

Lighting Tools

for sales-promoting, energy-efficient
lighting of cold stores



Lumos® | LED luminaire system

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industry

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Lumos® LED luminaire systems – increasing value creation through technical innovation

A task that is admirably achieved by the Lumos® luminaire systems with their flexible LED technology. The Lumos® LED cold store luminaire has been especially optimised for applications in open cold stores, and sets new standards in terms of energy efficiency and lighting quality for the sales-promoting lighting of fresh goods.

Lumos® LED cold store luminaire 1 system – 7 advantages:

- Flexible system for any cold store type
- Optimal light prevents reflections, glare and shadowing
- Light colours matched for perfect goods presentation
- Innovative housing form avoids loss of cooling energy
- Lower consumption costs via electricity savings
- Long service life without maintenance costs
- Individual mounting for all cold store systems



Luminaire lengths, light colours and light distribution patterns can be adapted according to customer requirements thanks to maximum flexibility. The system can be installed into all cold store and deep freeze cabinets with simple mounting accessories, and innovative technology enables individual concepts for luminous flux, optics and basic construction. The Lumos® LED cold store luminaires guarantee optimal illumination with unique colour rendition.

Advantage 1: flexible system for all cold store types

Optimally illuminated goods increase sales success, because good light makes it easier for customers to orient themselves, and in addition improves their purchasing pleasure.

The Lumos® cold store luminaires offer a new quality for lighting within refrigerated cabinets, guaranteeing good light in all displays and illuminating each cabinet with a high degree of homogeneity. This is made possible by a combination of head luminaire and shelf luminaires. In addition, the shelf width is always illu-

minated in its entirety. Luminaires for standard shelf widths are available with the 1250 and 950 modules, and additional lengths cut according to customer requirements are of course also available. With their slender body the luminaires fit perfectly into all types of cold store equipment.

Various wattages are available for the head luminaires and shelf luminaires. In this way optimal lighting results can be achieved for all types of refrigeration system.



Complete illumination with only one head luminaire



As a comparison with additional shelf luminaires

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Two wattages

Light guides vision. In order to attract attention to products in the grocery trade, aisles are often illuminated somewhat less than the goods presented on their peripheries. This is why head and shelf luminaires are each offered with two wattages, suitable for the differing light levels in sales rooms.

A world's first: double light guidance in one head luminaire

The Lumos® LED luminaire system for the first time combines two light guidance patterns within one luminaire:

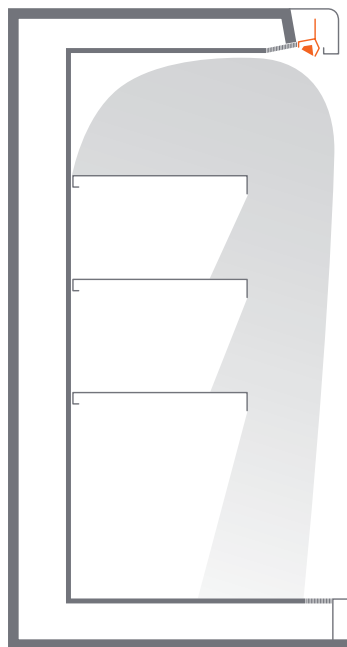
- The head luminaire creates homogeneous light along the shelf front to the shelf base via narrow light emission.
- It also completely illuminates the upper display with diffuse light.
- The shelf luminaire also emits homogeneous light for each shelf base.



Lumos® head luminaire

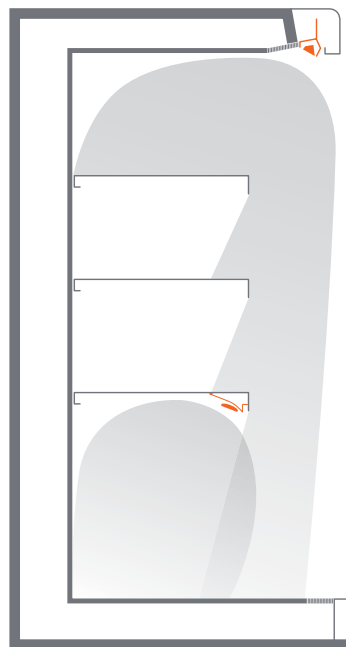


Lumos® shelf luminaire



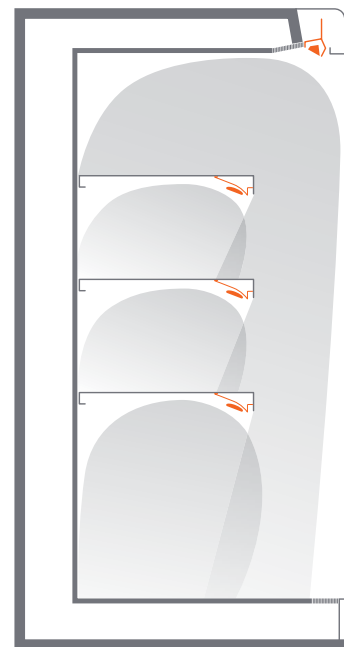
Configuration only with head luminaire

Thanks to a balanced control of light, the upper display and the shelf front are homogeneously illuminated from top to bottom. Conventional head luminaires with fluorescent tubes are only able to distribute light very unevenly, meaning that products below and placed further back on the shelf base remain in gloom.



