

Dialight's DuroSite® Series LED Lighting Fixtures

How LED lighting delivered multiple benefits for Barcelona metal processing plant

The lighting challenge

With the metal processing machinery pumping so much energy, the 32x400W high pressure sodium (HPS) lights in the 1288 sqm Martisa facility were subject to frequent dimming and flickering, so the management were looking for a more robust lighting solution. The performance instability of the HPS was also generating irregular colour rendition areas varying between 118 and 270 lux at floor level.



Under 400W High Pressure Sodium lighting



Under 150W DuroSite LED High Bays

Further problems arose when the lights took ten minutes to re-strike following power outages. Maintenance was also an issue, as the HPS lights were mounted at a height of 9 metres, ran ten hours a day, five days a week and had to be replaced every 10,000 hours, each at a unit replacement cost of €50 plus the use of a mobile elevation platform that cost €100 per day.

The solution

Martisa's energy consultant (Area Energetica, a lighting consulting partner of INELEC distributor) recommended a lighting solution by specialist LED lighting manufacturer Dialight that could meet all of these challenges as well as delivering substantial energy savings. In order to minimise project cost they chose to replace the 400W HPS lights on a one-for-one basis with Dialight's highly robust 150W DuroSite® LED High Bays.

The result

Martisa is now enjoying the immediate benefits of 69% reduction in lighting energy use and reduced carbon emissions from solid-state LED High Bays that suffer no flickering or dimming effect from the amount of energy being pumped by the machinery. The lux level is now steady at 200 at floor level, giving improved and consistent colour rendition, while the LEDs' instant-on ability means that there is no re-strike delay following power outages. Carrying a 5-year continuous performance warranty and with an expected lifetime of 60,000 hours, the LED lighting has also greatly reduced the maintenance burden and cost.

Installation Snapshot

- ▷ 1,288 square metres
- ▷ Number of fixtures – 32
- ▷ Replaced – 400W HPS
- ▷ Illuminance level – 200 lux
- ▷ Mounting height – 9 metres
- ▷ Energy reduction – 69%
- ▷ Installed load cut from 9.9 to 3.7W/sq metre

Dialight LED benefits

- ▷ 5 year warranty = maintenance free
- ▷ 80% lumen maintenance after 60,000 hours
- ▷ 77lm certified
- ▷ Significant energy savings
- ▷ Instant on/off
- ▷ Superior light quality
- ▷ IP66 rated to withstand dust and moisture
- ▷ Polycarbonate glaze
- ▷ No UV or IR
- ▷ No hazardous substances

Mr. Santi Martínez, the manager of Martisa, commented "Replacing the HPS with Dialight's LED High Bays has eliminated the annoying flickering issue caused by the energy consumption of the machines and we now have the added benefit of instant on/off switching that allows more efficient lighting management by reducing the re-strike time. Our staff now works with a better sense of comfort due to the removal of the lighting fluctuation and we're getting overall homogeneous lighting with improved colour rendition across the entire warehouse. The reduction of energy consumption and maintenance fees represent a huge and direct economic saving for the company that also represents significant value."

Dialight reserves the right to make changes at any time in order to supply the best product possible.

The most current version of this document will always be available at:

-www.dialight.com/news/details/Martisa_Case_Study