



LEDIFY RIGID BAR

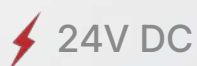
NWP 12W

Model Number: 2412

PREMIUM OSRAM LED CHIPS

GSB | ACP BACKLIT BOARDS

Providing Better Solutions



Product Overview

The LEDIFY **NWP Rigid Bar** is a high-brightness LED lighting solution designed for GSB / ACP backlit boards, sign boxes, and large illuminated signage applications.

Built with premium **OSRAM LED chips** and an ultra-wide **175°** beam angle, it delivers smooth and uniform illumination with excellent light spread, minimizing dark spots and shadow lines in both shallow and deep lightboxes.

The **24V DC** design offers improved voltage stability, reduced voltage drop, and better performance for long signage runs.

Key Features



Premium **OSRAM LED chips** for reliable performance



Stable **24V** constant voltage operation with lower voltage drop



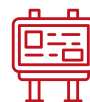
Ultra-wide **175°** beam angle for uniform illumination



High brightness output upto **120LM/W** efficiency



Energy efficient and long lasting LEDs



Suitable for **large signage** applications



2 Years Warranty



Easy installation with screw-fixing



Reduces dark patches and shadow lines

Available Color



6500K

*Other CCT and colors available on request.

Certifications & Compliance



BIS Certified



LM79 Tested

Advantages of 24V DC System

Lower Voltage Drop as compared to 12V DC systems

Longer Series Connection in a single run while maintaining stable brightness

Uniform Illumination with minimal brightness variation

Reduced Current Flow as compared to 12V DC systems which results in, lower heat generation, improved efficiency, and reduced cable stress

Suitable for:

- Large GSB boards
- Long Channel Letters
- Deep Light Boxes
- Long-distance wiring applications

Lower current reduces power loss across cables and connectors.

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

Technical Specifications

Electrical Specifications	
Model Name	LEDIFY Rigid Bar NWP 12W
Model No.	2412
Input Voltage	24V DC
Power Consumption	12W / Module
Power Type	Constant Voltage
LED Chip	OSRAM
Luminous Efficiency	120LM / W
Total Luminous Output	~ 1440LM / BAR
Beam Angle	175°
Color Temperature	6500K
IP Rating	IP20
Maximum Bars / circuit	20 Bars
Mechanical Specifications	
Product Type	LED Backlit Bar
PCB Size	945 x 14.5 x 1.03 mm
Mounting Type	Screw Fixing
Application Surface	GSB / ACP / Metal Box
Contruction Type	Aluminum PCB with housing

Applications and Illumination Guidelines

GSB / ACP Backlit Boards

Recommended Board / Box Depth

Based on ultra-wide beam spread and lumen output:

Minimum Depth	30 mm
Ideal Depth Range	50-120 mm
Maximum Depth	180 mm

The 175° beam angle enables wider spacing and improved light uniformity.

Anti-Shadow Calculation (Recommended Spacing)

Application Depth	Box Depth	Bar / Safe Spacing (C/C)
Shallow GSB Boards	30-50 mm	100-120 mm
Standard Boards	50-100 mm	120-170 mm
Deep Backlit Boards	100-180 mm	170-240 mm
Best Practices		
Use closer spacing for ultra-shallow boxes.		
Maintain uniform layout throughout the board.		
Avoid excessive spacing to prevent black shades.		
Wide beam design allows fewer bars in deeper boxes.		

Recommended Wiring Layout

Connection Method
Daisy-chain connection
Maximum 20 bars / PSU output
Power feed from one direction only
Typical Wiring Layout [24V DC PSU] Up to 20 Bars

Installation Tips
Keep wire routing clean and uniform
Avoid unnecessary wire looping
Use parallel circuits for larger signage
Ensure proper ventilation inside the box

