

DL-FLEX-UP-RGB Indoor LED Tape

What is it used for?

The simple answer to that question today is “almost anything”. JESCO Lighting was one of the first lighting companies to bring this type of product to the US market – we originally intended it to be used for display cases and also for cove lighting. Today [DL-FLEX-UP-RGB](#) Indoor LED tape is used for a million applications – anything where a vanishingly small and very bright source of light is needed. The most common uses remain under/above cabinet, cove and display case illumination. We have created an impressive range of accessories to support code-compliant installation all of the different uses that this product can have. If you have an idea for a novel lighting use, this product line will allow you to achieve it.

What is unique about it?

Unlike traditional lighting, the [DL-FLEX-UP-RGB](#) flexible LED tape can be made to change color without gels and can do so very simply.

DL-FLEX-UP-RGB requires control equipment to change color. Control can range from something as simple as a contractor-installed switch – used to select between single Red, Green and Blue colors or any combination of the three – on up in complexity through to sophisticated digital remote control systems which fade and roll color.

Using JESCO RGB control systems you can alternately dial in a color or select a series of colors in turn – up to 16 million colors are available from JESCO RGB controller systems. Color changes can range from seconds through days in length. Depending on the selected control system you can change color locally, remotely- by wireless radio frequency - or even via the internet or your smart phone. (Internet / smart phone with the assistance of your local digital systems integrator and using JESCO DMX control equipment).

Turning on all colors (R+G+B) on at once produces cool white – at about 10,000 degrees Kelvin color temperature.

The important differences between JESCO DL-FLEX-UP-RGB and other similar-looking products are as follows:

- 1) **UL listing** – We have several installation options specifically aimed at US residential and commercial NEC code compliant specifications (DL-FLEX-RGB is UL Listed to UL 2108, low voltage lighting).
- 2) **Product design** – JESCO has the highest quality LED sources of our own specification. Our unique plug-connected DL-FLEX system simplifies installation and is a favorite with installers across the country.
- 3) **Accessories** – JESCO offers a deep line of [accessories](#) with contractor hardwire and plug-connected installation options, mounting channels and light control accessories all intended to simultaneously satisfy the designer, the installer and the electrical inspector all while pleasing the owners bank account and eye.
- 4) **Depth of line** – With DL-FLEX JESCO has created the widest variety of options in the industry for lighting power, lighting color, power supply type and lighting control means – a set of specifications much copied but rarely equaled.

Reliable, sophisticated, installation-friendly and code-compliant. All of which add up to a turnkey product line that remains the industry leader today.



What is the standard operating voltage for the DL-FLEX-RGB?

24 volts DC is the standard operating voltage for the product line. For the DL-FLEX-RGB system we recommend our [DL-PS-xx/24](#) series of power supplies. Refer to the specification sheets for JESCO's DL-PS line of LED power supplies and drivers for more information.

Typically the necessary power supply will install on a single 15 or 20 Amp circuit.

24V power distribution was selected in order to render the longest, brightest and most consistently lit fixture runs while at the same time complying with the complex UL and NEC code restrictions you will come across on job sites.

JESCO DL-PS power supplies can operate at 120 volts, 277 volts and other European and international power utility company supply voltages. Many of our DL-PS plug-connected power supplies also have the ability to accept world-market power cords (by others) permitting operation in multiple territories with one single product – one product for the entire world in other words.

What is the maximum run length possible using DL-FLEX?

For our DL-FLEX-UP-RGB, the maximum continuous installed run length is 20 feet per each home run to a power supply.

To extend that run indefinitely, a [LC-200-RPT](#) 3 channel signal repeater can be utilized between every 15 feet of run. Note: an additional independent power supply is required for each LC-200-RPT.

Is there a minimum installed run length for the DL-FLEX series?

4" is the minimum length that can be purchased from JESCO. Please note that our DL-PS electronic power supplies do not have a minimum load requirement but our DL-PS magnetic power supplies do. Please check the specification sheets for the exact requirements of the chosen power supply.