Configuration with head luminaire and one shelf luminaire for the base area

As a supplement to the head luminaire, a shelf luminaire is used for presentation of goods on the shelf base. It creates additional accenting in the lower area.



Configuration with head luminaire and shelf luminaires for each shelf base

The lighting levels of the head and shelf luminaires are precisely matched. Whether in front or to the rear, all goods can be seen in their entirety, even when the first product rows are not filled.

Advantage 2: optimal light prevents reflections, glare and shadows

The first impression counts. Is the product tempting, and can all information be recognised straight away? Packaging can only make the most of its advantages in harmonious light.

The Lumos® cold store luminaire presents products to perfection. Many low power LEDs with their small light points create homogeneous light that is distributed diffusely within the shelving units via state-of-the-art optics.

The Lumos® luminaire system purposefully does without high power LEDs, as this popular LED technology,

despite suitable optics, creates light points with high glare on foil-packed goods and on the rears of shelf units. Standard fluorescent tubes and LED solutions available until now from other manufacturers have no special lighting technology at all in many cases, meaning that the rear panels of shelving in cooling cabinets may dazzle onlookers. The result: eyes need to readjust, and the attention of customers is then no longer directly concentrated on the product.

The Lumos® LED luminaire system is different: reflections are banished, gaining valuable time for rapid purchase decisions.



A sad fact in many cold stores: surfaces with glare. This means that goods packaged in plastic foil are especially difficult to perceive. The cause of this is usually direct lighting via a low number of high power LEDs, creating isolated points of glare on goods and packaging.



What all customers want: perfectly visible goods, with highly legible product information on the packaging. The high number of Lumos® low power LEDs ensure soft light, distributed evenly within the shelving.



The Lumos® cold store luminaire creates uniform and harmonious light

- Low power LEDs: no reflections on product surfaces
- State-of-the-art lighting technology: shadow-free presentation



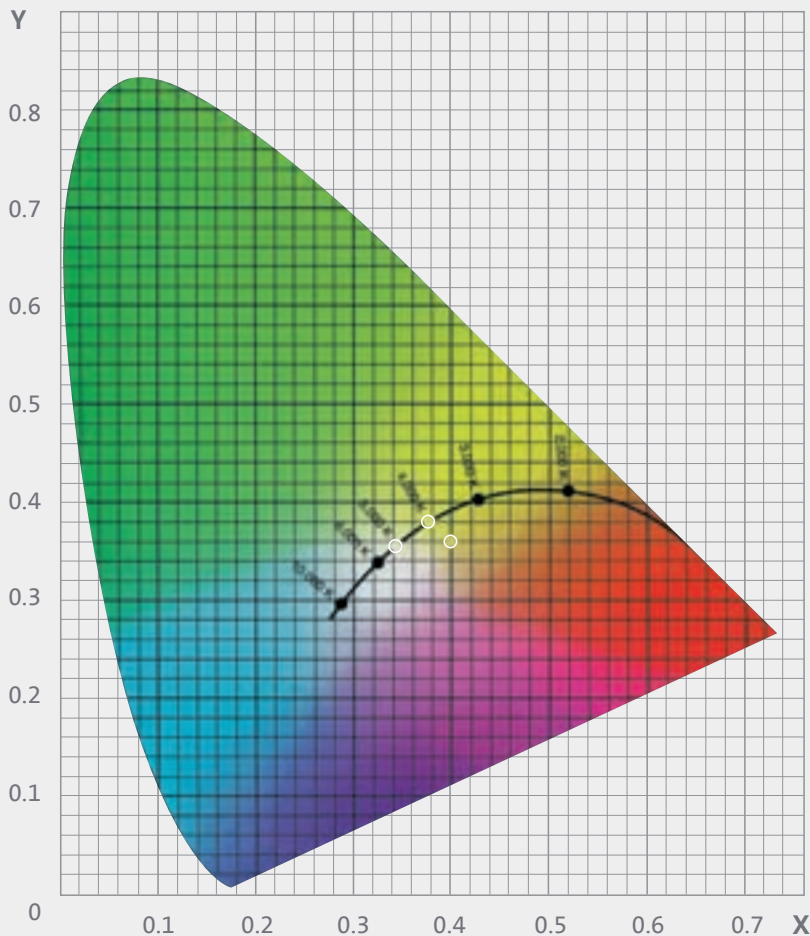
Advantage 3: light colours matched for perfect goods presentation

Meat should appear juicy, cheese fresh and milk cool. On an subconscious level these stimuli strongly influence the purchasing decisions of customers, because light colour triggers emotional impulses.

