

IllumiTile™

Quick Start Guide

Revision 1.5.0



INNOVATIVE ILLUMINATION

Get more information at

www.IllumiSci.com

Safety, Handling, & Support Important Safety Information Do Not Skip This!

WARNING:

Failure to follow these safety instructions could result in fire, electric shock, other injuries or damage to IllumiTile, system components or other property. Read all the safety information below before using. Read this entire Quick Start Guide and the IllumiTile Full User Guide prior to using this or any other IllumiSci product.

Download the Full IllumiTile User Guide at www.illumisci.com, or request it to be sent to you from IllumiSci.

Basic Handling & Installation Considerations

Handle IllumiTile™ and other IllumiSci products with care. They work using electricity and are sensitive to metal, glass, and plastic and have sensitive electronic components in or on them. They can be damaged if dropped, burned, punctured, or crushed, or if they come in contact with liquid.

Repairing

Do NOT attempt to repair any IllumiSci products yourself. Doing so could cause the item to become unsafe. Any service or repair should be done by IllumiSci only.

Overloading

Be sure not to overload the circuits of IllumiSci products, short the IllumiFlex LED strips or any other part of the circuit. Determine the proper load as specified for each product. Do not use IllumiSci products if you do not have at least a basic understanding of electricity and what understand what overloading (excessive current) means. A maximum of 5 Amps at 12VDC can be passed through an IllumiTile circuit.

Heat, Cold & Moisture

Do NOT expose to excessive heat (>100°F), cold (<45°F) or any moisture/liquids. IllumiSci products are not for outdoor use.

Ventilation

Be sure that IllumiSci components have proper ventilation so that they do not overheat. IllumiSci products should have ample ventilation to room temperature air (64 degrees F or 18 degrees C). Consider and accommodate this thermal requirement when using or installing them.

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Metal & Conductive Material

Keep metal and conductive materials not intended to be in the circuit away from IllumiSci products since they can cause a short-circuit and damage the product, cause bodily harm or property damage.

Use Around Some Equipment or Environments

Do NOT use IllumiSci products around medical equipment, explosive atmospheres, such as at a fueling area, or in areas where the air contains chemicals or particles such as grain, dust, or metal powders. Do NOT use around equipment sensitive to radio frequency, electromagnetic or electrical equipment. Do NOT use for high-consequence activities where failure could lead to death, personal injury or environmental damage. Do NOT use where children can access IllumiTile™ or any system components.

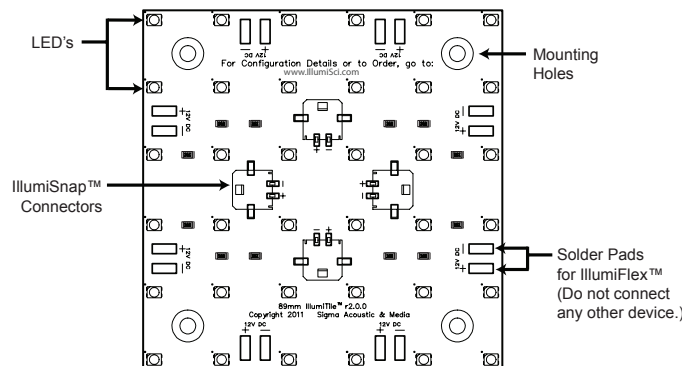
Please contact IllumiSci with any questions about any of these or other issues of concern prior to using any IllumiSci products.
e-mail: info@IllumiSci.com Phone: (310) 953-8807

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IllumiTile™ at a Glance

Congratulations on your purchase of this IllumiSci product!

IllumiSci provides you with innovative products that make lighting your project simple.



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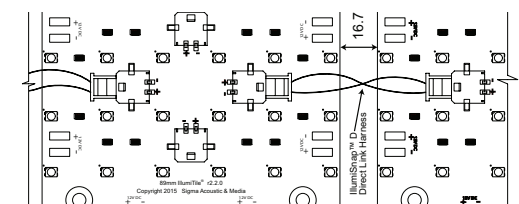
How to Connect an IllumiTile™ Array

Step 1 - Arrange & Connect Your IllumiTile Array

Connect one IllumiTile™ to the next (known as a "daisy-chain"). Note that the "first" IllumiTile™ in the array is the one to which you plan to connect power.

Typically you should not cross link in your IllumiTile™ array, except from the first to the last with larger arrays. A cross-link may be necessary when arranging an array of more than 12 IllumiTile™ (See next step for details.)

Note that the number of IllumiTile™ in an array is limited to a maximum of 5 Amps. Current draw for arrays beyond 12 IllumiTile™ devices should be assessed with a IllumiTile™ Analyzer or MultiMeter to be sure that an excessive load is not present. Overloading will cause damage to your IllumiSci™ products or other system components.



See reverse of this page to continue.

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How to Connect an IllumiTile™ Array

Step 1 (continued)

Arrange & Connect Your IllumiTile Array

Maximum Number of IllumiTile's Interconnected

If your application requires a larger array of IllumiTile's, then you must consider the optimum number of IllumiTile's to be used on a single power supply. The maximum number of IllumiTile's that can be used in a single circuit array is between 20 and 55, the specific number depends on the configuration and harness connectivity.

The total power requirement of the configured array load should not exceed the total wattage of the UL listed 60W Class 2 Power supply.

