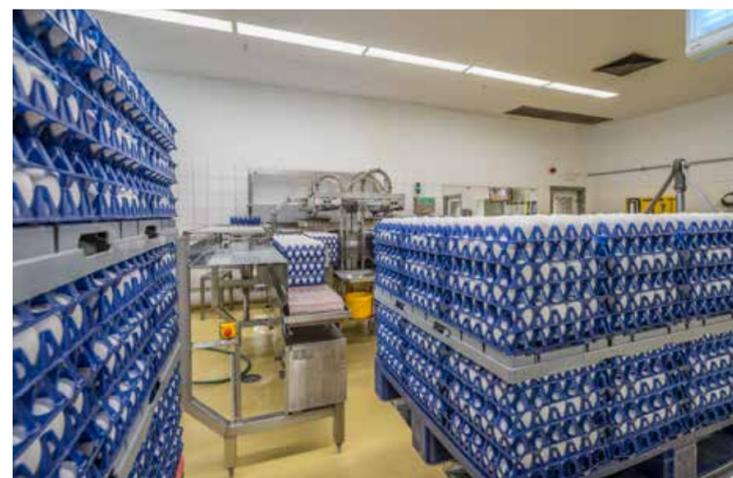




#### MIR LED

The MIR LED luminaires in De Kuyper's production hall at Middelharnis have housings of unpainted acid-proof stainless steel and chemical-resistant acrylic diffusers.



Egg and dairy products in alcoholic beverages:



# Middelharnis is the home of the egg liqueur!

De Kuyper is a Dutch family-owned company dating back to 1695. The company is the world's largest producer of cocktail liqueurs.



A purpose-made machine breaks the eggs and separates the yolks from the whites. Only the yolks are used in the process. The egg whites are sold on to other manufacturers. The machine can process 40.000 eggs per hour.



The newly separated egg yolks are filtered and cooled, and immediately mixed with alcohol for obvious hygienic reasons.



The bottling plant at Middelharnis can process 6-7000 bottles per hour, including cleaning, filling and labeling.



C.J.H. Kreling is the Technical Manager at De Kuyper's production facilities in Middelharnis, South Holland.

**D**E KUYPER'S FACTORY for dairy-and egg-based products such as alcoholic drinks with cream and eggs are located in the community of Middelharnis by the impressive Haringvliet estuary in South Holland. The best-known international brands of egg liqueur are made here.

The food processing industry is particularly concerned with matters of hygiene and other anti-bacterial measures. This is very obvious at the modern Middelharnis facility, with its stainless steel equipment and careful production processes.

The main production hall holds a great number of huge stainless steel tanks. The tanks all contain a mix of egg yolks, syrup, alcohol and water. The challenge is to make the animal fats of the yolks mix with the other ingredients so that the liquid will get the right viscosity and not separate. In order to achieve this, the mixture is kept under pressure in the steel tanks for several weeks and is monitored to determine when the product has reached the right consistency and can be bottled.

#### Alcoholic fumes and foam cleaning

It is the fumes from the alcohol in the steel tanks that present a particular challenge to the environment in the

production hall. Also, for hygienic purposes the entire hall is regularly cleaned with chemicals. Over time the fumes, despite the low and safe level, and/or the cleaning chemicals will in time cause paint to strip off any hard surface such as metal or glass, and accelerate the aging of several plastics. These were important considerations De Kuyper had to make when planning a new lighting system for the main production hall.

#### Unpainted stainless steel luminaires

To meet these challenges a special batch of MIR LED luminaires were ordered from Glamox. These were produced with luminaire housings of unpainted acid-proof stainless steel, and chemical resistant acrylic diffusers. This way, the luminaires will not be affected by the alcoholic fumes and detergents used in the cleaning process.

MIR LED is a high quality industrial luminaire with powerful LED light sources which can handle production hall ceiling heights. Developed for areas with temperatures ranging from -30°C to +45°C, it is offered with a choice of painted or

unpainted stainless steel housing, and a selection of diffusers for different purposes. MIR LED has a very high IP-rating (ingress protection), which makes it virtually watertight and dust-proof.

#### Long life and low maintenance

The exceptional long life of the LED light sources in combination with the product's excellent thermal control and high quality electronic components makes it ideal for installation in hard-to-reach places such as factory and warehouse ceilings. These luminaires are virtually maintenance free.

C.J.H. Kreling is the Technical Manager for the production facilities at Middelharnis. He has long experience in the food processing industry, and played a key role in the selection and installation of the MIR LED luminaires in the production hall. He is very pleased with the result: "We now have a lighting solution that can withstand the impact of the alcoholic fumes, as well as our vigorous cleaning regime. And because it is a modern LED solution we are now saving money on energy consumption and maintenance."

### Lighting solutions for the food processing industry

In food processing, cleanliness and hygiene are imperative to ensure product quality. Often sharp utensils and processing machines are in use. This requires safe operational lighting.

Today's food processing is often automated with machines that require less frequent supervision. Still, vertical illuminance is required for supervision via computer screens and control panels. Illuminance requirements also vary according to the task being carried out. Inspection of finished goods, cutting, and sorting require higher illuminance levels than for example washing, boiling and filling operations.

Where food is handled, the colour rendering should be good. Not only for colour-critical end products, but also to evaluate goods freshness during the processing. Pendant work station lighting with high Ra value light sources are an appropriate solution.

Plant atmospheres could be aggressive and may contain vapour, heat and dust. In such environments, luminaires should be protected with high IP rating. Enclosed luminaires with wide- or narrow-beam optics are a good choice. The luminaires should also be easy to clean. A two-week or even daily, cleaning schedule is common in many processing plants. Cleanliness is determined by luminaire design, material selection, surface treatment and IP rating. Luminaire enclosures should also prevent fragments of glass landing in food.