LEDIFY

OMEGA PRO SERIES

Model Number: L24

PREMIUM 24V LED MODULE

GSB BOARDS | CHANNEL LETTERS

Providing Better Solutions

24V DC IP66 174LM 175°

Product Overview

LEDIFY OMEGA PRO L24 Series is a premium 24V high-brightness LED Module engineered for professional signage applications including GSB boards, acrylic channel letters, glow sign boards, and large-format light boxes.

Designed with advanced thermal management technology, high-efficiency LEDs, and a premium 35-micron copper PCB with 1.1mm PCB thickness, the module delivers stable illumination, reduced voltage drop, and superior long-distance performance.

With a wide 175° beam angle and 174 lumens output per module, the OMEGA PRO L24 Series ensures highly uniform illumination with reduced hot spots and optimized module consumption.

Its 24V DC architecture makes it especially suitable for large signage installations where long wire runs and stable brightness are critical.

Key Features

High brightness output upto **174LM/Module**

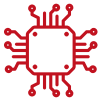
Stable **24V** constant voltage operation

Wide **175°** beam angle for uniform illumination

Energy Efficient **1.5W** design

3 Years Warranty

Excellent performance in **large signage applications**



Reduced voltage drop compared to 12V systems

1.1 mm thick PCB for enhanced durability

Premium **35 micron** copper PCB

Professional grade signage lighting solution

Optimized **heat dissipation** design

Reduces hot spots and shadowing

Available Colors

10000K

3000K

*Other CCT and colors available on request.

Certifications

Applications and Illumination Calculations

- GSB Boards
- Acrylic Channel Letters
- Fabric Light Boxes
- Large Depth Signage Applications
- Deep Box Signage
- Long Wiring Applications

Letter Depth	Recommended Spacing
75-100 mm	150-170 mm
100-120 mm	130-150 mm
120-150 mm	110-130 mm
175° beam overlap ensures smooth & uniform illumination with minimized hot spots.	

Technical Specifications

Electrical Specifications	
Model Name	LEDIFY Omega Pro Series
Model No.	L24
Input Voltage	12V DC
Operating Type	Constant Voltage
Power Consumption	1.5W / Module
Luminous Output	174LM / Module
IP Rating	IP66
Beam Angle	175°
PCB Type	Copper PCB
PCB Copper Thickness	35 Micron
PCB Thickness	1.1 mm
Brightness Type	High Brightness Module
Thermal Performance	Optimized Heat Control
Mechanical Specifications	
Housing Type	Injection Molded
Construction Type	Sealed Module Design
Mounting Type	Adhesive Tape / Screws
Thermal Design	Enhanced Heat Dissipation PCB
Application Type	Indoor and Outdoor Signage
35-micron copper and 1.1 mm PCB construction improve thermal stability, durability, and conductivity.	

Power Supply Wattage Calculation (20% Margin)

Formula:

Total Watt = Number of Modules x 1.5W

Recommended PSU = Total Watt x 1.2

Example:

If 200 Modules are used:

200 x 1.5W = 300W

300W x 1.2 = 360W

Recommended PSU: **400W 24V**

Always choose the next higher standard driver size.