Can I cut the DL-FLEX-RGB tape?

What can I do if I need less than the standard 12" segment to complete a run?

Typically installed runs are made up of 12" segments which are all plugged together. For odd run lengths, one single 12" section can be cut to size (in 4" increments) and added at the end of the run in order to fill in any remaining gap left in the available mounting space. All the DL-FLEX-RGB tapes have cutting lines clearly marked every 4". Cutting elsewhere on the tape will cause it to not function properly. Cut pieces cannot be joined.

How can I connect lengths around obstacles?

Do you have a jumper cable?

To get around obstacles we offer flexible mid-connectors in lengths of 6" ([DL-FLEX-RGBCC6](#)) and 12" ([DL-FLEX-RGBCC12](#)). Connectors are typically used to create unlit sections and/or to jump power around obstacles or through walls. JESCO has set up its power supply and fixture UL listings to permit Class 2 power feeds to go through walls, etc. using our jumpers as well as contractor-created hardware jumpers – consult your electrical contractor or authority having jurisdiction for the exact regulations in your locale. All the cables within the JESCO DL-FLEX system can be interconnected and you can use multiple connector lengths together to achieve a certain distance.



How do you connect the DL-FLEX at right angles?

We offer the [DL-FLEX-RGB-X-C](#) connector which has 4 connections, at 90 degree angles, forming an “X”. This same X connector can be field-cut with scissors to form “T” and “L” shaped connections much like a traditional track system - all from that from the same base part.

Can I bend the DL-FLEX-RGB when mounting it?

Yes you can. The flexible tape can be bent to most curved surfaces. For bends of 90° or more, the bends should be done at the cutting marks (found at each 4” increment) so as to not affect the LED chip.

How do I mount the DL-FLEX?

The DL-FLEX comes standard with a high strength, 3M™ tape backing. Just peel the tape cover off the back and firmly apply to any smooth, clean, dry surface categorized as having a high surface energy. For surfaces that don't meet that requirement, use our optional mounting channel.

Why do you offer an optional mounting channel?

The [DL-FLEX-CH6](#) mounting channel furnishes a “finished” look to a visible installation. Although not a must-have, the field-cuttable, 6’ mounting channels do provide a perfect surface for attaching the tape on installations where the mounting surface found at the jobsite is not smooth, clean, dry and/or categorized as not having a high surface energy. The channel also offers protection to the LEDs during, for instance, cleaning of lighting coves and/or from the prying fingers of visitors.

To provide a completely finished look, we also offer [DL-FLEX-CH-EC](#) (closed end caps) and [DL-FLEX-CH-LE](#) (live end caps with a pass through hole for wiring) for the DL-FLEX-CH6. Clear and Frosted lenses are available for this channel.

Field-cuttable Lens Covers/Channel Sets, in 6’ lengths, are also available in either clear ([DL-FLEX-CHSET-6-CL](#)) to enclose the LED strip or frosted ([DL-FLEX-CHSET-6-FL](#)) to enclose and help diffuse the light.

Mounting channels may be attached to virtually any surface using Stainless steel clips. We recommend 24” distance between the mounting clips. They are sold as a pair.

The channel offers a contractor-friendly installation route – many contractors prefer to pre-install the DL-FLEX product into channels on the bench prior to moving sections up the ladder for installation on the job site.

Is the DL-FLEX-RGB waterproof?

No, the DL-FLEX-RGB is not designed for use in wet locations.

For wet location applications please refer to our [DL-FLEX-UP-OD-RGB](#) wet location flex product line which is specifically designed for Wet and Outdoor installation conditions.

Can I plug the DL-FLEX-RGB directly in to a standard 120V US outlet?

Yes, we provide desktop or wall plug drivers that produce the 24V DC power which plug into a standard wall outlet. See JESCO [DL-PS-xx/24](#) series of plug and play LED drivers.



What gauge wire do I run between the LED and the power supply?

In order to eliminate voltage drop, cables specifications of 14/2 AWG and up are typically used.

