TASTEFUL RECIPES FOR LIGHT

Illuminating food applications delicately

FAGERHULT

”There is no sincerer love than the love for food.

George Bernard Shaw

Irish dramatist.

TASTEFUL RECIPES FOR LIGHT

Introduction.

IN YOUR HANDS you are holding our very own cookbook, the first one we have ever created. And as confusing as it might seem, we are still very much in to lighting. But actually – we are also in to food.

We have provided lighting solutions for food retailers all over the world for some time now, and will continue to do so. We have made fruits and vegetables look more appealing, made meat and fish look extra fresh and we have guided shoppers amongst the miles of aisles, shelves and displays.

We believe that the right lighting can increase sales and make grocery shoppers feel more inspired. Therefore we have chosen to present tasteful recipes of light in this modified "cookbook", including luminaires and accessories not only suitable for food retail environments, but for specific groceries. We also share useful tips for planning the lighting solution itself and how to save valuable energy when doing so.

Bon appétit!

Cooking - for whom?

Food is not only about providing your body sufficient calories – at least not in the Western world where it has become a culture, a lifestyle expressing who we are. But how do such trends impact food retailing?

YOU MIGHT HAVE noticed the increased awareness and interest in the whole essence of food: balanced and healthy diets, a dedicated craftsmanship of culinary art, a revival of rural fascination, organic and local shopping etc. And on top of that, an explosion of cooking shows, conceptual restaurants, and a young urban population who find it trendy to grow their own herbs and stuff their own sausages. Never before have consumers been as selective, interested, and passionate about food - or so quick to embrace new trends and niche ingredients.

As long as such global cult of foodism continues to drive consumers it is ever more important to be compelling with new experiences, retail theatre, new ingredients and restaurant concepts. This type of movement combined with fast digital and technological evolution will impact food retailers since customers have new ways of approaching food in addition to cooking. Furthermore the increased competition from online retailers and convenience stores force supermarkets to innovatively attract shoppers.

Maybe it is time to rethink the way we look at food retailing, as we are experiencing a huge paradigm shift concerning everything from how to attract shoppers, what foods are purchased, and why, to where the purchases actually take place. Pretty soon your local grocery shop will not only provide groceries; they will also tempt you with interactive app functions, in-store nutritionists, restaurants and bars: everything to create an enjoyable shopping experience for busy and stressed inhabitants.

Traditionally supermarkets are generally divided into categories and departments. Is it time to expand the idea of a supermarket and consider a more holistic and innovative approach of how it does, or does not, meet the lifestyle and nutrition needs of the shoppers? Is it time to view the physical and virtual shops as an integrated structure to provide a widespread experience of taste, wellness and enjoyment rather than a group »

» of non-related departments? An ideal scenario would be a shopper feeling and believing that the shop is designed for him/her - that is, friendlier, personal and interactive.

MANFLUENCE

Despite of the new "womenomics" revolution in which women control more than 80% of the purchases in the US, men's influences over food related purchases is increasing. They have become more powerful in the kitchen, cooking and planning the meals, and are consequently also spending more time in supermarkets.

This has influenced food retailers to modify their environment and start targeting men. Some supermarkets even have experimented with "man aisles" filled with male-oriented food, and promotions to target and trigger impulse shopping.

RURBANISM

Increased urbanisation, large cities of concrete, pollution, and overcrowding have made citizens long for the opposite: the authentic rural roots. To live in the big city but live as an agriculturalist, to abandon the city chic and to make a living in a much simpler world. This is increasingly demonstrated through a greater interest in sustainability, growing your own herbs, and purchasing locally produced groceries and products that are supporting the local economy.

Such rural interest not only impacts what types of groceries are being displayed but also how the groceries and foods are stored in the shops. We are seeing trends towards more rural aesthetics, with natural materials that seek to resemble a more rustic space. Larger chains such as Tesco have understood this trend and have bought more authentic brands such as Harris + Hoole and Giraffe to fulfil such customer needs.

THE MILLENNIALS & DIGITAL GENERATION

The increasingly aging population of the "baby boom" generation might have great economic power; still, it is time to take a look at the consumers of tomorrow, because they will become increasingly influential. Millennials, those born between 1982 and2001, are often passionate about food, but also concerned about where it's from and how it's prepared. Nevertheless, studies have showed that Millennials are deal-seekers and are much more focused on finding the lowest price over brand loyalty.

Then again those born in the 21st century – the skilled digital generation effortlessly integrating with the tablet screen in their hands, expect retail brands to engage them with responsive technology that eases the purchasing process and inspires them.

