



LEDIFY

MINI SERIES

Model Number: M24

COMPACT ULTRASONIC LED

GSB | CHANNEL LETTERS

Providing Brighter Solutions



ULTRASONIC

Product Overview

The LEDIFY Mini Series is a **compact**, high-efficiency **24V** ultrasonic LED module designed for professional signage illumination where space, power efficiency and uniform light distribution are important.

With a rated power consumption of just **0.6W** per module and a luminous output of **72 lumens** per module, the UL-24 MINI provides efficient illumination in a compact form factor.

The **ultrasonic construction** provides a robust module assembly, while the integrated VHB adhesive tape enables quick and secure installation on suitable signage surfaces.

Key Features



High luminous output upto **72LM/Module**



120LM/W based on rated power & luminous flux



Wide **140°** beam angle for uniform illumination



Energy Efficient **0.6W** module



3 Years Warranty



24V DC operation for signages



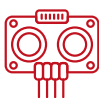
50000 HRS design life



IP67 rated for indoor and outdoor signages



VHB Adhesive tape for easy installations



Ultrasonic construction for stronger sealing



ABS housing combined with **PC optical lens**



Designed for **professional signage applications**

Available Colors



10000K



8000K



4000K



3000K

Technical Specifications

Mechanical Specifications	
Model Name	LEDIFY Mini Series
Model No.	M24
Product Construction	Ultrasonic LED Module
Housing Material	ABS
Lens Material	PC / Polycarbonate
Wire Material	High Efficiency Copper
Mounting Type	VHB Adhesive Tape
Weight	TBD
Dimensions (L x W x H)	TBD
Inter-Module Wire Length	TBD
C/C Spacing	TBD
Recommended Sign Depth	TBD
Exact dimensions and spacing should be taken from the final LEDIFY M24 sample rather than estimated from similar products.	
Electrical Specifications	
Operating Voltage	24V DC
Rated Power	0.6W / Module
Current Consumption (appx.)	0.025A / Module
Power System	Constant Voltage
Connection Type	Parallel / 24V DC System
Polarity Type	Positive (+) / Negative (-)
Recommended Power Supply	Regulated 24V DC
Dimming System	Compatible with suitable 24V DC Dimming Systems

Optical Specifications	
Beam Angle	140°
Luminous Flux	72LM / Module
Luminous Efficacy	120LM / W (appx.)
Color Temperature (CCT)	10000K, 8000K, 4000K, 3000K
Environmental Specifications	
IP Protection	IP67
Operating Temperature	-30°C to +50°C
Storage Temperature	-30°C to +55°C
Recommended Humidity	10–90% RH, Non-Condensing
Outdoor Application	Suitable
UV Exposure	Suitable for signage applications, subject to material validation
Expected Life	50,000 Hours
Confirm against BNZ internal testing/certification before final publication.	

Optical Performance

The LEDIFY M24 incorporates a 140° wide-angle optical system to provide broad and uniform illumination across the signage face.

Optical Benefits

- Broad light distribution.
- Improved illumination uniformity.
- Reduced visible hotspots.
- Better coverage inside letters.
- Reduced dark areas.
- Suitable for compact channel letters.
- Efficient utilisation of installation space.

Applications

GSB & Sign Boxes

Small 3D Letters

Illuminated Logos

Compact Signage Applications

Architectural Signage

Indoor & Outdoor Signage

Retail & Commercial Signage

3D Acrylic Channel Letters

Aluminum Channel Letters

Front-Lit and Back-Lit Channel Letters

Installation and Illumination

Recommended Installation Principles

- Maintain consistent module spacing.
- Position modules perpendicular to the illuminated face wherever possible.
- Avoid placing modules excessively close to letter edges.
- Maintain appropriate spacing according to letter depth.
- Ensure the VHB mounting surface is clean and dry.
- Apply firm pressure during installation.
- Use a regulated 24V DC power supply.
- Observe correct polarity.
- Use appropriate cable gauge for the total installation load.
- Properly protect all electrical connections from moisture

Module Spacing

- To be finalized after illumination testing.
- Recommended C/C spacing should be established based on actual testing for different letter depths and face materials.