Your contractor will assist you in specifying the correct gauge of cable required to remotely locate the power supply relative to your fixture location and to determine how to eliminate voltage drop from remote supplies.

Typically you should think in terms of 20' – 50' max feeds to/from remote locations, although any distance is theoretically possible with your contractor's assistance in specification of correct supply cables.

Can I control it?

Can I connect it to my building control system?

Yes, that is the fun of the product!

All RGB systems start with a power supply and a means of connecting that power supply to the DL-FLEX-RGB product. This is usually a [DL-PS-xx/24](#) power supply of some type plus an RGB power interface. The interface is used to vary the amounts of each color – Red plus Green plus Blue – that the DL-FLEX-RGB product produces.

The interface in turn takes a control signal to tell it what to do moment to moment – usually those orders originate in one way or another from you. Sometimes the interface receives orders down a wire from a computer, sometimes via a wireless control.

Complex interfaces use the industry standard lighting control protocol “DMX” which means our DL-FLEX-UP-RGB fixtures can very easily be connected to even the most complex of entertainment industry controllers.

Tip - add a run of warm white DL-FLEX next to this product to create a cove system than can change the look, feel and usage of a space in a moment.

Talk to your JESCO representative about what you want your fixtures to do – and we will be able to come up with a way of doing it.

What types of controllers do you offer?

We offer various control systems depending on your design specifications and budget.

LC-RF-300 is a radio frequency control interface that offers preset color changing modes – this is one of our simplest control solutions. It is user adjustable with an included hand held remote control that wirelessly reaches to 30 feet maximum. This controller can be hidden and does not require the remote to be in line of sight in order to control it.

LC-IR-300 is an infrared control interface that offers preset color changing modes – this is also one of our simplest control solutions. It is user adjustable with an included hand held remote control that wirelessly reaches to 30 feet maximum. This controller requires the remote to be in line of sight in order to control it.

[LC-200-INT](#) is an interface that assigns a DMX address to the RGB LED fixture runs – this is the backbone of any complex system. DMX controlled runs are expandable to unlimited lengths with our [LC-200-RPT](#) (power repeater). This controller can be used with our LC-PC-100, LC-PC-400 and LC-PC-500 DMX



controllers. It is also compatible with third party DMX 512 based lighting controller systems. It is a 24V DC unit, 5 amps per channel / 120 watts per channel. An external power supply is required.

[LC-PC-100](#) This unit is a DMX control – software based and user programmable via PC USB. Programs are loaded via a software programming interface. You can program 512 individual lighting zones - each with 255 levels of dimming possible. The unit can be used with our LC-200-INT interface. The unit features a 2 button user interface.

[LC-PC-400](#) is similar to the LC-PC-100 but comes with a programmable wall switch. This unit is a DMX control – software based and user programmable via PC USB. Programs are loaded via a software programming interface. You can program 512 individual lighting zones - each with 255 levels of dimming possible. The unit can be used with our LC-200-INT interface. The unit features a 3 button user interface.

[LC-PC-500](#) Is an advanced RGB and dimming controller that is user programmable via a PC USB. Programs are loaded via software programming interface. It features touch screen wall plate with advanced scene, dimming and color control. You can program 512 individual lighting zones - each with 255 levels of dimming possible. The unit features a 3 button user interface. It can also be interfaced via internet / smart phones. The unit can be used with our LC-200-INT interface. An additional power supply is required for both the controller and the interfaces.

Are any accessories available for the DMX controllers?

[LC-DMX-AMP1](#) is a 1 port DMX distribution amplifier. It repeats control signals to multiple interface locations – see spec sheets. It is required for use of DMX control runs over 1,000 feet to maintain DMX signal integrity.

[LC-DMX-AMP2](#) is a 2 port DMX distribution amplifier. It repeats control signals to multiple interface locations – see spec sheets. It is used to split otherwise daisy-chained DMX control signal in 2 or more directions.

How do I replace the DL-FLEX-RGB?