Prior to installation of the array, the actual, completely configured array load should be measured and matched to the total power rating of the power supply that has been derated by 10% to 20%. Use only a UL certified, Class 2 power supply that does not exceed 60W for a single circuit array. This means that the maximum usable power rating of a 60W power supply would be between 54W (10% derating from 60W) to 48W (20% derating from 60W), so the total measured load should be no more than the desired derated power rating. Use a 10% derating for common to moderate thermal conditions, or use 20% rating for more extreme (>30°C or <10°C) thermal conditions. Contact IllumiSci for more details on system configuration or derating a power supply for proper use.

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Specifications

Operating Voltage:
12VDC (+/- 0.5V)

Current:
250mA (nominal)
per IllumiTile™

Current & Power Limit per Circuit: IllumiTile light engines SHOULD ONLY BE USED WITH A UL LISTED CLASS 2 POWER SUPPLY. THE TOTAL WATTAGE FOR INTERCONNECTING UNITS SHALL NOT BE MORE THAN THE RATING OF THE UL LISTED CLASS 2 POWER UNIT.

IllumiTile should NOT be used with Power supplies/Drivers over 12V, 5A (60W) per circuit. 5 Amp max per circuit (a larger illumination array beyond a two Amps (2A) load may require cross-linking with IllumiSnap™ harnesses for even distribution of light /load.)

Power: <= 3 Watts per IllumiTile
(Note that IllumiSnap Harnesses consume some current in the array.)

UL LISTED: IllumiTile light engines are UL Listed, File E480094
For UL required applications, only IllumiSci UL approved harnesses may be used for power connection and inter-connectivity. Please inquire with IllumiSci for details.

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Additional Step for Over 12 IllumiTile™ Arrays

Step 2 - Connect the Last IllumiTile™ to the First

"Fall-off" occurs when the emitted light from each consecutive IllumiTile™ is more dim due to the progressive resistance from device to device. This is a natural electrical phenomenon due to the added resistance of each, and may become more significant as each IllumiTile™ is added to a larger array beyond about 12.

To balance the electrical load and balance the light emitted, the last IllumiTile™ should be linked to the first. Only use an IllumiSnap™ harness to do so. (Custom lengths are available.) As simple as the IllumiSnap™ harnesses might appear, they are designed to have a specific build and conductivity. Due to this, do not cut, extend or splice an IllumiSnap™ harness unless directed to do so in an IllumiSci User Guide or by an IllumiSci.

Cross-linking tiles distributes current, improves thermal management, and provides more even emittance of light across an array. However, cross-linking does cause more of a load and draws more current. Cross-linking should be done only when needed.

Mounting IllumiTile

Use #8 screws, through the mounting holes, to secure IllumiTile's to a surface. Be very careful to not over-tighten the screws as doing so will damage the IllumiTile and void the warranty. If mounting to a heat-dissipative surface or material, thermally conductive pads are available from IllumiSci, may be used for increased heat dissipation.

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Specifications (continued)

Dimensions:
(Length 3.5" X Width 3.5" X Height 0.32")
Length 89mm X Width 89 mm X Height 8mm

Light Output:
260 Lumens per IllumiTile (Average)

Efficacy: 87 Lumens/Watt

CRI (Ra): >80 and >90 per request

Beam Angle: 120 Degrees

Diffusion Distance:
Sufficiently diffused with most types of 0.25" (1/4 in.) diffusion material at one inch (26mm) from the top of the LED's.

Thermal Management:
Small Arrays (<10 qty.) per circuit may use convection cooling /open to ambient air at approx. 25C.
Large Arrays (>=10 qty) per circuit may require a forced air cooling (fans) depending on encapsulation or orientation.

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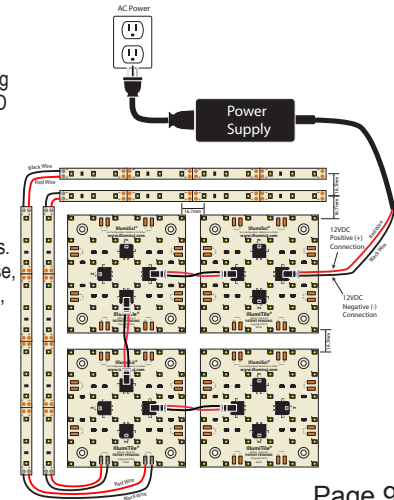
How to Connect IllumiFlex™ to an IllumiTile™ Array

Step 3 - Connect IllumiPower™

Connect the IllumiSnap™ connector of the IllumiPower™ power supply. Only use IllumiPower™ power supplies, or ones approved by IllumiSci as a power source for an IllumiTile™ array. A power supply configured to work specifically with IllumiSci™ products is very important for safety and reliability.

Brightness of an array can be adjusted with IllumAdjust™ dimming products. Use IllumAdjust™ only for adjusting the brightness of IllumiSci LED arrays, not motor control or other uses.

Connect only IllumiFlex™ LED strips to IllumiSnap™ connectors or to solder pads. DO NOT connect anything else, such as other types of lighting, motors, etc. as doing so will cause damage to IllumiSci products.



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Specifications (continued)

Color Temperatures (CCT) (+/- 2000k per designation):
2800k Warm White
4500k Neutral White
6000k Daylight white
(Single bin color rendering available upon request.)

Operating Life: At Room Temperature of 40,000 Hours (nominal)

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