

# **LED-LIGHTS** **FOR INDUSTRY**

*And when do you see the light?*



**IPF** ELECTRONIC

**High-End** in High-Tech.

## **LED LIGHTS FOR INDUSTRY**

**WE MAKE LIGHT TANGIBLE**

Nearly every industrial sector requires lighting that is tailored to the respective workplaces. Proper light ensures better visibility, improves production quality, increases workplace safety and also helps to reduce energy cost.

For the proper illumination of work stations, the operating areas of machines, switching cabinets and many other application areas, we offer a number of solutions. If none of these lights meets your needs, ask us about a special solution.

## **COST EFFICIENCY AND DIVERSITY**

**LONG SERVICE LIFE, LOW ENERGY CONSUMPTION, FUTURE-ORIENTED**

### **Long service life**

In many cases, LED lights have gained acceptance not least due to their very long operational life. With an average of 50,000 operating hours and more, LEDs typically last 10 times longer than standard lights (approx. 4,000 to 5,000 operating hours). This is, however, only ensured if the LED is correctly operated. Particularly decisive here is the LED base temperature. The integration of a temperature management system is, thus, essential.

### **Ideal for industry**

Proper illumination for industry must not only offer light that is ideally suited for the respective area of application, but it must also satisfy a whole range of requirements. This includes, among others, high shock and vibration resistance, resistance to coolants and lubricants or chemicals, mechanical loads (e.g., through flying chips) and high impermeability.

### **Diverse in every regard**

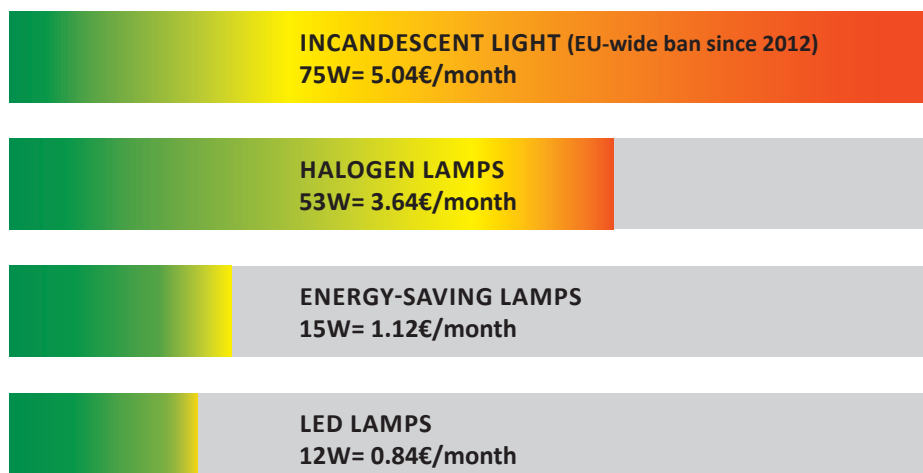
As varied as the requirements on LED lights are, our solutions are just as varied and flexible. No wish is left to be desired. This also applies for the light color, from neutral white (less than 3,300 kelvin) to cold white (above 5,000 kelvin), the required luminous flux and the correct beam angle, which determines the illuminance as a function of the distance from the light to the work area.

### **Technology of the future**

The acquisition costs for LED lights are, of course, higher than those of the standard lights used up to now in industry. But the investment is worthwhile through the rapid amortization due to the long service life, low maintenance costs and low energy consumption. In addition to this comes high operational dependability and simple transition due to the large product selection.

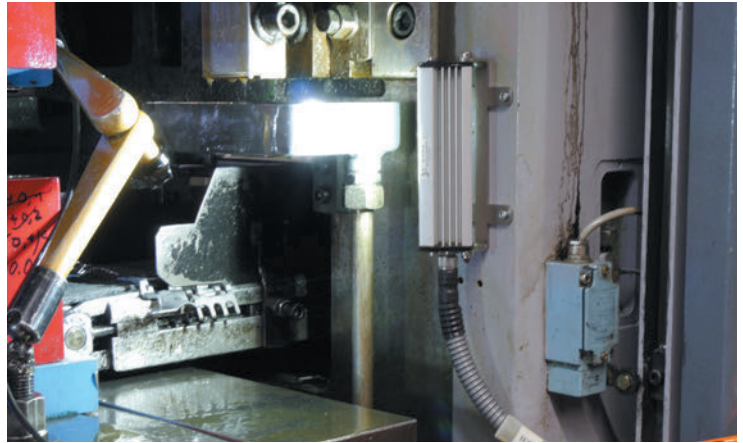
### **POWER CONSUMPTION AND COST COMPARISON**

(Electricity price: 0.28 €/kWh, brightness: 1.000 lumen, operating hours 2.880 h/year)