Typically, you will not see any failures in our DL-FLEX-RGB for many, many years. In the rare event of a premature failure, a 12” section can be replaced within an installed run by simply unplugging the bad section and replacing it with a new one.

What are the recommended applications for the DL-FLEX-RGB?

Recommended applications for the DL-FLEX-RGB series include anywhere where you would like to add controllable and programmable color. The DL-FLEX-RGB can be used in coves, display cases, offices stores and restaurant, architectural features, corporate showrooms and exhibition display, residential shelves and counters, accenting point of purchase display, signage applications, backlighting of glass and acrylic panels or cut out forms, lighting toe-kick areas, undercabinet task lighting.

How long do your LEDs last?

JESCO LEDs in the DL-FLEX family are designed to meet or exceed a Rated Lumen Maintenance Life or L_{70} of 50,000 hours (Meaning the LEDs will maintain at least 70% of their original light output after the fixture has been on for 50,000 hours).

That being said, exceeding the operating temperature values may damage the LEDs by reducing the lifespan, lumen output, and/or adversely impact color consistency. It is recommended that adequate airflow and heat sinking be taken into consideration in the installation and application of this product.



Improper thermal management may lead to premature product failure and void the warranty. See the product specification sheets for more information.

Why choose LED over any other type of lighting?

LEDs have caused a revolution in lighting. JESCO has helped lead that revolution. We were one of the first manufacturers to make the shift to the LED light source many years ago. Our LEDs are of the highest quality and they are time-tested to be dependable.

There are many reasons to make the switch to LED products. Some of the reasons include:

Technological Impact

LEDs are solid state, light emitting chips that are not encased in fragile glass enclosures or use delicate and inefficient filaments. LEDs are vibration resistant. They also do not need to warm up as they are an instant-on light source. LEDs currently offer life expectancy of 50,000 hours, on average. LEDs offer much more control of correlated color temperatures and provide the option to add color(s) either monochromatically or through RGB technology. The chips are miniscule in size which allows manufacturers to design much smaller fixtures and allows designers and end users much greater flexibility incorporating and installing these fixtures on their projects.

Financial Impact

The long life expectancy means a higher rate of return on investment – installed fixtures can last, at least, 10 years (depending on the design, the lifespan of the power source and the duty cycle of the fixture) with no maintenance. No maintenance means no labor costs and no replacement lamp costs associated with installed fixtures and lamps over the life of the fixture. Fixtures mounted in high or hard-to-reach locations are the prime candidates for LED lighting. LEDs are very efficient light sources and are cool to the touch unlike incandescent light sources which release 90% of their energy generated as heat. Due to the inherent cooler running temperatures of LEDs, HVAC system design loads can be scaled down. LEDs use much less energy per fixture than standard light sources guaranteeing savings in electrical costs far into the future. Lastly, many local energy providers are currently offering rebates to customers making the switch to LED fixtures.

Environmental Impact

LEDs are easily recyclable. They contain no mercury or lead which require special handling and disposal. LEDs do not emit harmful UV/IR which discolors fabric, furniture and artwork. The U.S. Department of Energy [estimates](#) that rapid adoption of LED lighting in the U.S. by 2027 could deliver savings of about \$265 billion, avoid the building of 40 new power plants and reduce lighting electricity demand by 33% in 2027.

All or even one of the above stated reasons may be the right reason for you to choose a fixture with an LED light source.

The last important factor when choosing an LED fixture is scrutinizing the manufacturer of the LED chip and the incorporation of this chip into the design of the lighting fixture. As the United States EPA and DOE Energy Star program states on its website “Bad design can lead to a wide range of problems, some immediately observable and some not. Poorly designed products often come with exaggerated claims while failing to deliver on the quality specifications provided.” Our LED products are designed around the LED light source and not the other way around making for a well-designed, color consistent and extra long-life fixture with a proven track record. With all our LED products, JESCO offers layout assistance and technical support helping make specification, as well as installation, simple.

Therefore, always look for reputable and trusted sources of LEDs and LED fixtures - be it JESCO Lighting or anyone else.

