

# THORN

LIGHTING PEOPLE

## Case Study

Bomat, Industrial Manufacturer, Brugnera, Italy



# Manufacturer cuts lighting costs by 57%



**Working with Thorn Italy, environmental engineering firm EMPower has helped industrial manufacturer Bomat reduce its lighting costs and carbon emissions**

### Product used



AquaForce II LED



Omega LED

EMPower Engineering is an environmental engineering company specialising in building highly efficient manufacturing plants that minimise its customers' energy consumption and carbon emissions. Based in Brugnera, Italy, the company has been working with Thorn Italy for several years to meet its customers' lighting needs.

Building on this long and successful business relationship, Thorn account manager Guido Gaspardo invited EMPower to become a member of the Thorn Energy Partnership. The Thorn Energy Partnership is a worldwide venture between Thorn and lighting professionals that promotes energy efficiency without sacrificing good lighting performance. Through the Thorn Energy Partnership, EMPower's designers attend training courses, giving them the tools, specialist skills and product knowledge needed to deliver advanced



energy saving solutions to their customers. Christian Parpinel, Lighting Designer at EMPower, says, "The initiative is one of the main reasons that convinced us to work with Thorn, along with the quality of their products."

Thorn Italy provides a wealth of additional business support for EMPower through the Thorn Energy Partnership. Specifically, Parpinel has ongoing contact with his network leader, who provides in-depth technical consultancy to support bids for new work and helps design efficient lighting schemes for end customers. As an additional benefit, the company enjoys a range of business networking opportunities through the Thorn Energy Partnership.

Recently, the technical training that Parpinel received through the Thorn Energy Partnership enabled the organisation to deliver major benefits for industrial manufacturer Bomat, based in Azzano Decimo, Italy. The company, which manufactures copper, aluminium, iron and steel pipes for refrigeration, air conditioning and heating plants, needed to replace its lighting, including 40 fluorescent waterproof 2x58 watt luminaires in its 1,220 square-metre factory and 17 modular 2x55 watt fluorescent luminaires in its office. Stefano Boraso, co-owner of Bomat, says, "Our fluorescent tubes had reached the end of their operating lives and the quality of light in our buildings had deteriorated severely. We needed to replace our fluorescent products with a more efficient, environmentally sound lighting scheme."

To replace the old luminaires, Bomat turned to EMPower. "We have a longstanding, trust-based relationship with EMPower and particularly with Christian Parpinel. He designed our lighting ten years ago and he also designed our newer photovoltaic site," Boraso explains.

#### **The Thorn Energy Partnership and EMPower solution**

EMPower and Thorn Italy worked closely together to create the best possible solution for the customer. To help Bomat convert its maintenance requirement into an energy saving opportunity, Parpinel proposed an entirely new lighting scheme based on modern, LED luminaires from Thorn.

The proposed solution had to make economic sense for the customer. "It was obvious that the transition from fluorescent tubes to LEDs would have allowed a dramatic cut of energy consumption, but an accurate evaluation of costs was needed to ensure the solution would pay for itself quickly," says Parpinel.

Leveraging knowledge and software tools provided by Thorn through the Thorn Energy Partnership, Parpinel analysed Bomat's requirements in detail. Everything was considered, from the characteristics of the building (which allows lots of sunlight to enter during the day) and the activities carried out inside it – which involve constant movements of people and goods.

"Thanks to the software tools provided by Thorn we could accurately calculate the energy impact of factors such as the contribution of daylight, and design the simplest, most cost-effective solution," says Parpinel.

To further reduce costs, Parpinel planned a highly efficient deployment plan. "Within the Thorn product range we have been able to identify two LED models perfectly suited to Bomat's needs," he says. "We chose models that met requirements in terms of uniformity of lighting and which needed no modifications for cabling or fixing, which made the replacement of the old products fast and easy."

For the Bomat factory, EMPower chose the waterproof, 62W Thorn AquaForce II LED luminaire. In the office, the company deployed 43W Omega LED luminaires installed in the ceiling.



## Results and benefits

Working with Thorn Italy, EMPower delivered the new lighting plant to Bomat on time and on budget. The partnership between EMPower and Thorn Italy has helped Bomat improve the quality of lighting in both its production facility and its offices, while dramatically reducing energy costs and carbon emissions.

### Energy consumption reduced by 57%

The new Thorn LED luminaires have helped Bomat reduce lighting energy consumption significantly. In the factory, energy use has been cut from 6.28 kWh/m<sup>2</sup> year, to 2.69 kWh, and in the office from 19 kWh/m<sup>2</sup> year, to 8 kWh. This represents an overall energy saving of 57%. "We can verify that the Thorn Italy and EMPower solution has reduced our lighting energy consumption by more than half based on our electricity bill," says Boraso.

### Rapid returns on lighting investments

Due to the highly efficient Thorn solution and low-touch deployment plan, Bomat will achieve 100% returns on its lighting investments in just three years. "Reducing our energy consumption and costs by more than half means that the Thorn products will quickly pay for themselves," says Boraso. "What's more, we will continue to achieve year-on-year energy savings for decades to come."

### Better quality lighting

The light from the new Thorn LED products is more pleasant than the light from fluorescent lights in terms of visual appearance and colour temperature. Furthermore, LEDs turn on immediately without flickering, and their light output remains constant over time. "We immediately noticed a sharp improvement in the quality of our lighting," says Boraso. "The Thorn LED luminaires give us a rich, uniform, pleasant light that allows us to work better, both in our factory and in our office."

### Less maintenance

The extremely long operating life of LEDs (50,000 hours+) will allow Bomat to minimise maintenance interventions. The Thorn luminaires will only need to be cleaned occasionally, which is extremely easy as they are sealed to protect against dust and dirt. "Both the Thorn waterproof AquaForce luminaires and the Omega LED models have a smooth, easy to clean surface," says Boraso. "This is a big improvement on our old luminaires, which accumulated dust and insects."

Bomat is delighted with its new, energy saving lighting scheme. "We are very satisfied with the work done by EMPower using Thorn products," says Boraso. "If we had simply evaluated the price of LED luminaires, which is a little higher than traditional fluorescent products, we would have probably lost this opportunity to modernise our plants," he adds. "Instead, thanks to the partnership between Thorn and EMPower, we are leveraging all the benefits of LED lighting and reducing the environmental impact of our business."

### Achieving business success in partnership with Thorn Italy

As well as delivering great benefits for end customers, membership of the Thorn Energy Partnership is helping EMPower to grow its business. "We chose to specialise in energy saving solutions that require significant technical knowledge to deliver," says Parpinel. "The training, software tools and other support we get from Thorn are therefore very important to us, as they enable us to win customers with innovative and competitive solutions."

Guido Gaspardo, the Thorn account manager responsible for the Thorn Energy Partnership network that includes EMPower, says, "EMPower is totally focused on delivering innovative solutions that

deliver real energy savings for customers. The company's skilled, dedicated team has achieved great things with Bomat – one of the first manufacturers in Italy to implement an all-LED lighting scheme from Thorn. Through the Thorn Energy Partnership, we will continue to provide EMPower with all the help they need to win new customers and maximise their business success."

### Key Thorn benefits at a glance:



#### Lamp Efficacy

the LED technology ensures an efficient conversion of electric energy into light (lm/W).



#### System Efficacy

the use of a high efficacy light source combined with precision optics results in a high system efficacy, producing maximum light output for minimum energy input.



#### Maintenance Schedule

the long life of LEDs, without reduction in lighting performance, keeps maintenance interventions to a minimum.





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