**APPLICATION EXAMPLES**

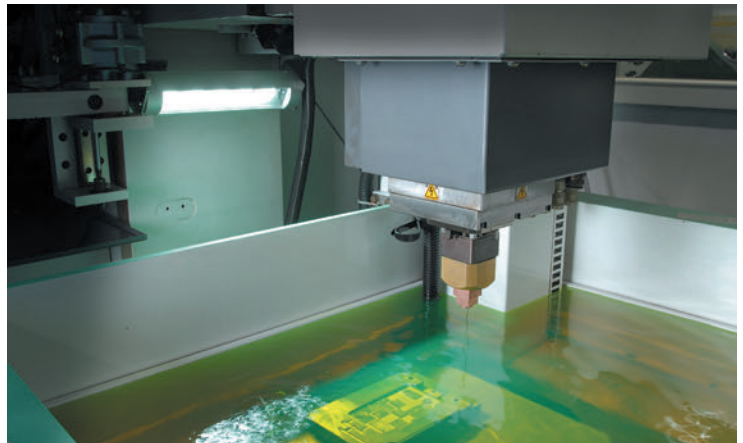
**SHOCK AND  
VIBRATION RESISTANCE**



**FLEXIBLE USE**



**CHEMICAL AND  
THERMAL RESISTANCE**



**HARSH  
ENVIRONMENTAL  
CONDITIONS**



## **LED LIGHTS** **FOR INDUSTRY**

### **ADVANTAGES AND HIGHLIGHTS**

- / High operational dependability
- / Long service life
- / Energy efficiency
- / High luminosity
- / Wide range of use
- / Various light colors
- / Industrial-strength housing
- / Degree of protection IP40 to IP67
- / Easy installation
- / Flexible use
- / Profile, round or cuboid housing
- / Special lights on request
- / No UV radiation, no IR radiation
- / High impact and vibration resistance
- / Mercury-free
- / No turn-on delay
- / Flicker-free
- / Insensitive to repeatedly switching on and off
- / Low heat development



## **MACHINE LIGHTS**

### **ROUND**

The special, highly focused radiation characteristic of these lights allows work areas to be illuminated even from a great distance.



### **ROUND WITH THREAD**

This very compact light with three LEDs is suitable for extremely space-saving mounting directly in a machine or switching cabinet.



### **TUBULAR**

High IP protection class and very robust front screens, e.g., made of hard glass or borosilicate glass, are just a few of the qualities of these machine lights that are recommended for many applications due to their varying diameters and lengths.



### **CUBOID**

These surface-mounted LED lights in IP67 can be mounted right in a machine; the lights can also be directly controlled via a PLC.

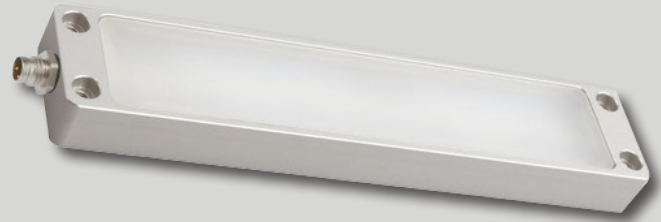


# MACHINE LIGHTS

**DURABLE**

## ADVANTAGES AND HIGHLIGHTS

- / High operational dependability
- / Various designs
- / For harsh fields of use
- / Up to degree of protection IP67
- / Chemical and thermal resistance
- / Robust front screen
- / Flexible use
- / Fast mounting
- / Active temperature management
- / Suitable for continuous operation
- / Flicker-free light



### Perfect light in the workroom

The operating areas of machines must be well illuminated, e.g. during setup, but also for monitoring production processes. Our robust LED machine lights offer high luminous flux and wide beam angle in a compact design to, e.g. illuminate the workroom of machining centers, turning, drilling and milling machines as well as automatic punching presses uniformly and over a wide area.

### Developed for special requirements

Harsh conditions require reliable LED lights that can also satisfy more stringent requirements. Our lights in IP67 feature complete sealing against dust and can withstand brief immersion of the housing in water. Solutions with front screen made of borosilicate glass are resistant to many chemicals, high temperatures as well as sudden temperature fluctuations.

