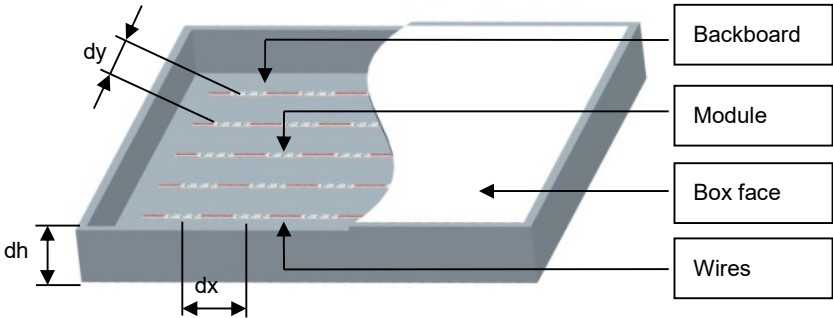


Carton Size ( mm )	Qty/CTN ( PCS )	Gross Weight ( KG )	Net Weight ( KG )
530*330*200	1600	15.5	14.7

**Instruction**

- (1) Installation Method:
  - A. -- Clean the fixation board and stabilize it.
  - Position the module with double sided tape and stick on the back of board.
  - Use silicon glue to fix modules (if needed).
  - B. Left one  $\Phi 2.5\text{mm}$  mounting holes, use screw  $\Phi 2\text{mm} \times 10$  to fix it on board

(2) Modules Positioning (Vertical and Horizontal) :



Item No.	Light box thickness DH(mm)	Module horizontal distance DX(mm)	Module vertical distance DY(mm)	Modules average in 1m <sup>2</sup> (pcs/m <sup>2</sup> )	Surface illumination (lux)
MA653F	80	120	80	100	800±10%
Remarks: 1.The panel is 3mm acrylic board, 60% transmittance.					

## Notice

1. The output of power supply should be matched with the module's working voltage as module doesn't have short circuit protection, overloading protection. So the selected power supply is strongly selected short circuit protection and overloading protection functions. The +/- of the modules should be connected rightly: red-anode and white-cathode.
2. Max 20pcs in one bunch, better not more than this as it will cause lower brightness or danger. If need over 20pcs modules, suggested first in series then parallels.
3. Power supply should be 20-30% more than the exact LEDs power, and wires should be a little bigger than the current which is needed.
4. Modules forbidden to put into a inflammable substance, never be covered with a tight cover or onto the heat insulated sheet materials.
5. In case of installation or replacement, sure first to cut off power.
6. This type LED modules are not for dimmable function.
7. If there is something unusual ( dark or flickering),pls check firstly power is right on or output voltage is correct. If all is right, pls change the module.
8. This modules are only used for light boxes, signs which have cover to protect modules, not used in outdoor or directly opening conditions.
9. Standard to: GB-24819 GB/T-24823 GB/T-24824

This product manual is just for reference; please take the accurate characteristics the same as your tested results.  
If this manual will be updated, there should be no extra notice.