LED Lighting for the Industry - Mechanical Engineering

Challenge
Industrial machines are overhauled and repaired in the mechanical engineering hall. The lighting requirements were no longer met. Illuminance in the working plane was well below 300 lux. Maintenance costs were negatively affected by frequent lamp changes. The existing 400W high-pressure mercury vapour lamps were in continuous operation and no longer up to date. At low illuminance, the light colour 5000K was perceived as uncomfortable.

LED Lighting Concept
The personal advisory took place on site. The hall was newly illuminated by BuR Lighting with 12x 240W ZigBee LED High Bay luminaires in the high protection class IP65. ZigBee Control supports the permanent alignment of daylight and artificial light with radio-controlled data and signal transmission. ZigBee® is a registered trademark of the ZigBee® Alliance.

BuR Lighting Lighting Design
BuR Lighting designs with DIALux evo are based on:

EN 12464-1 Norm
Illumination of Indoor Workplaces

ASR A3.4 Workplaces Guideline
Technical rules for the illumination of workplaces

Lighting Quality
- High quality LED illumination
- Wide beam illumination of the working plane and the machines
- Average illuminance: E_m=285 Lux
- High uniformity of illuminance: E_{min}/E_m= 0,51
- Pleasant light colour: 4.000 Kelvin
- Very good colour rendering: Ra>80
- High visual comfort

BuR Lighting Luminaires
- Article: LED High Bay ZigBee
- Art.-No.: 4111240P09040VZ
- Housing: Aluminum Die-Cast
- LED Driver Input Voltage: 100V-240V
- LEDs: Nichia Chip
- Wattage: 240W
- Beam Angle: 90°
- Protection Rating: IP65
- Intelligent Lighting Control: ZigBee

Savings and Benefits
- ZigBee LED Luminaires
- Sealed Wide Voltage LED Drivers
- Lighting Control according to Daylight
- LED Life Span: 50.000 h
- Luminous Efficacy: 130 lm/W
- Energy Savings p.a.: 6.490 kWh
- CO_2-Reduction p.a.: 3.472 kg
- Reduction of Maintenance Costs p.a.: 85%
- Return on Investment: 2,6 Years

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