### Economical solutions for critical environments

Robust aluminum or stainless steel housing, front screens made of glass, safety glass or Luxacryl as well as high degrees of protection make a wide range of uses possible for our surface-mounted lights directly in the production area. Thus, the lights are also ideal for critical environments, e.g. when using coolants and lubricants and in areas with increased hygiene requirement.

### Direct control and active temperature management

Due to the low current consumption, our lights can be controlled directly via a PLC. This is extremely useful if a light does not need to be active permanently, but rather only for certain tasks or machine functions. For maximum service life of the LED, our solutions are equipped with an active temperature management system that lowers the LED current in the event of excessive heating.

## **WORKPLACE LIGHTS**

### **TUBULAR**

A compact workplace light as it should be: easy to mount, available in various lengths, with a wide range of beam angles for large-area illumination. This makes it ideal for installation at workplaces, in switching cabinets, on machines or around machinery.



### **CUBOID**

Cuboid LED lights are compact surface-mounted lights that illuminate your application area both efficiently and homogeneously as well as flicker- and glare-free.



### **PROFILE HOUSING**

LED workplace lights in profile housing are compact surface-mounted lights that illuminate your application area both efficiently and homogeneously as well as flicker and glare-free.





## **WORKPLACE LIGHTS**

**THE ROBUST AND COST-EFFICIENT SOLUTION**

### **ADVANTAGES AND HIGHLIGHTS**

- /** Compact dimensions
- /** Simple mounting
- /** Degree of protection IP54
- /** High luminous efficiency
- /** Operating voltage 24V DC or 230V AC
- /** Large beam angle
- /** SMD lights of the latest generation
- /** Front glass made of plastic
- /** Special lights on request
- /** Light without UV- and IR-proportion
- /** Service life independent of switching cycles



## **PLENTY OF LIGHT FOR MORE QUALITY AND SAFETY**

Optimum illumination of the workplace improves the production quality and also increases workplace safety. Our LED workplace lights are not only very bright, but also feature beam angles that ensure ideal lighting conditions and proper illumination of workplaces, regardless of where they are located. Our solutions made of extruded aluminum profiles can be fitted with up to 20 LEDs.

For fast and easy mounting of our lights, it is possible to use, e.g. already existing fasteners.

# **FLOODLIGHTS**

## **THE ECONOMICAL CHOICE**

### **ADVANTAGES AND HIGHLIGHTS**

- / Impact and vibration resistant**
- / No risk of burns**
- / Flicker-free**
- / No UV radiation, no IR radiation**
- / Absolutely homogeneous light**
- / Maintenance-free**
- / Simple mounting**
- / High energy efficiency**
- / Service life independent of switching cycles**
- / Constant light when exposed to heat, cold and permissible voltage fluctuations**



In large-scale production halls, our mercury-free floodlights with no warm-up time provide a great deal of light and use significantly less energy than halogen floodlights. The high luminous efficiency ensures uniform surface illumination, e.g. on work paths or at indoor and outdoor workplaces.

## **GOOSENECK LIGHTS**

**FLEXIBLE AND EXTREMELY ROBUST**

### **ADVANTAGES AND HIGHLIGHTS**

- / Flexibly adjustable gooseneck
- / Shock- and oil-resistant
- / High luminosity
- / Integrated on/off switch
- / Degree of protection IP51 to IP64
- / Screwable base or magnetic foot
- / Low current consumption
- / Flicker-free light without UV- and IR-proportion



Our gooseneck lights are particularly suitable for use in turning, milling or eroding machines, as well as in stamping or injection molding machines. Thanks to the flexibly manageable gooseneck, this solution is also ideal as a table lamp, e.g. for workbenches, at test stations or as illumination for microscopes. LED gooseneck lights consist of an aluminum housing, a flexible luminaire arm with a splash-proof luminaire head and a non-jarring glass cover.

# SIGNAL LIGHTS

## THE EYECATCHER

### ADVANTAGES AND HIGHLIGHTS

- / Signaling of machine and system states
- / Flexible use through control via PLC
- / No risk of burns
- / Robust construction
- / Various RGB LED colors for different machine states



Standard signal lights on machines or systems cannot always be identified at longer distances and, in modern production facilities, machine personnel are not always directly on-site. To allow system states to be clearly identified even from relatively long distances, our new signal lights emit light over a wide area. The solutions are available in various light colors or are used as RGB signal lights. These can be controlled via, e.g., a PLC to display different signal colors for various machine states.