This is why special colour temperatures are available with Lumos® cold store luminaires for the appetising and stimulating presentation of various product groups. Neutral white guarantees colour-true light throughout the complete colour spectrum (RA < 85).

Warm white is used on the other hand for the presentation of meat and cold meat products, and a cool white light colour for fish.

The LED technology used is especially advantageous for meat products, but also for other UV-endangered goods. The technology emits no IR or UV radiation, thus protecting foodstuffs and packaging materials. Hence the Lumos® cold store luminaire with slight adaptations can be simply used for refrigerated cabinets displaying fresh meat.



Graphic: licht.de; only for visualisation, precise values cannot be deduced.

The targeted use of colour temperatures: only with a suitable colour temperature is it possible to achieve optimal product presentation in terms of colour. Special colour values have been defined for various product groups: warm white, neutral white and cool white. They differ by their physical components, for example various red or yellow components.



True-to-life colour rendition – achieved by the Lumos® cold store luminaires with neutral white light and special lighting technology. For the first time a deficiency has been convincingly eliminated that until now was typical for LED lighting: it was perceived as being artificial, and in some cases even with a certain grey tint.



Meat and cold meat products appear appetising – this sensory perception is triggered via a balanced red component in the warm white light.

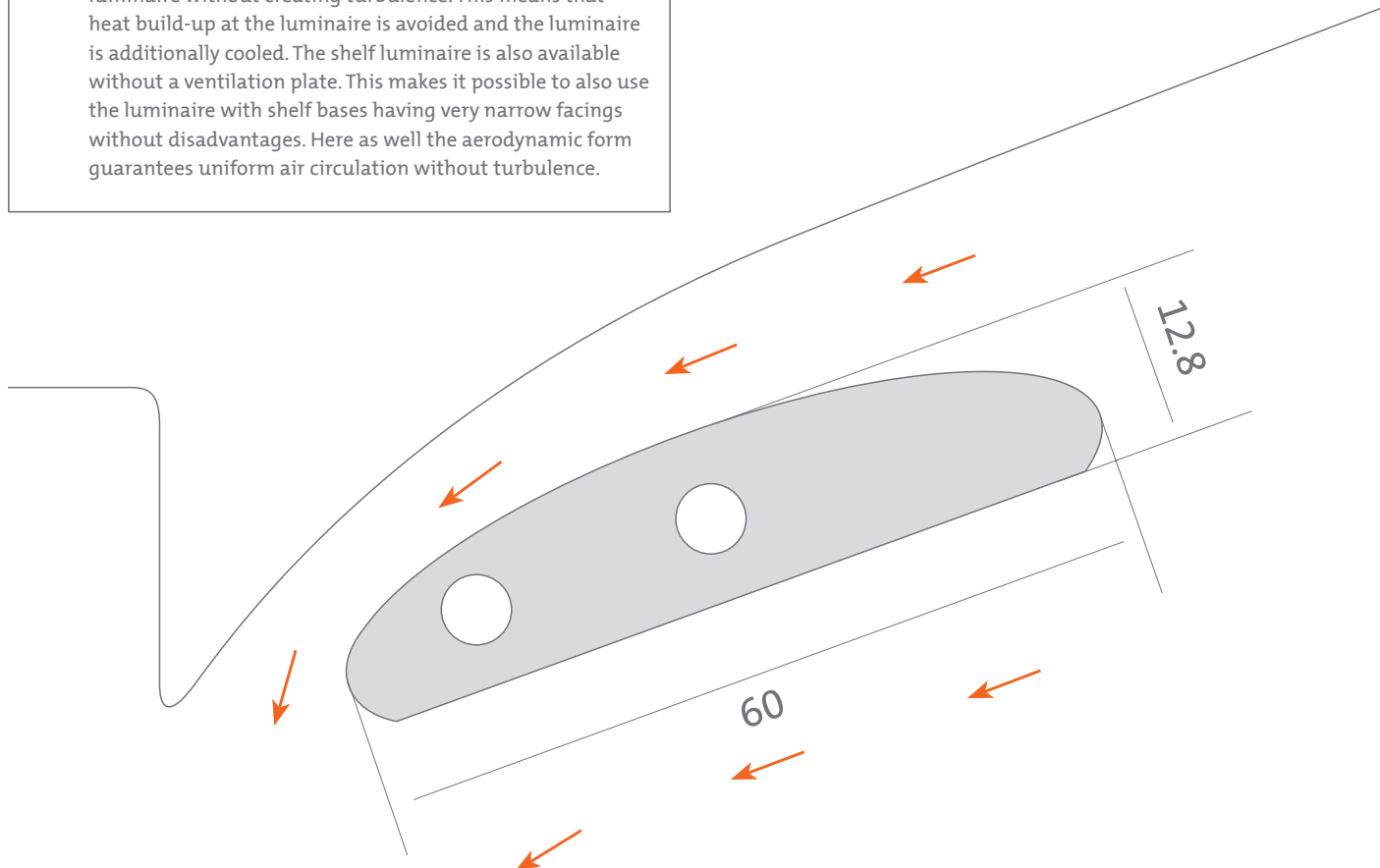


The feeling of a fresh catch and iciness are features of good fish displays. Cool white light supports this customer expectation.



