

INFINIBAR Multi-Light Connection Instructions

Features and Accessories

INFINIBARs are designed with features that allow users to securely connect multiple units in a vast combination of different lengths and shapes.

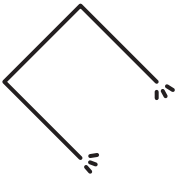
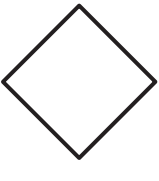
Power pass-thru feature

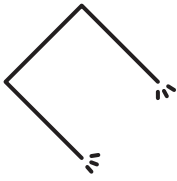
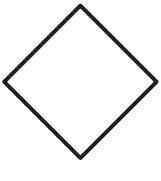
Each INFINIBAR has three 5.5mm barrel type DC ports, which can be used for not only charging/powering the light but also for passing the DC power through to additional INFINIBAR(s).

This will be achieved by using INFINIBAR Connectors with built-in wiring in most cases.

While it is possible to create massive lighting effects with intricate patterns made of infinite number of INFINIBARs, there is a few rules that need to be followed due to the maximum electric power load that the 5.5mm barrel type DC ports are capable of and the line loss.

INFINIBAR Power Adapter options and max. possible number limitations

INFINIBAR 48W Power Adapter			
OPEN Connection		CLOSED Connection	
			
MAX. Possible #		MAX. Possible #	
PB3	4	PB3	4
PB6	2	PB6	N/A
PB12	1	PB12	N/A

INFINIBAR 330W Power Adapter			
OPEN Connection		CLOSED Connection	
			
MAX. Possible #		MAX. Possible #	
PB3	11	PB3	20
PB6	9	PB6	13
PB12	6	PB12	8

There are two INFINIBAR Power Adapter options to choose from: 48W that comes included in every INFINIBAR single light kits, and 330W large capacity unit that are sold separately.

OPEN Connection:

This is where multiple INFINIBARs are connected using INFINIBAR Connectors or 5.5mm barrel type extension/jumper cables and not form a closed power loop.

The reason why the maximum possible number of each INFINIBAR model is specified to be lower than those possible in a "CLOSED Connection" is to ensure the resulting light array will be powered appropriately regardless of which DC port the Power Adapter is plugged into.

The 5.5mm barrel type connectors have a limit in terms of how much electric power load they can handle, and some additional headroom needs to be added to ensure safe operation of INFINIBARs and anticipate line losses.

This determines the the maximum number of INFINIBAR PB12, PB6 and PB3 connected in a series from the point of power feed to be 6, 9, and 11 for the 330W Power Adapter even when the Power Supply being used to power them has more power available.

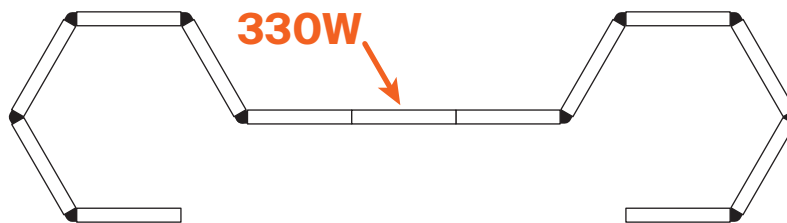
Each INFINIBAR has built-in batteries and users can connect any number of PB3, PB6, and PB12 producing output from the batteries. These numbers specify how many INFINIBARs can successfully be powered/charged by the 330W AC Power Adapter when connected together. Once the limitation is exceeded, units that cannot be powered properly by the Power Adapter(s) will switch to their internal batteries to draw power from.

These are the maximum possible numbers in a single direction, However. Users can achieve the same maximum possible number of units as the “CLOSED Connection” listings, if the power feed is being made on the units that is in the middle of the entire connection.



9x PB6

(connected with 2x Straight Connector
and 6x Hexagon Flat Connectors)



13x PB6

(connected with 2x Straight Connectors
and 10x Hexagon Flat Connectors)

In the example illustrations above for instance, although the same 330W Power Adapter is used to power a multi-light array made of INFINIBAR PB6s, the setup on the top can only support 9 lights successfully because the Power Supply is plugged in at the end of this OPEN Connection. It is possible to support 13 lights like specified in the “CLOSED Connection” listings of the information table above using the same 330W Power Adapter although this setup is an OPEN Connection, if the user ensures the power feed is made at the PB6 that is in the middle of the array.

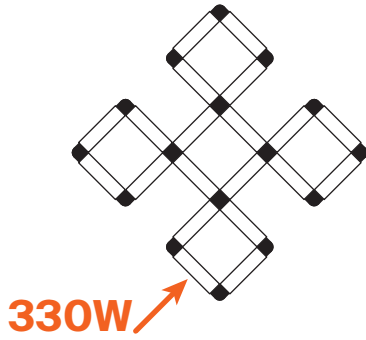
It is easier to follow the maximum possible number listings under OPEN Connection columns in the info table if large arrays of multiple INFINIBARs beyond the specified numbers are required, because those are the numbers that will produce successful power delivery regardless of where the power feed is made.

CLOSED Connection:

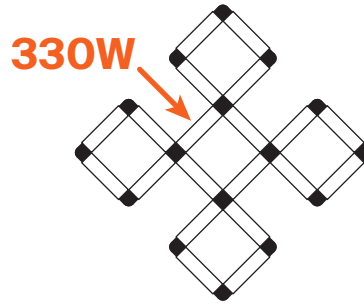
This is where multiple INFINIBARs are connected using INFINIBAR Connectors or 5.5mm barrel type extension/jumper cables and form a closed power loop.

