

# Bright Green Matrix™ Standard - Installation Guide

Version: 2 06/04/10

Applies to part numbers: MS-S50XX-310, MS-S50XX-610, MS-S50XX-910, MS-S50XX-1210, MS-S50XX-1510, MS-S50XX-1810

MS-D50XX-310, MS-D50XX-610 MS-D50XX-910, MS-D50XX-1210, MS-D50XX-1510, MS-D50XX -1810

MB-S, MB-D

P1-30-24, P1-60-24, P1-100-24, P1-150-24, P1-240-24

Available for download at: [www.brightgreentechnology.com](http://www.brightgreentechnology.com)

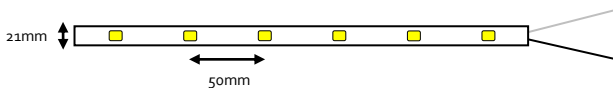
### Tools required for install:

- Drill
- Screwdriver
- Pliers
- Tape measure

### Components required for install:

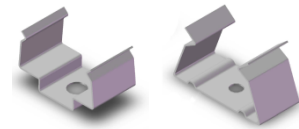
- Bright Green Matrix sticks
- 14-18AWG or equivalent cable and 14-18AWG T-splice connectors or alternatives
- Gel filled connectors or alternatives
- Brackets and fasteners
- BGT power supplies and M4 fixing screws

### General stick layout



The white cable tail is 24V positive

### Fixing brackets



### Procedure:

#### 1. Plan layout

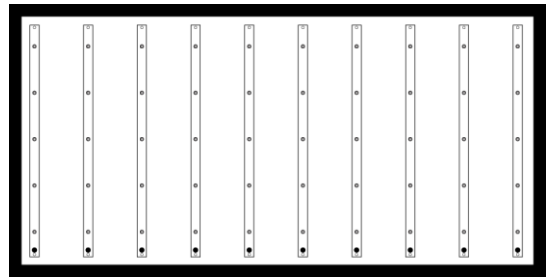
Bright Green Matrix™ is designed for flexibility; there are a number of ways to configure a given sign. Whilst the spacing of the LEDs in each stick is set at 50mm, other variables can be configured to achieve the display qualities required:

Variable	Effect
Combination of stick lengths to use	Installation time, cost
Separation of sticks	Brightness, power use, image quality
Configuration – horizontal/vertical	Installation time, image quality
Distance between the sticks and the graphic face	Image quality
Grouping of power supply connections	Installation time, number of supplies required
Location of power supplies	Installation time
Diffuser/print material	Brightness, image quality

Typical layouts:



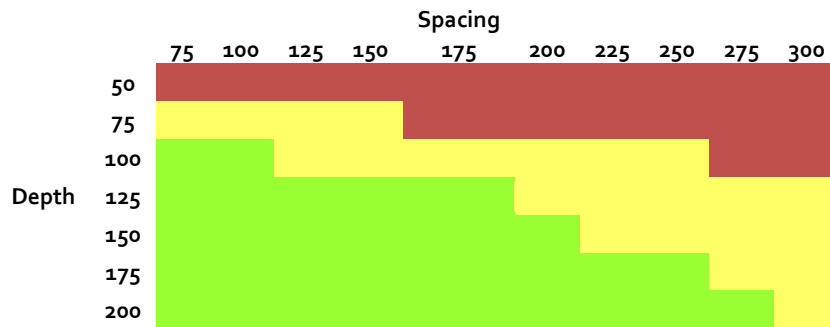
Horizontal array at 150mm spacing  
5 x 1210 sticks



Vertical array at 150mm spacing  
10 x 610 sticks

As a guide, optimum quality is achieved when the stick separation is the same as the box depth i.e. a 200mm deep box with sticks installed at 200mm spacing. It is often possible to reduce the stick density – a trial should be used to establish the exact layout for a project. Use the chart below to plan the stick density:

