BNZ BRITE

2W LED MODULE

HIGH OUTPUT EFFICIENCY

GSB SIGNAGE | CHANNEL LETTERS

Providing Better Solutions

DC 12V IP45 210 LM 160°

BRITE 2W

Product Overview

BNZ DIRECT 2W is a high-voltage 220V AC LED module designed for direct connection without external drivers, making installation faster & more cost-effective.

With a wide 160° wide beam angle, it delivers broad and uniform light distribution, ideal for signage, backlighting, and architectural lighting applications.

The module features a compact injection-molded design, ensuring durability and consistent performance in both indoor and outdoor environments.

Key Features

- High Brightness Output **210 LM** per module
- Wide **160°** beam angle for better coverage
- **Compact** Design for easy installation
- **IP45** Waterproof Construction
- **1-Year** Warranty
- **2W** Low Power Consumption
- Suitable for **Medium & Deep Letter Applications**
- Optimized **140mm** (C/C) Spacing

Available Colors

12000K

3000K

Red

*Other CCT and colors available on request.

Applications

GSB
Signage Boards

Acrylic Channel
Letters

Medium to Deep
Letter Applications

Electrical Specifications

Parameter	Specification
Power Consumption	2W / module
Input Voltage	220V AC
Luminous Output	180-200 Lumens / Module
Beam Angle	160°
IP Rating	IP65
Operating Type	Constant Voltage (Direct AC)
Driver Requirement	Not required
Warranty	1 Year

Mechanical Specifications

Parameter	Specification
Module Dimensions	68 x 15 x 7.5 mm
Recommended Spacing	120-160 mm Centre-to-Centre (C/C)
Housing Type	Injection Molded, Sealed
Mounting	Adhesive Tape / Screws

Spacing refers to center of lens to center of next module.

Illumination Calculations

Letter Depth	Recommended Module Spacing
80-110 mm	130-140 mm (C/C)
110-140 mm	120-130 mm (C/C)
140-170 mm	100-120 mm (C/C)

160° beam provides better overlap making it suitable for slightly deeper boxes compared to 140° modules.

Recommended Wiring Layout

Maximum 20 modules per series connection.

Inject power every 20 modules.

Use minimum 18AWG (0.75 sqmm) cable.

Keep PSU-to-module wire under 2 meters.

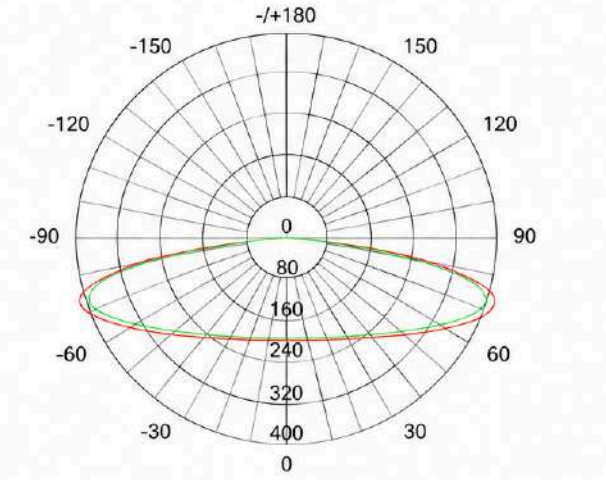
Maintain correct polarity. (+ / -)

Connect load first, then power supply.

For **Large Signage,** use parallel injection wiring to avoid voltage drop.

Luminous Intensity Distribution Analysis

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE ILLUMINATION

CCT = 10000K

Height	Average Illuminance	Beam Diameter
2cm	782.6 lx	55.41 cm
4cm	195.6 lx	110.83 cm
6cm	86.9 lx	166.24 cm
8cm	48.9 lx	221.66 cm
10cm	31.3 lx	277.07 cm
12cm	21.7 lx	332.49 cm
14cm	15.9 lx	387.90 cm
16cm	12.2 lx	443.32 cm
18cm	9.6 lx	498.73 cm
20cm	7.8 lx	554.15 cm

Height Eavg, Emax Beam Angle: 158.0° Diameter

Wattage: **2W / module**

Beam Angle: **158°**

Luminous Flux: **198 lm / module**

Power Supply Wattage Calculation (With 20% Margin)

Formula:

Total Watt = Number of Modules x 2W

Example:

If 100 Modules are used:

120 x 2W = 240W

Ensure wiring and MCB capacity match total load.

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 regulated 12V DC power supply.
- Do not exceed 20 modules in one series chain.
- Seal all exposed joints properly.
- Avoid voltage drop in long runs.
- Test illumination before acrylic fitting.
- Installation should be performed by trained technician.

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 (0.75mm^2 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