



ROUGH-IN GUIDELINES FOR ARCHITECTS, DESIGNERS AND SPECIFIERS

All of the MedLux products are designed with ease of installation in mind. However, there are some important restrictions and considerations to keep in mind when designing the equipment placement and wire routing for your MRI suite.

XLS Downlights

The XLS downlight fixture line is meant for installation above drop ceilings. However, if a hard ceiling configuration is required, be sure to provide some sort of above ceiling access in the event that some sort of failure might occur.

The J-box provided with each XLS fixture is not rated for through wiring. Therefore, whips must be provided to drop from the 120V branch circuit to each light.

Each fixture is equipped with internal overload, open load, and overheat protection. In the event of overheating, the lamp will automatically reset once the fault is cleared. However, the two other failure modes will cause the fixture to shut down until the input power is re-cycled. Turning these fixtures OFF from the dimmer does not disconnect the power, and therefore will not reset the fault. For cases like this, we recommend that a 'reset' switch be added somewhere in the equipment room to clear a potential fault. Alternately, if the branch circuit breaker is nearby, that can be used in similar fashion.

Dimming control is provided via separate Cat5 wiring, all supplied with the system order. Each zone requires a separate signal filter and a set of cables. Beware of some signal filters that offer multiple channels within one enclosure. Many of these have some form of leakage path between the channels which results in cross-talk between them with some very strange and unacceptable results. The filters supplied by Everbrite are certified to have all channels completely isolated.

All lamps in a given zone must be wired in 'daisy-chain' fashion with the Cat5 cables. In most cases, only a single zone is required. However, some magnet manufacturers require long daisy-chained circuits to be split to avoid creating a "circular antenna" around the room. For those cases, the cable connection box (located at the filter output on the electrical penetration wall) has two RJ-45 receptacles. These connectors can be wired in parallel, so cables plugged into either one can be routed separately as required.

In some installations, the trim rings must be sealed to prevent dust intrusion. In those cases, a seal gasket is provided, but often the trim spring does not have sufficient tension to compress the gasket adequately. If this situation occurs, SS sheet metal screws may be used to attach the trim rings directly to the ceiling surface.

For areas designated as seismic zones, attachment holes are provided on the slide-bar mounting brackets for tethers. These tethers are not normally supplied and must be provided by the installation contractor.

Ceiling Mounted Graphic Panel Illuminators (GPIs)

All wiring required is designated “Class 2, Low Voltage Power Limited”, and is provided with each system. Interconnection is made using pre-wired connectors for simple ‘plug and play’ installation. In order to meet the Class 2 standard, a special Power Limiter/Distribution box is provided. It is intended to be mounted close to the associated filters at the electrical penetration panel. However, if necessary, these can be remotely located as long as Class 1 wiring methods are used between the filters and the Limiter box.

If a “recessed” look is required, riser elements can be obtained for that purpose. Most ceiling tile manufacturers offer riser systems. Please contact your Sales Representative for further information.

For areas designated as seismic zones, attachment holes are provided at the corners of each light box for tethers. These tethers are not normally supplied and must be provided by the installation contractor.

Wall Mounted Graphic Panel Illuminators

Like the ceiling GPIs, these fixtures also use Class 2 wiring, with the same connector system described above. All cables are supplied with the system, as is the Power Limiter/Distribution box also described above. The same rules apply to remote wiring. One special wiring requirement is the result of the flush or recessed mounting of these panels. A recessed J-box will be required to feed the power/control cables through the wall to the back side of the GPI. Location and dimensions are given on our generic installation drawing, No. GW10000-M, found in our Wall GPI Installation Manual. When mounting these panels in a true recess, be sure to allow sufficient clearance at the top of the opening. Since these fixtures mount with a “Z-bar” system, the display must be raised high enough to clear the bar, then lowered down to engage with it. Two to three inches should be sufficient.

Due to the weight and size of these panels, special mounting brackets are provided with the product. Please note instructions for attachment of these brackets indicated on the GW10000-M installation drawing.

For areas designated as seismic zones, a supplemental right-angle mounting bracket should be added to the bottom edge of the panel. This bracket is then screwed into the wall studs and the panel frame extrusion. This bracket and fasteners are not normally supplied and must be provided by the installation contractor. Note that only aluminum bar stock and SS screws are allowed.

White and RGB Cove

Most cove installations require a large number of modules to make up the complete system. That means there will be a large number of special mounting brackets (supplied) to be attached. Be sure to use non-ferrous fasteners for this task.

Most magnet manufacturers require special wiring for proper operation of the machines. One set of wires, the “gradient cables” carries very high currents and voltages during the various diagnostic scans. These high currents create strong magnetic fields that ‘couple’ with nearby wires, cables, etc., causing electrical currents to flow where they shouldn’t. The result is usually some sort of flicker effect. The MedLux cove components are fairly sensitive to this kind of interference, so some specific guidelines must be considered.

Cable routing is a fairly obvious concern. It is preferable to maintain at least 24” of clearance between any part of the cove system (cables, modules, etc.) and the gradient cables, both in the shield room and the equipment room. This includes parallel and perpendicular proximity. Filter location is also important. It is critical to mount the signal filters for any of the MedLux products as far from the gradient cables as possible, especially for the cove wiring.

If it is physically impossible to meet these guidelines, then there are some additional filtering techniques that can help eliminate the symptoms, but the effectiveness of these add-ons is highly site dependent and is not guaranteed to solve the problem in every case.

Dimmers & RGB Controls

Although MedLux dimmers and RGB controllers are designed to mount in standard single-gang and double-gang boxes respectively, the keypad faces extend beyond the normal dimensions of standard switch plates. Therefore, dimmer and RGB control locations will require some physical separation from other unrelated switch or receptacle functions nearby.

In some cases, such as RGB controls or multiple zone dimmers, our wiring diagrams show the use of a standard two-channel signal filter to feed two independent signals through. Although

this scheme does work properly with the specific filters we supply, it does not always work with everyone else's parts. The problem with using improper filters is an effect known as cross-talk, whereby the two signals interact with each other. The result causes random flickering, loss of control, and sometimes a fading effect that occurs all on its own. Since often times the shield room provider requires use of their preferred filters, the best way to avoid this crosstalk issue is to provide separate filters for each signal channel required. Please refer to the discussion on multiple channel filters in the **XLS Downlights** section above.

All dimmers and RGB controls require an external Class 2 rated power source. This can be in the form of an AC transformer (12-16V) or a DC source such as a 15V wall adapter. In either case, it is possible to power several dimmers/RGB controls from a single source. Each dimmer will require about 2.5W while RGB controls require about 6W.