## **COMBINED MACHINE AND SIGNAL LIGHTS**

### **ADVANTAGES AND HIGHLIGHTS**

- /** Operating temperatures up to +55°C
- /** Aluminum housing
- /** Degree of protection IP65/67
- /** Permanent operation possible
- /** Round and cuboid versions
- /** Wideangle lens optics
- /** Basic lighting and representation of machine states with one light



If „off the shelf“ doesn't fit your demands, that's no argument for conventional lighting solutions. If there are special requirements for sturdyness, mechanical design, solid covers or control options, we have a wealth of experience in solutions, so that you receive the optimum illumination for your requirements. Just contact us!

# **HIGH-BAY LIGHTS**

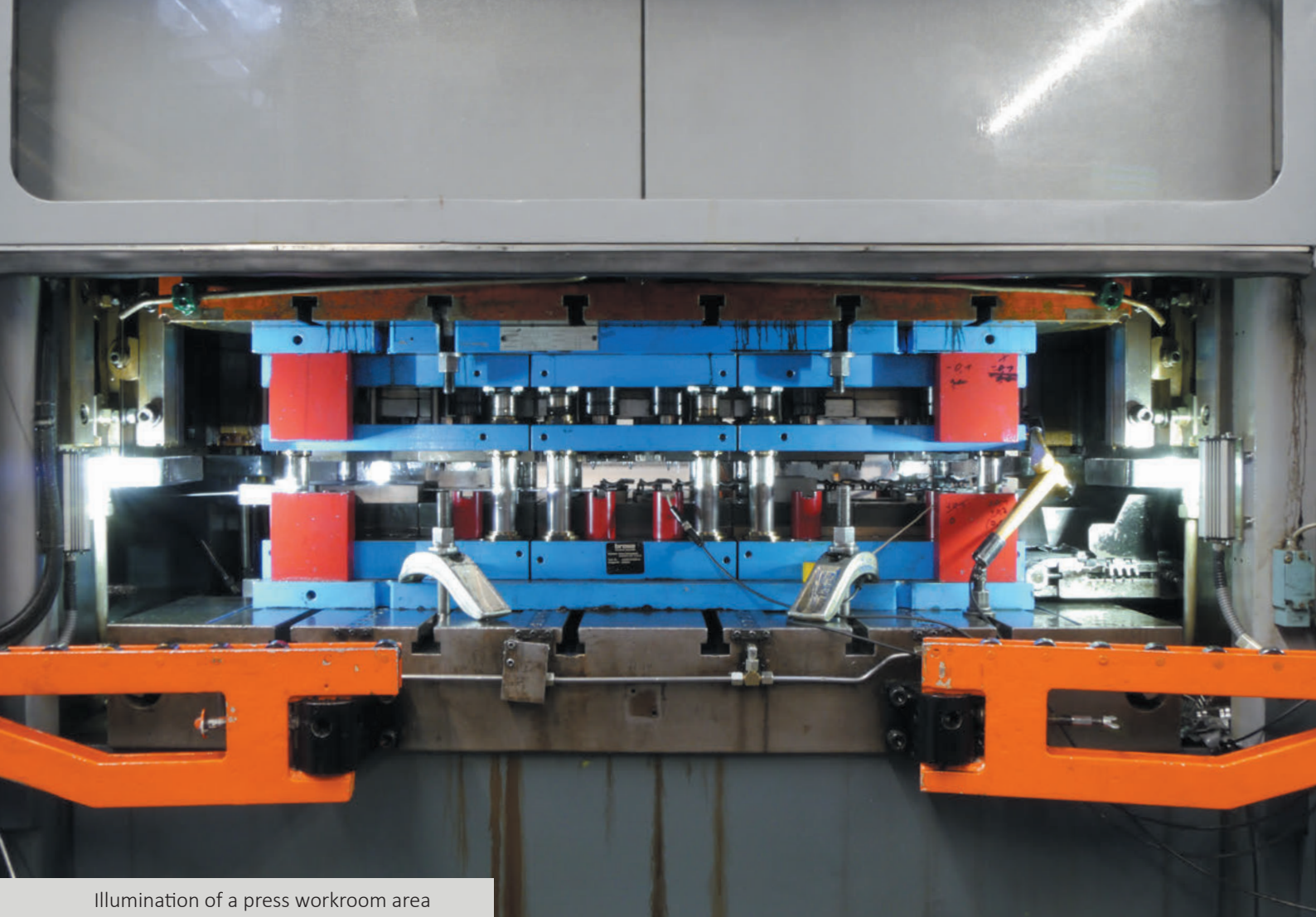
**THE "TOP SELLER"**

## **ADVANTAGES AND HIGHLIGHTS**

- / Shock and vibration resistant**
- / No risk of burns**
- / Flicker-free**
- / No UV-radiation, no IR-radiation**
- / Absolutely homogenous light**
- / Maintenance-free**
- / Simple mounting**
- / High energy efficiency**
- / Constant light when exposed to heat, cold and permissible voltage fluctuations**
- / Service life independent of switching cycles**
- / Degree of protection IP65**