The Lumos® cold store luminaire innovation:

The shelf luminaires are positioned in streamlined fashion within the air circulation between the shelf bases. The cold air flows between the bracket and the housing of the luminaire without creating turbulence. This means that heat build-up at the luminaire is avoided and the luminaire is additionally cooled. The shelf luminaire is also available without a ventilation plate. This makes it possible to also use the luminaire with shelf bases having very narrow facings without disadvantages. Here as well the aerodynamic form guarantees uniform air circulation without turbulence.



Advantage 4: innovative housing form avoids loss of cooling energy

Energy-efficient refrigeration and perfect lighting are no longer contradictions. Lumos® cold store luminaires produce no thermal radiation at the light emission aperture that could warm goods, thereby requiring cooling again. Thus development of heat familiar from fluorescent tubes and incandescent bulbs is no longer applicable.

And yet thermal radiation is inevitable with any LED luminaire, emitted from the technology contained within the housing. In order to dissipate this heat, many cold store luminaires require additional heat sinks. These however often cause turbulence and disturb the flow of air in the cooling cabinet. The result: increased energy consumption and greater costs.

The Lumos® cold store luminaire on the other hand fully implements the principles of modern refrigera-

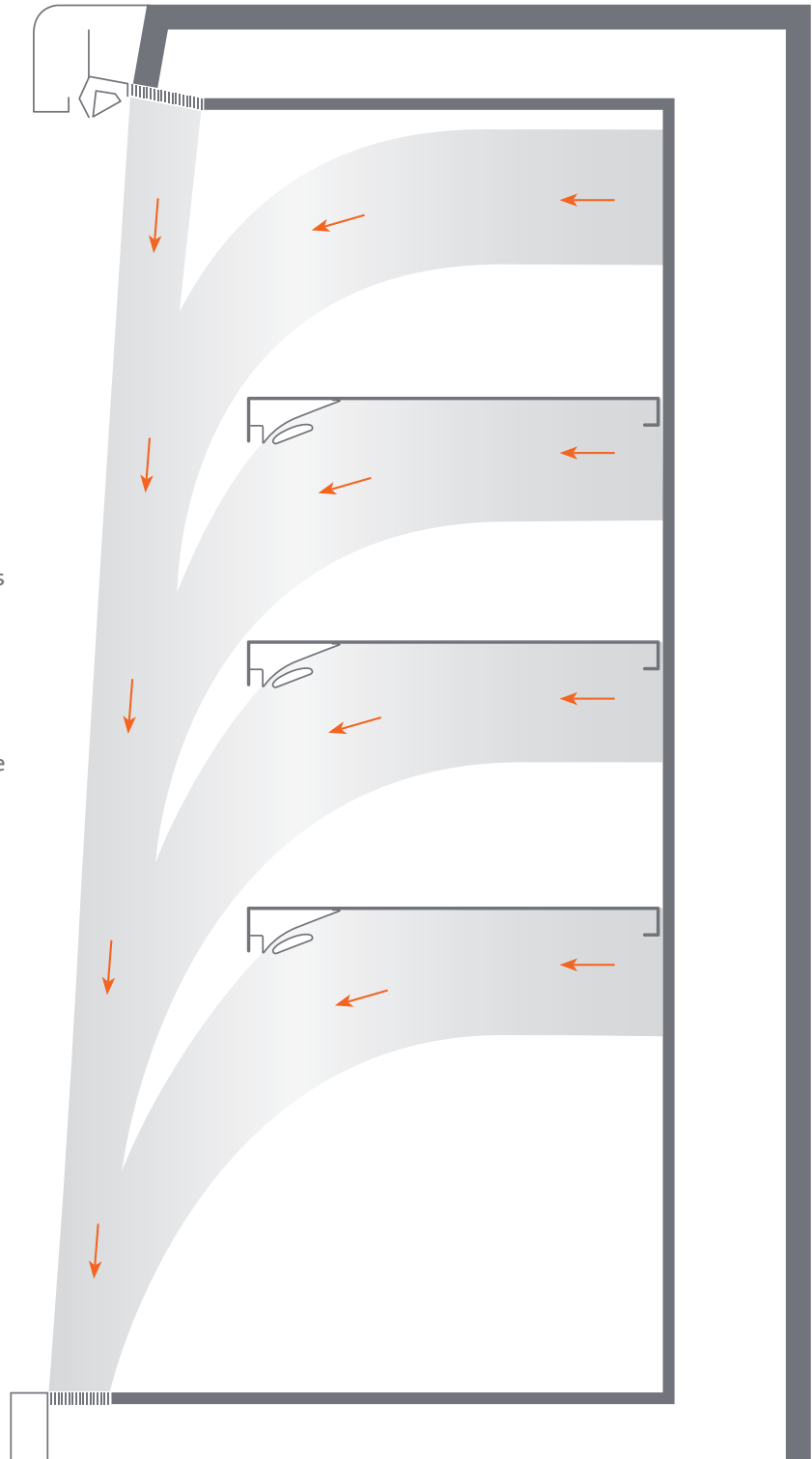
tion equipment: the streamlined housing of the shelf luminaire integrates itself into the flow circulation of cold stores. Thanks to low power LEDs, only very low and uniformly distributed heat is emitted to the housing, and this is transported out of the cold store with the flow of air.