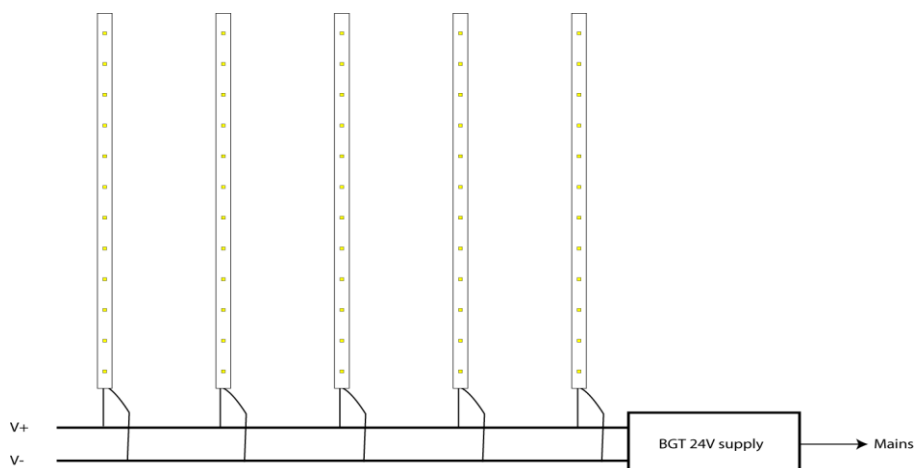
Red zone: not sufficient for even lighting. Yellow zone: test recommended. Green zone: diffuse illumination. Dimensions are in mm.



2. Install Bright Green Matrix™

Bright Green Matrix™ can be fitted directly to the back of the sign or mounted on brackets.

- Fix the supplied brackets into position
- Locate the sticks into the brackets
- Alternatively, use the adhesive pads. The pads are pressure sensitive and all surfaces should be degreased before application
- Connect the cable tails to 14-18AWG supply cables using T-splice connectors or alternatives, ensuring the polarity is correct.
- The **white** cable tail is 24V positive



### 3. Electrical connection

**Bright Green Matrix must not be connected directly to mains power.**

Bright Green Matrix operates at 24V DC via an AC/DC power supply. Sticks should be grouped and connected to a BGT power supplies using the recommended maximum output settings.

Code	Power draw	Recommended maximum number of sticks per power supply				
		1 stick	BGT-P30-24	BGT-P60-24	BGT-P100-24	BGT-P150-24
<b>Single</b>						
MS-S50XX-310	2.4W	11	22	38	57	90
MS-S50XX-610	4.8W	5	11	19	29	45
MS-S50XX-910	7.2W	3	7	12	19	30
MS-S50XX-1210	9.6W	2	5	9	14	22
MS-S50XX-1510	12W	2	4	7	11	18
MS-S50XX-1810	14.4W	1	3	6	9	15
<b>Double</b>						
MS-D50XX-310						45
MS-D50XX-610	9.6W	2	5	9	14	22
MS-D50XX-910	14.4W	1	3	6	9	15
MS-D50XX-1210	19.2W	1	2	4	7	11
MS-D50XX-1510	24W	1	2	3	5	9
MS-D50XX-1810	28.8W	-	1	3	4	7

Power supply code	Maximum output	Recommended maximum
P1-30-24	30W	27W
P1-60-24	60W	54W
P1-100-24	100W	90W
P1-150-24	150W	135W
P1-240-24	240W	216W

#### Connecting sticks in sets:

Several sticks can be connected together in sets with one connection to the 24V power supply. This method saves installation time and can simplify cabling. If this method is used, the total length per set **must not exceed 4 meters (2 meters for double sided)**.

Recommended procedure:

- Fasten the power supply into place within the sign
- Ensure that all sticks are connected to the supply cable
- Connect the supply cable to the DC output of the power supply using gel filled (or compatible alternative) connectors
- Connect the AC input of the supply to the mains, ensure all mains voltage procedures are followed
- Test and complete sign build

## Troubleshooting

Symptom	Action
No illumination	Check mains supply Check power supplies and connectors
Group of sticks not lit	Check power supply and connectors to group
Individual stick not lit or flickering	Check connectors to stick Check power supply output voltage
1 LED not lit	Replace stick
Low illumination	Check allocation of power supplies

## Contact and Support

For further support, contact your distributor or email [support@brightgreentechnology.com](mailto:support@brightgreentechnology.com)

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Bright Green Matrix™ is patent pending



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Bright Green Technology Limited  
6 Forge Lane  
Richmond  
TW10 7BF, UK  
[brightgreentechnology.com](http://brightgreentechnology.com)