Ideally suited for homogeneous and flicker-free illumination of buildings and halls with a height of up to 15m through the use of systems with various powers and radiation geometries. Individual areas can be switched on or off at any time as the lights require no start-up phase.



Illumination of a press workroom area

## ***PERFECT SOLUTION FOR HARSH ENVIRONMENT***

In a metal-processing company, the tool area of a punch needs to be optimally illuminated. The illumination must perform several tasks: the machine operator requires optimum visibility when the tool is set up on new material. Furthermore, there must be sufficient light during a tool change and for monitoring the running production process. In no case, however, may the illumination interfere in the operating range of the punch. It must withstand the high vibrations and shocks on the machine and also have a certain level of impermeability, since a light oil mist forms in the workroom during production due to the thin coat of oil on the metal strips.

ipf electronic recommended the installation of two compact cuboid lights at the side of the machine. These robust, vibration-resistant solutions in IP67 with 6 high-performance LEDs now offer optimum light for the workroom at all times without, however, impeding activities in the operating area.

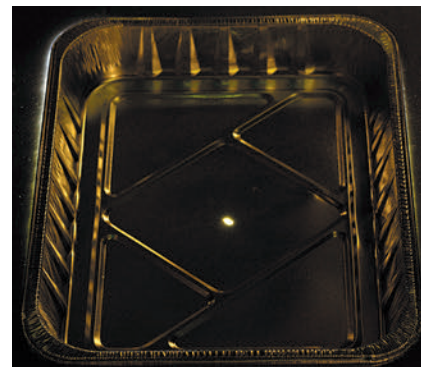
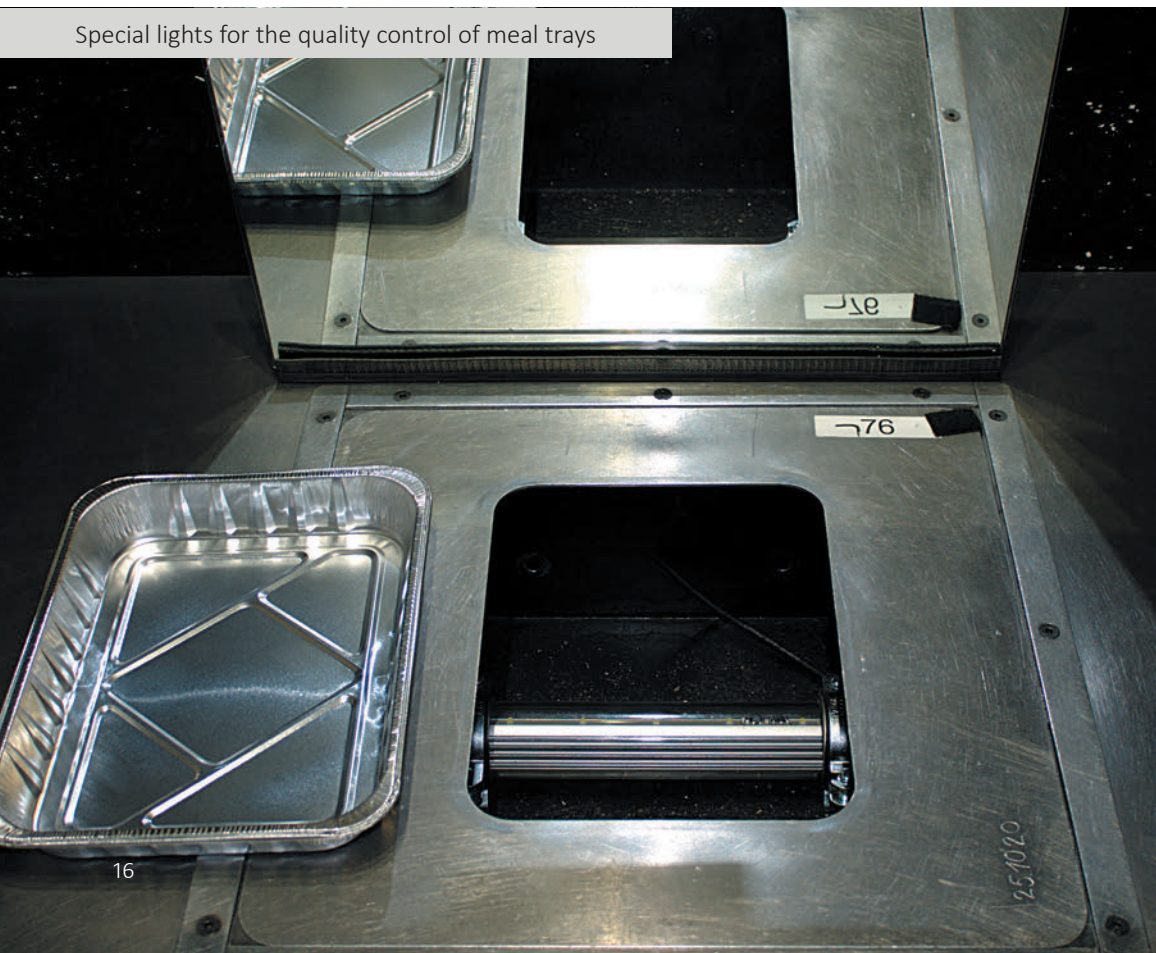