The Lumos® LED cold store luminaires offer perfect lighting:

- LED technology avoids thermal radiation at the light emission aperture
- The energy efficiency of the refrigeration system is optimally implemented
- Low energy consumption via transporting away or cooling down of luminaire heat

Air flow in an open cold store

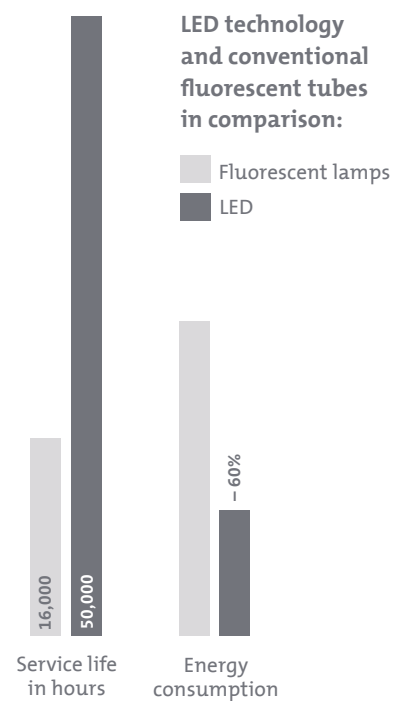
The Lumos® cold store luminaire makes use of the basic principle of modern refrigeration units, an air curtain: cold air continuously flows downwards via a discharge opening in the top of the shelf unit. This leaves cold air in the system and warmth in the peripheral room. In addition cold air is blown forwards from the rear, flowing into the cooling curtain. This air circulates downwards, is intercepted, cooled, and then blown out at the top again.





Advantage 5: lower consumption costs via electricity savings

LED luminaires are the most efficient solution for modern lighting with a high service life. Compared to fluorescent sources, electricity consumption with Lumos® cold store luminaires is reduced by up to 60%. In this regard the high quality and low power LEDs take full advantage of their performance capacity. What's more: whereas efficiency of fluorescent tubes sinks in cool atmospheres, the efficiency of LED technology is increased. This means greater luminous efficacy with minimal energy consumption.



Advantage 6: long service life without maintenance costs

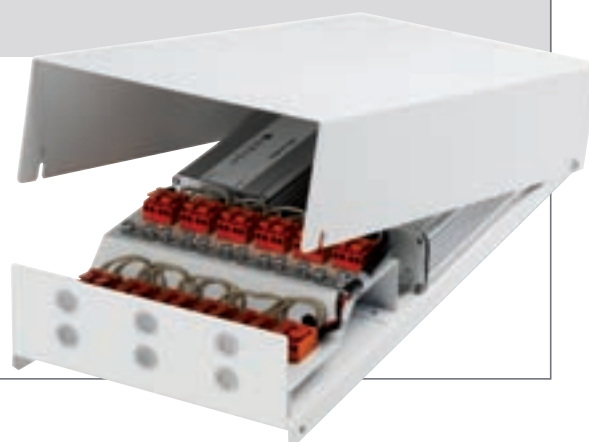
No maintenance costs, no failure times, no additional work. Once connected, the Lumos® cold store luminaire convinces with very dependable and defect-free permanent operation. LED luminaires even with room temperature have a very high service life, and this increases even more with lower temperatures. This means that they are far superior to classic fluorescent

light sources that must be regularly replaced. The system stands up to high hygienic requirements: the luminaires adhere to the safety standards of the IP43 luminaire protection rating and allow hygienic damp-cleaning. There are no cooling ribs, joints or other dirt-trapping locations, meaning that regular cleaning is quick and easy.