Ultrasonic Construction

The LEDIFY M24 uses an ultrasonic construction technology to provide a robust and consistent module assembly.

Key Benefits:

- Strong housing-to-lens assembly
- Improved resistance to moisture ingress
- Enhanced mechanical integrity
- Consistent module construction
- Improved protection of internal LED components
- Suitable for professional signage applications

Ultrasonic molding / sealing is commonly used in IP67 / IP68 signage LED modules.

IP67 Protection

The M24 is rated IP67, providing:

- 6** - Complete protection against dust ingress.
- 7** - Protection against temporary immersion in water under applicable test conditions.

For outdoor installations,

- Connectors
- Proper sealing of cable joints
- Power supply connections should be properly protected for outdoor installations.

VHB Adhesive Mounting

The LEDIFY M24 incorporates:
VHB adhesive tape for quick and convenient installation.

VHB Tape Benefits:

Fast installation

Strong initial adhesion

Clean appearance

No additional drilling required for suitable surfaces

Convenient positioning inside channel letters

Suitable for smooth, clean and properly prepared surfaces

Vibration and Noise Dampening

VHB Tape Benefits

For best adhesion, the mounting surface should be:

- Clean
- Dry
- Free from dust
- Free from oil and grease
- Free from loose paint or contaminants

For outdoor applications, mechanical fixing may be recommended in addition to adhesive mounting depending on the substrate and installation conditions.

Wiring Configuration

Recommended Connection

- 24V DC Power Supply
- Positive (+) / Negative (-) Distribution
- LEDIFY M24 LED Modules
- Illuminated Signage

Modules should be connected according to the installation layout while maintaining appropriate cable sizing and voltage drop control.

Power Supply Selection

Formula:

Total LED Load = No. of modules x 0.6W

For reliable operation, approximately 20% reserve capacity is recommended.

Example: 100 Modules

$100 \times 0.6W = 60W$

Recommended Power Supply

$60W \div 0.80 = 75W$

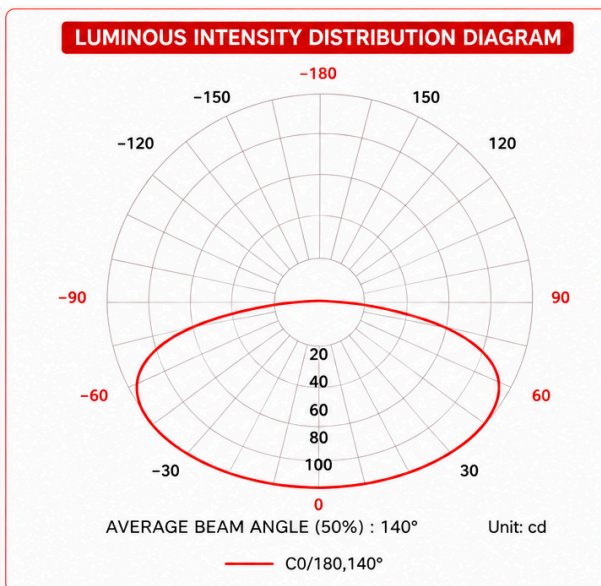
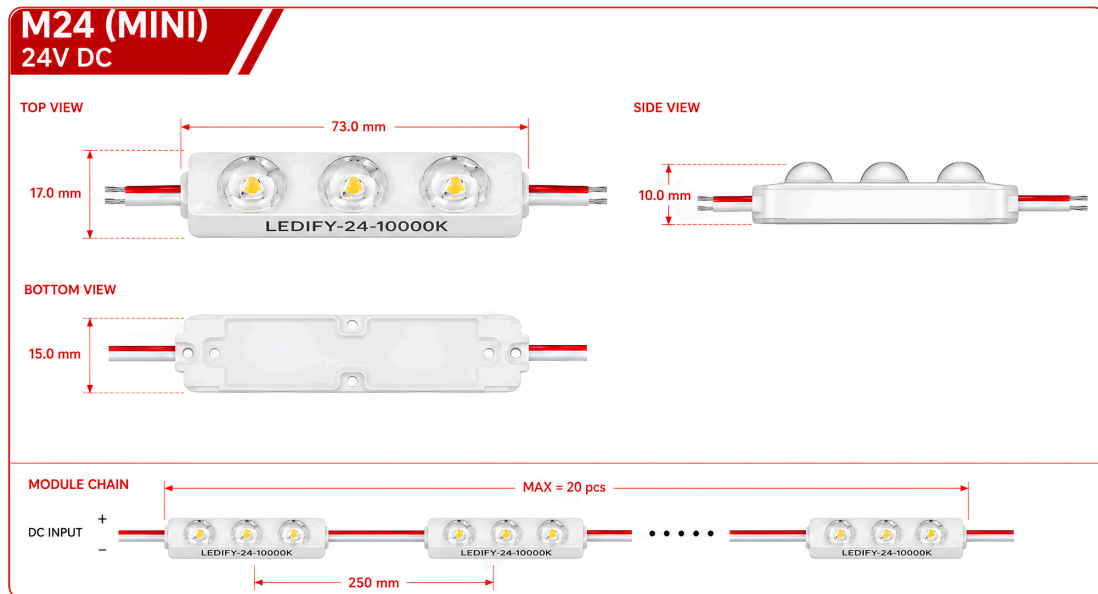
100 M24 Modules → 24V / 175W Power Supply