## PRACTICAL EXAMPLES THAT CONVINCED SPECIAL LED LIGHTS FOR INSPECTION TASKS

A manufacturer of meal trays for the food industry developed its own inspection workstations to examine trays for the smallest cracks and holes. Standard lights could not, however, fully illuminate the bottom side of large trays in particular. ipf electronic integrated LED lights in the inspection stations with a front screen made of unbreakable plastic, as this was an application in the food industry with special safety requirements. Because it was required that the lights not be activated until a tray was located in the inspection station, a „flash function“ was also needed. ipf electronic therefore modified the lights with special ballast electronics to realize a flash mode. The solution, in the form of a HART circuit, ensures not only the reliable operation of the individual lights, but also increases the service life of the LED in spite of high load.



Special lights for the quality control of meal trays







Illumination of a workroom of a machining center



## ***SIMPLE TRANSITION – CONVINCING RESULTS***

A manufacturer of pumps previously used a tube light to illuminate the workroom of a horizontal machining center (MC). Because the light intensity of the fluorescent lamp had long since been insufficient for optimum illumination of the machine, however, an alternative was sought out, ideally one that was quick and easy to install.

ipf electronic was able to present the pump manufacturer a solution with a tubular machine light that could be mounted using the already existing fasteners of the tube light. But not only the simple transition to the new lighting was convincing. The now-installed LED light (degree of protection IP67) in aluminum housing with front screen made of hard glass also provides much better lighting of the workroom.