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Maximum safety in the complete system

Thanks to safety extra-low voltage of only 36 volts, customers and personnel are especially protected with the Lumos® LED cold store luminaires. The supply box for electricity connection is placed outside of the cool and damp atmosphere. Power connection, in contrast to many other systems, is via a plug-in system isolated from humidity. The 2-pole connection cable is reverse-polarity protected.

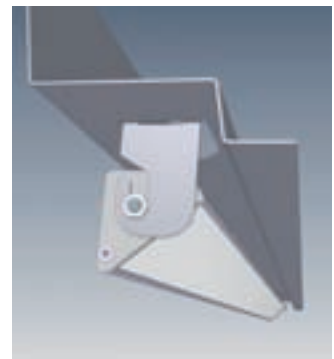
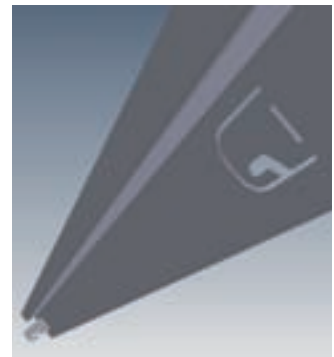
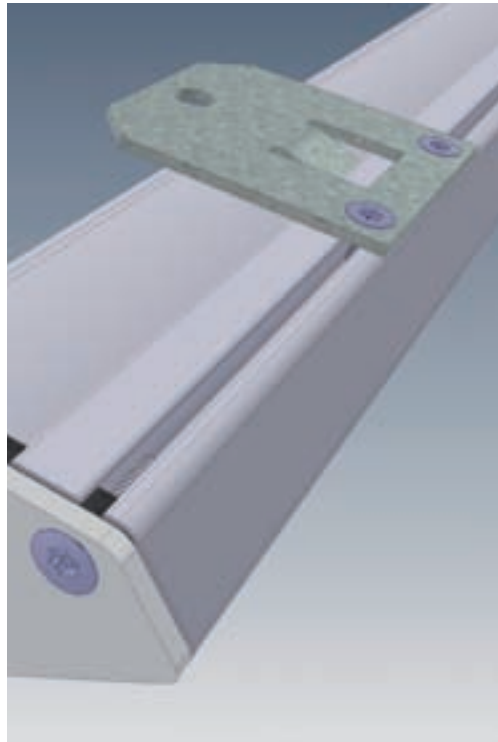
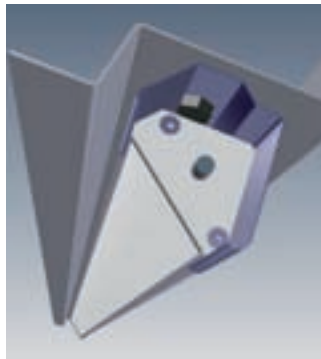
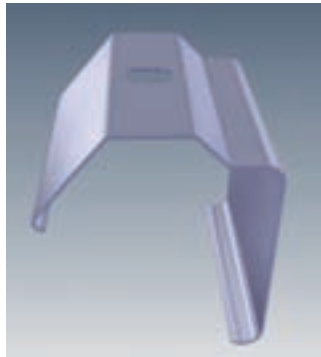


Advantage 7: individual mounting for all shelf systems

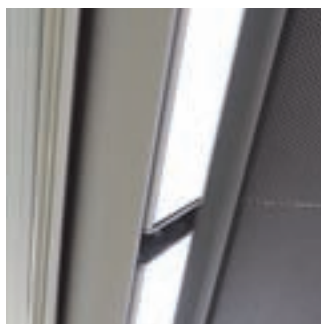
Variable mounting is a major advantage of Lumos® cold store luminaires. They can be installed quickly, easily and without special tools in all standard refrigeration systems, either mounted from above, via

their sides or with brackets and catches. Mounting hardware sets for standard cold stores can be ordered for retrofitting purposes.

Mounting variations for the head luminaire



Fixing clips for flexible mounting to refrigeration units are available (above left), and also variable angle brackets and sheet pieces as adapters (above). Brackets integrated in the cold stores can also be used, to which the luminaire is fastened with only one screw (above right).