Power Supply Reference

Modules	50	100	150	200	250	300
Total LED Load	30W	60W	90W	120W	150W	180W
Recommended PSU	40W	75W	120W	150W	190W	225W

Based on approximately 80% maximum recommended PSU loading.

Luminous Intensity Distribution Analysis



AVERAGE ILLUMINATION

Distance (m)	Average Illuminance (lx)	Beam Diameter (cm)
0.2	478	50
0.4	120	101
0.6	53	151
0.8	30	201
1.0	19	252
1.2	13	302
1.4	10	352
1.6	7.5	403
1.8	5.5	453
2.0	4.8	504

Beam Angle : 140°

Wattage 0.6W / Module	Beam Angle 140°	Luminous Flux 72 LM / Module
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Note: The above data is tested with LEDIFY M24 (Mini) Modules at 24V DC. Actual performance may vary depending on installations and signage depth.

Ordering Information

Model	Power	Voltage	CCT / Color	Beam Angle	Output	Mounting	Warranty
M24-10K	0.6W	24V DC	10000K	140°	72LM	VHB Tape	3 Years
M24-8K	0.6W	24V DC	8000K	140°	72LM	VHB Tape	3 Years
M24-4K	0.6W	24V DC	4000K	140°	72LM	VHB Tape	3 Years
M24-3K	0.6W	24V DC	3000K	140°	72LM	VHB Tape	3 Years

*Beam angle should be confirmed from the final optical/lens specification.

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.

Safety and Installation Notes

- Use only a regulated 24V DC power supply.
- Do not connect directly to 220–240V AC.
- Check polarity before powering the system.
- Do not exceed the recommended power-supply load.

- Use appropriate wire gauge according to installation length and total load.
- Ensure the VHB mounting surface is clean, dry and properly prepared.
- Allow adequate adhesion time according to the adhesive manufacturer's recommendations and protect all electrical connections against moisture.
- Avoid excessive bending or mechanical stress on modules and wires.
- Ensure modules are securely mounted before final installation.
- Do not operate outside the specified electrical and environmental limits.
- Final module spacing should be verified through illumination testing on actual sign.

Warnings

- Do not disassemble or retrofit the light. Do not touch the surface of the light with a sharp object and do not use any organic chemical solvents.
- Do not do live-line working during installation especially for high voltage product.
- 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 & Recycling

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



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