In a fully closed power loop, the maximum possible numbers of INFINIBARs that can be powered by the 330W Power Adapters increase because the DC power being fed can travel to opposing directions for optimum power distribution.

As shown in the example illustrations below, in a fully closed power loop, the power feed can be made on any of the lights in a given array. It is still important to refer to the “MAX. Possible #” in the information table to ensure successful power delivery.



20x PB3
 (connected with
 4x 4-Way Connectors and
 12x Square Flat Connectors)

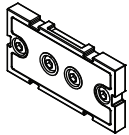


20x PB3
 (connected with
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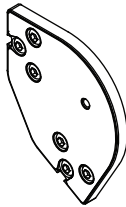
INFINIBAR Connectors

Flat Connectors:

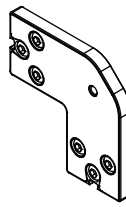
These are Connectors with internal wiring so users can easily and securely establish connections of multiple INFINIBARs in a straight line, at a 60° angle, a 90° angle or a 120° angle.



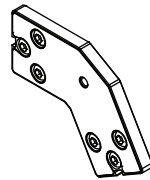
Straight Connector



Triangle Flat Connector



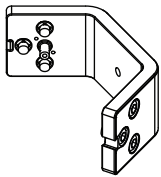
Square Flat Connector



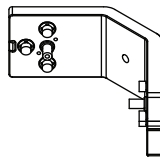
Hexagon Flat Connector

3D Connectors:

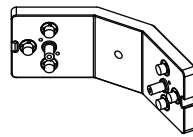
These also have internal wiring for the power pass-thru feature, and allows the connected INFINIBARs to be facing perpendicular (inwards) compared using the “Flat” connectors.



Triangle 3D Connector



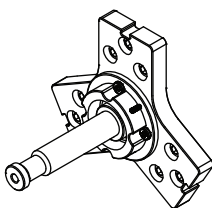
Square 3D Connector



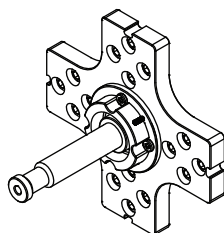
Hexagon 3D Connector

Center split Connectors:

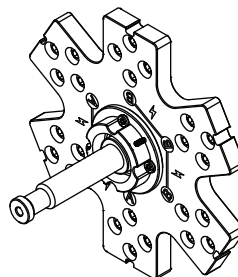
These connectors enable users to connect multiple INFINIBARs stemming from the same center point, also with the power pass-thru function. The integrated rotating baby pin can be used to create spinning lighting effects or fixed in position for rigging purposes.



3-Way Connector



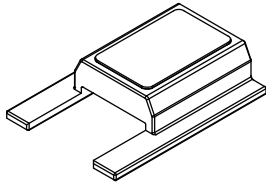
4-Way Connector



6-Way Connector

INFINIBAR Magnetic Spacers

An accessory that can be extremely useful in multi-light arrays that involve not only PB6s and PB12s but also PB3s is the INFINIBAR Magnetic Spacer that are provided with every PB6s and PB12s.



Because PB3s are much shorter in length compared to the other two models, they had to be designed a little bit taller to accommodate the internal batteries. The INFINIBAR Magnetic Spacer enables users to make the overall height of the multi-light arrays involving PB3s uniform so the entire setup can be attached flush with the magnetic feet.

INFINIBAR power factors

Users are not limited to using only one model of INFINIBAR to create their multi-light arrays. When combining different models of INFINIBARs in multi-light arrays, please refer to the power factors specified in the information table below.

INFINIBAR Power Factors	PB3	PB6	PB12
Max. Power Consumption w/ Line Loss - OPEN Connection	28W	35W	50W
Max. Power Consumption w/ Line Loss - CLOSED Connection	16W	25W	40W

If 4x PB3s, 3x PB6s and 2x PB12 are being used in an OPEN connection setup for example, the total amount of power required would be:

$$4 \times 28 + 3 \times 35 + 2 \times 50 = 317$$

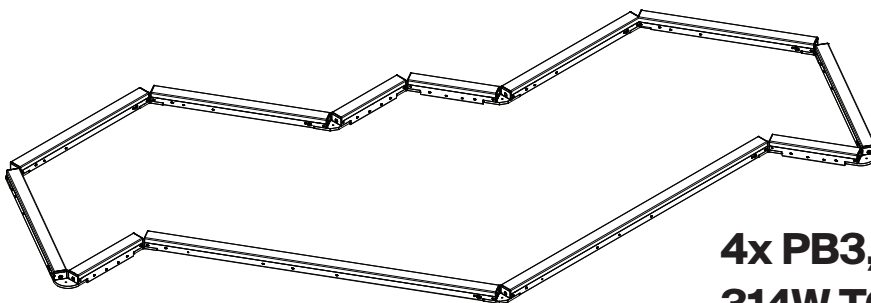
This means the 330W Power Adapter can successfully power this setup.

Note: these values are verified to be safe when Power Adapters, Jumper Cables, and Extension Cables provided by Aputure are used. A safe, stable operation cannot be guaranteed if other cables are used.

Real-world examples

Mixing different INFINIBAR models in light arrays:

Using the INFINIBAR power factor formula, users can determine if the setup they have in mind can be handled by the 330W Power Adapter.



**4x PB3, 6x PB6, 2x PB12:
314W TOTAL**

**(connected with 2x Triangle Flat Connectors,
and 10x Hexagon Flat Connectors)**

1x PB3, 6x PB12: 328W TOTAL
(connected with 6x Hexagon 3D Connectors,
and 1x Triangle 3D Connector)