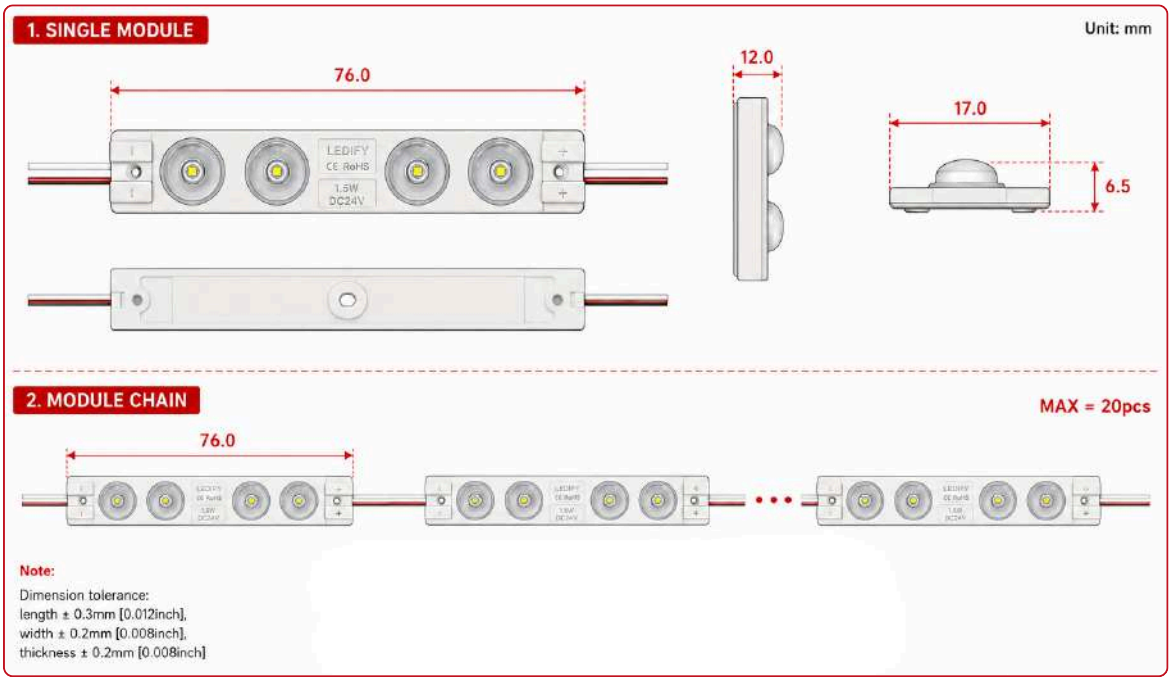
Recommended Wiring Layout

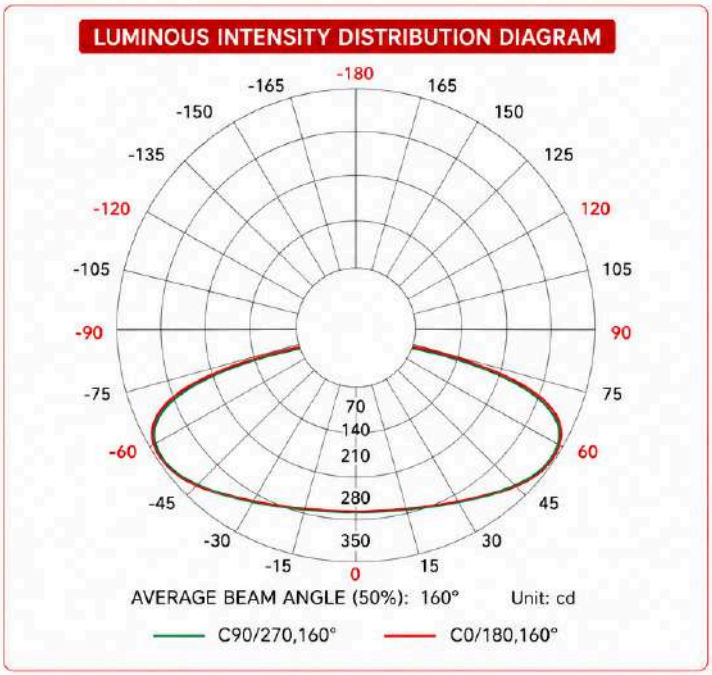
- Use regulated 24V DC power supply.
- Use parallel injection wiring for large signage.
- Maintain correct polarity. (+ / -)
- Keep wiring clean and properly insulated.
- Use minimum 18AWG (0.75 sqmm) cable.
- Avoid excessive long looping.
- Seal exposed joints properly.

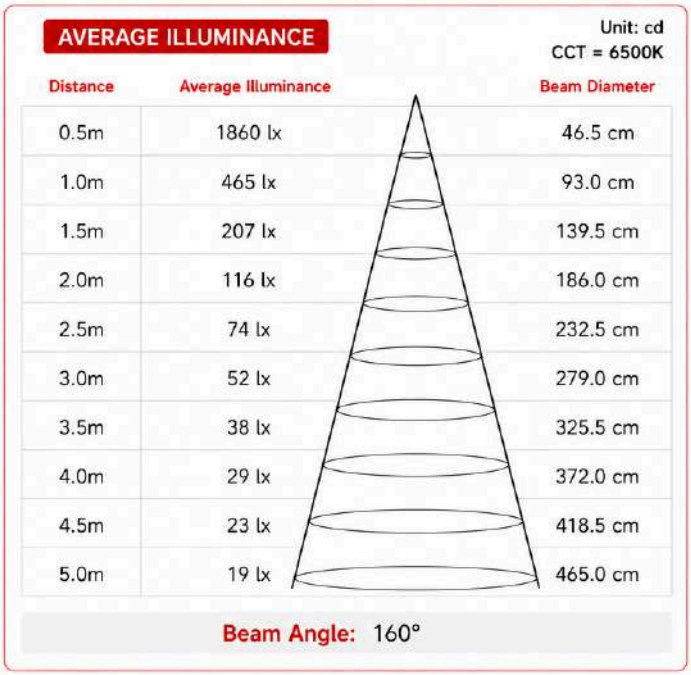
For **LARGE INSTALLATIONS,**

- Use distributed power injection for maximum brightness consistency.