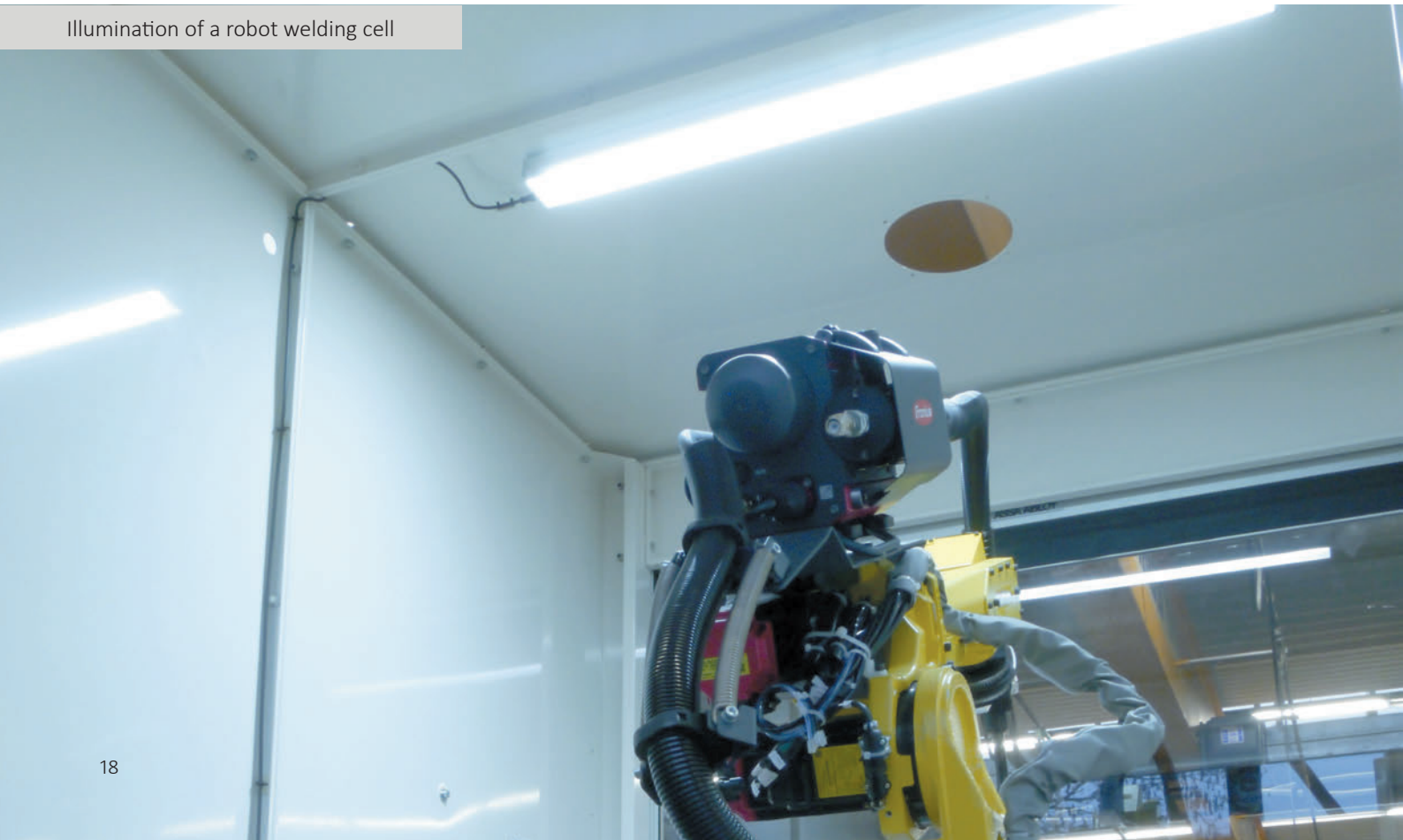


## IDEAL COMBINATION OF DESIGN AND FUNCTIONALITY

With industrial lights, not only the functionality is decisive, but often the design as well. A good example of this is LEWA Attendorn GmbH, a complete supplier for sophisticated special machinery equipment and groundbreaking robotic system engineering. During the course of developing a new robot welding cell, the company sought out a solution that not only optimally illuminated the welding cell, but also fit ideally in the design concept of the new development, e.g., for presentation purposes. Due to the range of solutions, ipf electronic was able to present a light here as well that met all of the customer's desires. The light with SMD LEDs of the latest generation is perfectly integrated in the overall design of the robot welding cell thanks to its cuboid construction and delivers a diffuse, daylight-white light through the plastic front screen that provides a very good view of the entire operating area of the robot.



Illumination of a robot welding cell



## **EFFICIENT CONSULTING IN ALL MATTERS**

***PERSONAL SERVICE AND RAPID SOLUTIONS FOR YOUR PROBLEMS***

Every call is important! When you contact our technical hotline, you contact experienced employees who will answer your questions competently and conscientiously. Our goal is to provide you with comprehensive and individual advice around the clock. Our expert team of in-house trained personnel is here to support you.

In almost all industrial applications, problems are becoming ever more complex and varied. Solutions to these problems often require external expertise. You will find this expertise together with a high level of specialist and problem-solving competence at ipf electronic. We are happy to discuss tasks which may seem small with you. For us, this is a matter of course!

ipf electronic is a renowned supplier of industrial sensor technology and a reliable partner. No customer query is ignored and no on-site customer appointment is missed. Our extremely broad range of products will convince you.

Diversity, expertise, consultation and flexibility:  
This is ipf electronic's recipe for success.

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