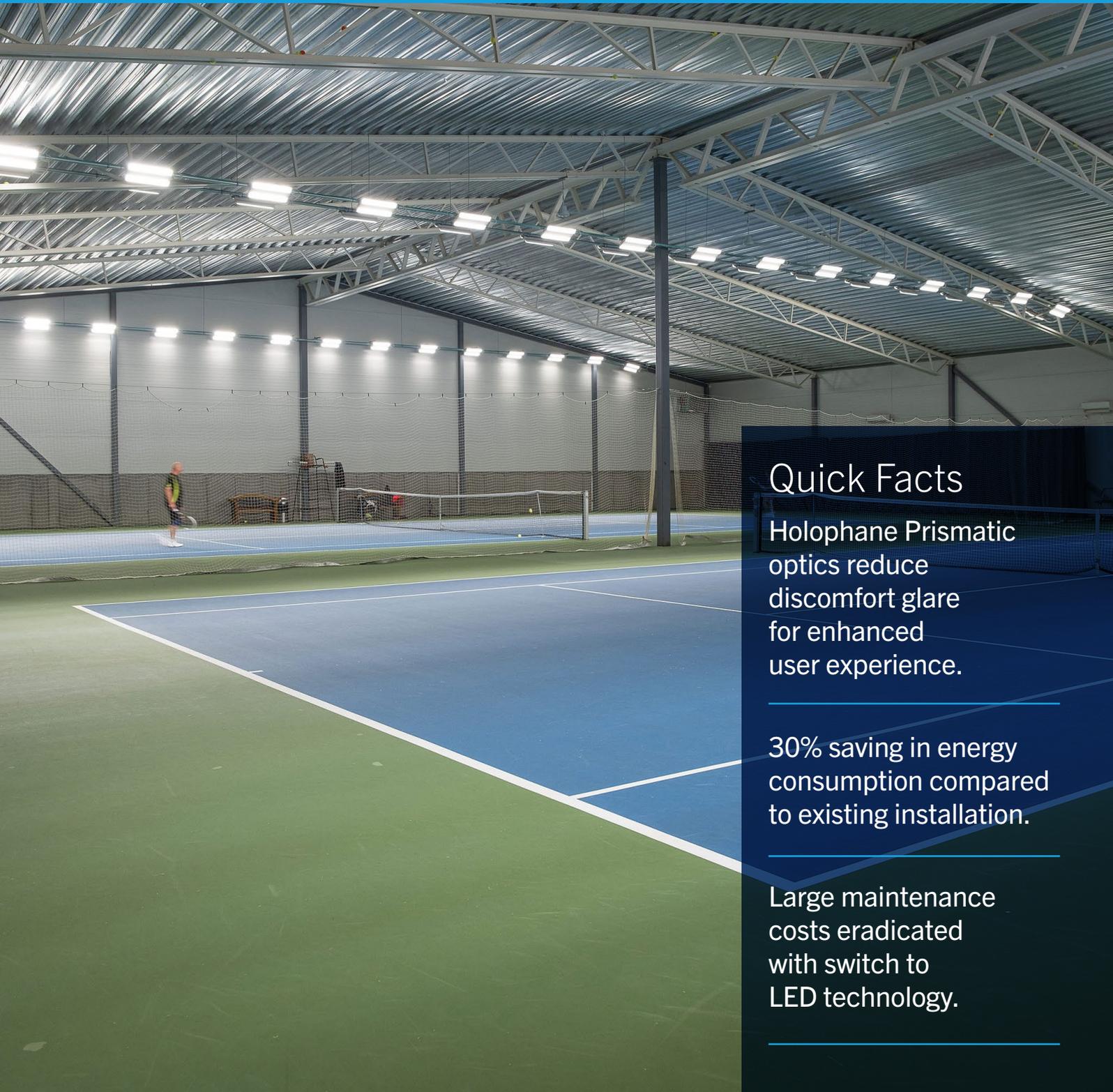


> CASE STUDY

GOTHENBURG LAWN TENNIS CLUB



Quick Facts

HoloPhane Prismatic optics reduce discomfort glare for enhanced user experience.

30% saving in energy consumption compared to existing installation.

Large maintenance costs eradicated with switch to LED technology.

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GOTHENBURG LAWN TENNIS CLUB



BACKGROUND

Gothenburg Lawn Tennis Club is one of the oldest in Sweden and was founded in 1900. The Club has been upgraded over the years and now consists of five outdoor courts and 16 indoor courts, two of which were added recently.

The courts were illuminated in the early 2000s using fluorescent fittings. Each fitting contained three 80W lamps and they were mounted at a height of 6m. A total of 40 fittings per court were used, 20 per long side.

The large number of lamps used (120 per court) is due to the courts being illuminated to a Class I standard of play as defined in EN 12193:2018. This international standard specifies an average over the Playing Area, PA, of 750 lux with 70% uniformity, Min/Ave.

CHALLENGE

The major issue with the existing installation was maintaining the required illumination levels when there were 120 fluorescent lamps used on each court. This issue was costly both in terms of time and money.

For this reason, the Club wished to reduce the amount of maintenance required. The Club also wished to save energy by adding a control system.

At this stage, the Club decided to ask a local lighting company, Tivalux, who had already been supplying lighting to the Club for over 15 years.



PRISMASPACE™

Patented high angle shield design feature which both protects the prismatic diffusers and minimises glare

THE SOLUTION

It was decided that the lighting equipment for the courts should be provided by Holophane due to their extensive experience of indoor sports lighting.

After evaluating the installation and the demanding lighting requirements, the Prismaspace was chosen as the best luminaire to illuminate the courts.

The Prismaspace consists of two optical modules with a patented design feature allowing them to be rotated independently in 15-degree steps. In this way, both the edges and the centre of the courts can be illuminated to achieve the high uniformity, over 70%, required.

These optical modules provide excellent volumetric illumination which gives superb visual comfort no matter what the viewing direction.

The luminaires are mounted on the sides of the courts, outside the Total

Playing Area (TPA), and thus cannot obstruct a view of the tennis ball even when a player hits a high lob.

In addition, the units are fitted with a high angle shield design feature which both protects the prismatic diffusers and importantly minimises the discomfort glare for the court users.

The Neutral White 4,000K LEDs have a colour rendering index, CRI of >80 which means that the whites and colours of the players' appear bright and easily recognised.

In terms of the reduction in maintenance, the rated life of the LED module used in the Prismaspace is 100,000 hours (L70B50@25°C) meaning that they last approximately six times longer than a typical fluorescent lamp used in many large indoor arenas.

The electrical load of the new installation is approximately

30% less compared with the old fluorescent installation. It was also found that, when installed, the achieved illumination levels were higher than the 750 lux required and so the new Prismaspace were dimmed a further 20%.

The lighting is controlled by a DALI Broadcast system with a master switch and presence detection. If no movement is detected after 10 minutes, the luminaires are dimmed to just 2% light output and this acts as visual guidance for anyone in the space.

A total of 64 No 214W Prismaspace luminaires are installed on the two courts.

The lighting design was carried out by Holophane's design team in conjunction with Tivalux, who are Holophane's partner in Sweden.





ROTATABLE OPTICS

Twin Optic



Optical Modules rotatable from
0° to 45° in 15° increments



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**GOTHENBURG
LAWN TENNIS CLUB**