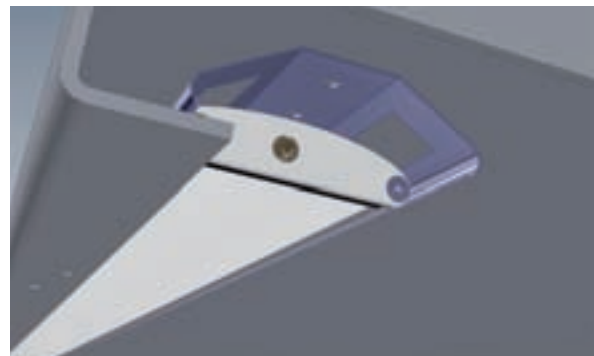
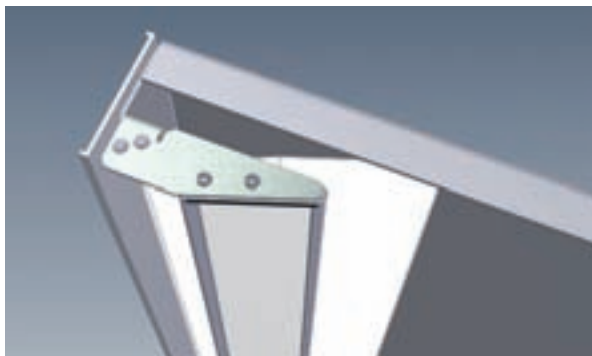
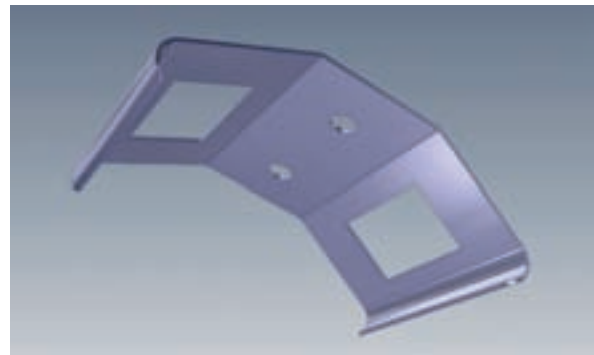
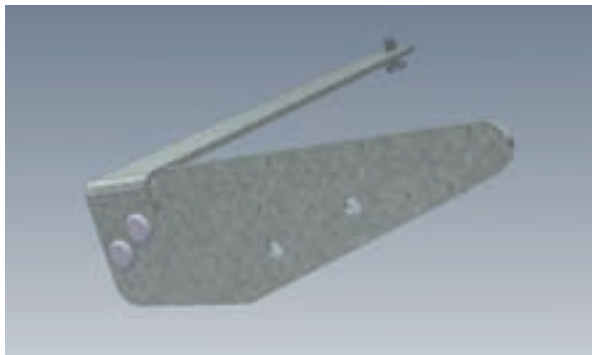


The integrated head luminaire fits perfectly into all standard refrigeration constructions.

Decisive: the requirements of customers define the mounting system. Because just as the possibilities for modern cold stores are highly diverse, so are the requirements for installation of corresponding luminaires.

This is why Siteco offers a unique service: luminaires are equipped with individual mounting systems in accordance with customer demands, and especially matched to the construction of specific cold stores.

Mounting possibilities for the shelf luminaire



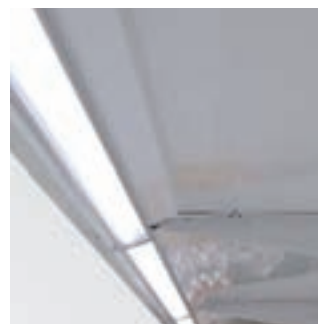
The bracket fastened to the face end of the shelf luminaire can be fixed to the underneath of the shelf base.

The retaining clips can be connected to the shelf base from below if required. The luminaire is clicked in with one hand movement.

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Permanent alignment

Once aligned and mounted, the Lumos® cold store luminaires guarantee consistently optimal illumination. This is made possible by the well-designed fastening technology. Even with thorough cleaning the position and therefore the beam angle of the luminaires is not altered.



The slender design enables the shelf luminaire to be completely concealed by the front panel.

Siteco: innovative lighting tools for the future

Enthusiasm for light is the fundament upon which Siteco lighting instruments are created, tools that enable the designing of light and lighting.

Precise knowledge of optical demands forms the basis for all lighting tools from Siteco. This expertise flows into road lighting, the lighting of sports arenas and sales-promoting solutions for retail spaces. We declare a committed approach to quality, Made in Germany. Our aim is to not only adapt new technology but also to integrate this into a complete optical concept.