Luminous Intensity Distribution Analysis







Luminous Flux:	Beam Angle:	Wattage:
174 LM / Module	160°	1.5W / Module

Note: The above data is tested based on LEDIFY OMEGA PRO L-24 SERIES (1.5W) LED MODULE at 24V DC.
Actual performance may vary depending on installation environment and conditions.

Why choose 24V instead of 12V?

Lower Volatge Drop

24V DC systems experience significantly lower voltage drop compared to 12V DC systems, especially in large signage installations.

Longer Series Connection

More modules can be connected in a single run while maintaining stable brightness throughout the chain.

Uniform Illumination

Ensures consistent light output from first module to last module with minimal brightness variation.

Reduced Current Flow

24V DC systems draw lower current for the same wattage, resulting in:
Lower heat generation, Improved efficiency, and Reduced cable stress.

Better for Large Signage

Ideal for: Large GSB Boards, Long Channel Letters, Deep Light Boxes, and Long-Distance wiring applications.

Reduced Wiring Loss

Lower current reduces power loss across cables and connectors.

Improved Power Supply Efficiency

24V DC drivers generally operate more efficiently in large-scale signage projects.

Lower Maintenance

Reduced heat & stable voltage improve module lifespan & reduce maintenance issues.

Packaging Details

Packaging Type	Quantity
Inner Box	200 Modules
Outer Carton	2000 Modules

Attention before installation

- Before installation, check that the product parameters are consistent with the requirements. (Seeing product specifications or product labels)
- Load voltage, current power and power supply should be matched with the product.
- Follow the instructions of wiring diagram (first connect the load and then the power supply) to avoid short circuit.
- Make sure the correct connection of positive and negative poles between products and power supply. Otherwise, the LEDs do not turn on.
- Make sure the power cord firmly screwed into the terminal and a should not be pulled out by hands.
- The terminal should have insulation waterproof and anti-corrosive treatment.
- After installation, the fabric light box must be covered with cloth within 48 hours.
- Please avoid leaving the light box idle for a long time.

Important Installation Notes

- Use only regulated 24V DC power supplies.
- Avoid voltage drop by proper power injection planning.
- Seal exposed wire joints properly.
- Ensure adequate ventilation inside signage boxes.
- Test illumination before final acrylic installation.
- Do not overload power supplies.
- Installation should be carried out by trained technicians.
- Proper wiring improves lifespan and lighting consistency.

Warnings

- Do not disassemble or retrofit the light. Do not touch the surface of the light with a sharp object.
- Do not do live-line working during installation especially for high voltage product.
- Do not use any organic chemical solvents Use neutral glass adhesive to fix this product and it needs to be dried 24 hours in the open environment after operation.
- Treat the ends and the circuit connection points that are not connected to the main line with insulation, waterproof, and anti-corrosion in the installation.
- Use 18AWG (0.75mm² cross-sectional area) or thicker core wire to avoid adverse consequences caused by overheating, if the power cable need to lengthen.
- Make sure the input voltage meets the requirements and lines are connected correctly before lighting on.
- This product is for signage, and do not use as general lighting.
- Series connection within the maximum run.
- The length of the power cable between the power supply and the led strip should not exceed 2m. Otherwise, large circuit loss will lead to inconsistent brightness.
- Installation, maintenance and repair should be operated by a qualified technician.

Statements

- Repair should be operated by a qualified technician, if the external circuit or main line of this product is damaged.
- The parameters given in this manual are typical values and for reference only.
- All illustrations and drawings in this manual are for reference.
- This product is subject to change without notice.

Recycling

- LED lighting products belongs to electronic products, please do recycling treatment according to the relevant WEEE directives.

Common Faults and Troubleshoot

Quick Guide		
Problems	**Reasons**	**Solutions**
All LEDs can not light ON	No electric supply	Fix the short circuit problem
	Automatic power protection from the open or short circuit in output of the power supply	
	Wrong connection of power supply	
LEDs can not light on partly	Some switching mode power supplies are not powered	Correctly connection
	Power supply line error	
	Mistaken wire connection of some of products	
Brightness of LED is inconsistent or insufficient	Power overloaded	Replace with more powerful power
	Power supply circuit excessive consumption	Make sure the working voltage of the product within 25% of standard voltage, or keep balance by circuit power consumption
	Excessive quantities in series connection of the product	Reduce the quantities of the product in series connection to meet requirement
LED flicker	Connection point fault	Remove bad connection point
	Switching power supply failure	Replace a new power supply
	Wrong Installation or use of products	Please follow the instructions

For more information

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