Power Supply Recommendation

Power per bar = **12W** and Bars per circuit = **20 PCS**

Total Load, 20 x 12W = **240W**

Recommended PSU Capacity: **24V 300W or higher**

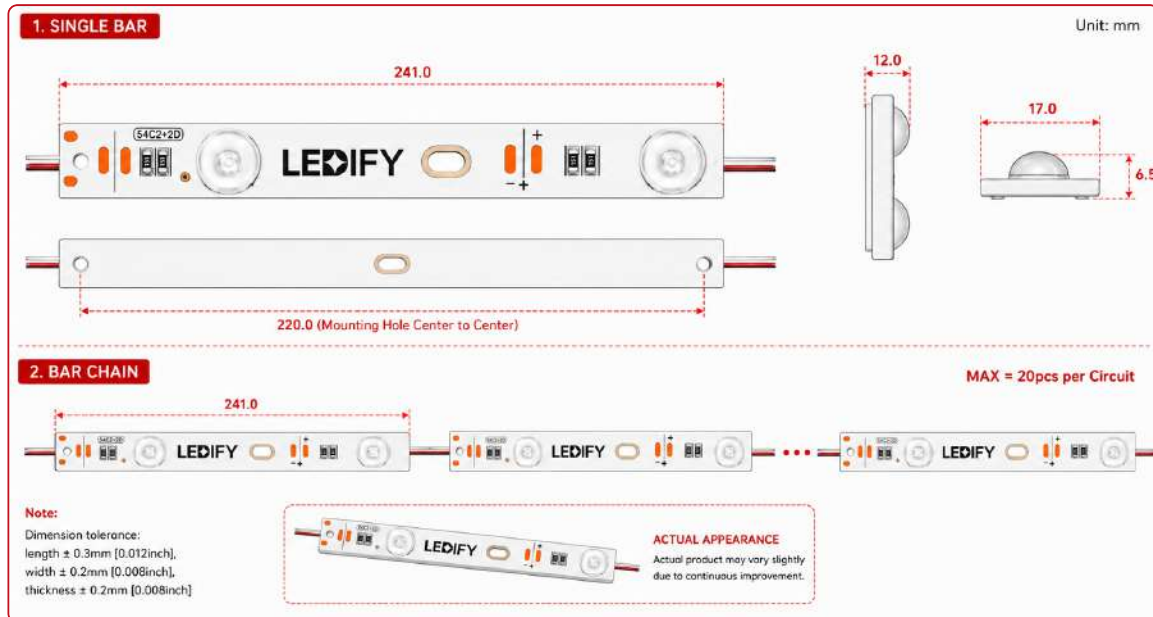


Important:

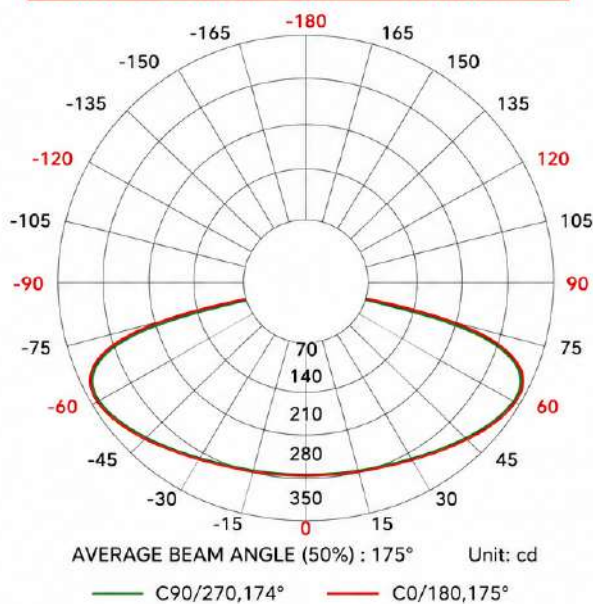
Use multiple power supplies or separate outputs for large signage systems.

For longer PSU lifespan, maintain loading within 80% of rated PSU capacity.

Luminous Intensity Distribution Analysis



LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE ILLUMINATION

CCT = 6500K

Distance	Average Illuminance	Beam Diameter
0.2m	1146 lx	57.2 cm
0.4m	286 lx	114.4 cm
0.6m	127 lx	171.6 cm
0.8m	72 lx	228.8 cm
1.0m	46 lx	286.0 cm
1.2m	32 lx	343.2 cm
1.4m	23 lx	400.4 cm
1.6m	18 lx	457.6 cm
1.8m	14 lx	514.8 cm
2.0m	11 lx	572.0 cm

Beam Angle : 175°



Luminous Flux:
1440 lm / Bar



Beam Angle:
175°



Wattage:
12W / Bar

Note: The above data is tested based on BNZ Rigid Bar 2412 Series (24V DC – 12W) at 6500K.
 Actual performance may vary depending on installation conditions.

Packaging Details

Packaging Type	Quantity
Master Box	500 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 constant voltage power supplies.
- Do not exceed 20 bars per circuit.
- Follow recommended spacing to prevent dark spots.
- Suitable for indoor signage applications.
- Ensure adequate heat dissipation and ventilation.
- Do not overload power supplies.
- Installation should be carried out by trained technicians.
- IP20 rated, recommended for dry indoor use.

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



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