Formerly Siemens, now Siteco, we have been successfully deploying this philosophy in the competitive arena for decades, and as a result are one of the five largest manufacturers in the European luminaire market.

Our customers can reach us in all European countries. A European retail expert network ensures that cross-border projects are implemented rapidly, safely and efficiently.



Lighting must approach its tasks as diversely as the expansive variety of goods on offer. Siteco offers solutions that can be used as much for exclusive showroom presentations as for the sales-promoting display of fresh goods and apparel.

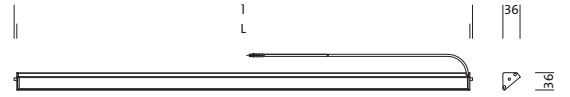
Sales rooms are divided into various zones, ranging from entrance areas to cashpoints, and each zone has its own requirements and standards. Lighting instruments from Siteco more than fulfill such standards and support the sales process with good light.





Lumos® with LED | Head luminaire with wide distribution cover of PMMA

Lumos® with LED head luminaire for mounting behind the roller blind of the housing of open cold stores | two light patterns in one luminaire: extremely narrow distribution along the shelf front and wide distribution for the upper shelf surface**; with diffuse distribution cover | for separate gearbox* | housing of aluminium profile, anodised; cover of PMMA



	L	l
16W/18W	934	945
21W/24W	1234	1245

Protection rating: IP43
 Insulation class: III
 Protection symbol: F
 Temperature range: -40°C..+25°C

* Gearbox with ECG | ready for connection with mains terminal, pre-assembled cable with plug connection to luminaire, l= 2m
 ** Specific light colours for optimal goods presentation:
 • approx. 4000K for 'normal goods'
 • approx. 3500K for meat and cold meats
 • approx. 5000K for fish and cheese

• rapid advances in LED technology enable distinct energy efficiency improvements. Siteco uses this for reduction of power consumption of the luminaire for the same luminous flux



Lamps	Luminous flux (lm)	Lamp wattage	L (mm)	Wt. (kg)	without CG, F Order No.
4000 K					
LED	940	16W	945	0.6	5GK51A07GH5
LED	1130	18W	945	0.6	5GK51A07GP5
LED	1250	21W	1245	0.8	5GK51A07NS5
LED	1500	24W	1245	0.8	5GK51A07NX5
3500K					
LED	1020	18W	945	0.6	5GK51A07GK3
LED	1350	24W	1245	0.8	5GK51A07NV3
5000K					
LED	940	16W	945	0.6	5GK51A07GH7
LED	1130	18W	945	0.6	5GK51A07GP7
LED	1250	21W	1245	0.8	5GK51A07NS7
LED	1500	24W	1245	0.8	5GK51A07NX7

Mandatory accessories

Article	Wt. (kg)	Order No.
ECG, for LED max. 150W	0.7	5GK90150VG



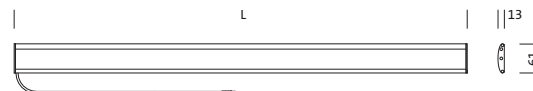
Lumos® with LED | Shelf luminaire with wide distribution cover of PMMA

Lumos® with LED shelf luminaire for mounting to the shelf underside in open cold stores | asymmetric light distribution for homogeneous illumination of a shelf level**; with diffuse distribution cover | for separate gearbox* | housing of aluminium profile, anodised; cover of PMMA

Protection rating: IP43
 Insulation class: III
 Protection symbol: F
 Temperature range: -40°C..+25°C

* Gearbox with ECG | ready for connection with mains terminal, pre-assembled cable with plug connection to luminaire, l= 2m
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* rapid advances in LED technology enable distinct energy efficiency improvements. Siteco uses this for reduction of power consumption of the luminaire for the same luminous flux



11W/13W	L
14W/18W	934
	1234

Lamps	Luminous flux (lm)	Lamp wattage	L (mm)	Wt. (kg)	without CG, F Order No.
4000 K					
LED	620	11W	934	0.6	5GK52A07GA5
LED	780	13W	934	0.6	5GK52A07GC5
LED	830	14W	1234	0.8	5GK52A07NE5
LED	1040	18W	1234	0.8	5GK52A07NL5
3500K					
LED	690	13W	934	0.6	5GK52A07GB3
LED	920	18W	1234	0.8	5GK52A07NG3
5000K					
LED	620	11W	934	0.6	5GK52A07GA7
LED	780	13W	934	0.6	5GK52A07GC7
LED	830	14W	1234	0.8	5GK52A07NE7
LED	1040	18W	1234	0.8	5GK52A07NL7

Mandatory accessories

Article	Wt. (kg)	Order No.
ECG, for LED max. 150W	0.7	5GK90150VG

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