MODULAR INTERNATIONAL

Case Study: "Hacienda Amanecer" Private Residence, Rancho Santa Fe, CA

The Challenge

Engineer a custom lighting solution to fit within (x10) 13 7/8" L x 6 3/8" W x 14 3/8" H x ½" thick steel boxes that were installed as part of the ceiling's exposed beam structure in the living room area while providing pleasant illumination below. Ceiling heights within the space are 17 feet high with a mixture of natural and artificial light.

The Solution

Modular International's approach to this project involved custom engineering, a two-light fully adjustable lighting insert with integral drivers to fit within the parameters of the existing steel boxes.

By reducing the dimensions of a standard two-light Solid Surface fixture, Modular International proposed using self-tapping screws and a safety cable to secure the insert within the confines of the steel boxes. For long term maintenance, the face plate for each insert would be removed to allow the insert to come out of the steel box providing access to the integral drivers and LED modules. Two 14-watt, 3000K, 70mm 579e static white LED modules with shielding cylinders and satin etched lenses were used per lighting insert. Each 14-watt 579e LED module produced 1,629 delivered lumens (3,258 delivered lumens per fixture) at a 116.3 lm/w efficiency rating with 92 CRI (R9: 83) and provided 45-degrees of adjustability plus 360-degrees of rotation. This output provided 15-foot candles at a ceiling height of 16.4 ft (5M), providing pleasant illumination to the space below with added phase dimming control down to one percent.

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At a Glance

Modular International's custom engineered two-light fully adjustable LED insert featured 16-gauge steel components with a black powder coated finish, two 14-watt 579e LED modules producing 1,629 delivered lumens (3,258 delivered lumens per fixture) at a 116.3 lm/w efficiency rating, 3000K, 92 CRI (R9: 83), 45-degrees of adjustability plus 360-degrees of rotation per LED module. These fixture inserts featured a removable 11-gauge steel face plate with a black powder coated finish for long term maintenance and accessibility to LED drivers and modules for future replacement and upgrades. Phase dimming control down to one percent.

- Lighting Designer: studio+light (San Diego, CA)
- Lighting Representative: LINX Lighting & Controls (San Diego, CA)
- Distributor: tazz lighting (San Diego, CA)

Primary Considerations

- Custom engineered, fully adjustable lighting solution to fit within steel boxes integrated into the ceiling's exposed beam structure.
- Pleasing illumination for a living space with 17-foot-high ceiling heights and a mixture of natural and artificial light.
- Ease of installation and accessibility for long-term maintenance.
- US manufactured from domestic materials and assembled in Pittsburgh, PA.

Existing steel boxes – part of the ceiling's exposed beams

From the Design Team

"The living room ceiling structure was built with these steel boxes incorporated into the trusses. The client did not want recessed downlights in the wood ceiling and there was no plenum space to work with regardless. The question was, how do we install something in these boxes that will provide lighting in the space aside from any decorative fixtures. This is where Modular International and Tony Madonna come to the rescue and assisted me with developing a custom insert that includes dual adjustable LED fixtures. I had reached out to several companies for this endeavor and only Modular International took on the challenge."

David Shaeffer, LC
Senior Lighting Designer
studio + light