Source: *The Future Laboratory: "Retail Futures 2013". Midan Marketing: the 2013 "Manfluence" report.*
Phil Lempert, www.SupermarketGuru.com, "Top ten food trends 2013".
** Thom Blischok in an interview for SN, www.supermarketnews.com; 'Trends' Report Outlines Opportunities* in Evolving Retail Landscape


99p

*"Supermarkets are not going away. They may get smaller, they may get a bit more high-end, they may get more unique, they may offer a range of services ... but what's very clear is that to survive, they have to create a unique value equation for the shopper."**

Thom Blischok,
Chief retail strategist and senior executive advisor, Booz and Co.

Delicious light in 15 minutes

We can assure you that planning a satisfactory and energy efficient lighting solution takes much more than 15 minutes. Nevertheless we would like to take the opportunity to quickly describe a few illustrative steps of how this can be done.

SPARE US 15 minutes of your time and let us share a short overview of important aspects of how to create suitable lighting in supermarket environments. Lighting is so much more than luminaires installed in the ceiling - it guides and uncovers; it enhances and evokes emotions of all kinds, you just need to harness its power. At Fagerhult, we are of the opinion that the lighting is equally an important part of in-store branding as, for example, the interior and the displays. That is why we have our Fagerhult Light Agency™ and Fagerhult O.D.D™ offer where lighting concept development and on-demand design combine to create tasteful lighting solutions.

A well-planned lighting installation in supermarkets not only decreases energy consumption, it can also create great atmospheres, guide the shoppers and highlight products and portrait the groceries in a favourable way, (later we will share some "recipes" for how this can be done). After all, shopping for groceries is all about engaging the senses and here the lighting can definitely add that extra spice to the setting. Also, food and groceries are sensitive to UV radiation that can make it mature faster, which means that choosing the right light source is of great importance.

GENERAL & ACCENT LIGHTING

Usually supermarkets and grocery shops have featured higher levels of general lighting, creating quite a plain lighting experience. This is often a result of higher ceiling heights but also simply a tradition and the quest for energy efficiency. Nevertheless the spaciousness of the shop is emphasised by the implementation of such uniform lighting. General lighting from old technologies can now be upgraded and replaced by LED technology to not only gain efficiency but also to decrease energy consumption.

But what about adding a bit of drama to the traditional food scene, making the route to a filled grocery basket a bit more exciting? There are strong tendencies towards including accentu- »

» ating spotlights in the lighting solution for more dynamics and contrast, making the shop environment more inspiring. Also, the use of spotlights steers attention towards products. Controls are also something that can be included to increase energy efficiency but also to create a more vibrant and responsive lighting installation. *Read more about controls on p. 60.*

AISLES & SHELVES

A supermarket is usually built from a various rows of aisles of shelves and displays. It is important to illuminate all products in them - from top to bottom and also the many signs that are attached above or next to them. At Fagerhult we have kept this in mind and have created a product, iTrack Dupio, with adjustable reflectors that can be individually adjusted toward both graphics and the products in the shelves. Also we have suitable LED sticks for integrated lighting, Relay Efficient for example - a great energy efficient luminaire for illumination in shelves.

FRUIT & VEGETABLES

This important section, the heart of the food shop, serves an explosion of colours, freshness and an extensive variety of groceries which often makes it a given halt in the route of the shoppers. It is important that all these tasteful groceries, freshness and colours, come across in the best possible way - here the lighting plays a great part. By installing luminaires with a light source suited for the particular product it becomes possible.

Traditionally, accentuating spotlights with metal halides installed with different filters has been used to enhance the different colour variations of the groceries; another alternative has been to use a high pressure sodium 2500 K that gives a warm, golden light that emphasises warm colours. But now the rapid LED development has made it possible to choose from a selection of LED modules that are as suitable for this task as traditional light sources and filters. The innovative LED technology has a much higher energy saving potential than we normally see in traditional use of conventional light sources in combination with filters. In the old technology you first produce "all the colours of the rainbow" then you "filter out" the colours you don't want for the actual task and hence you waste a lot of energy. With LED you gently add the colours to the spectrum and generate only the spectral colours you want and need – no filtering, no losses, just the right colours. *Read more about our new LED spotlight for fruit and vegetables, Marathon Midi LED Glow, on p. 42.*

BREAD & CHEESE

Just loving those carbs? Well, you are definitely not alone. A nice sandwich is a must on many people's breakfast tables »

General & accent lighting

Aisles

Fruit & vegetables

Bread & cheese

Meat & fish

Wines, water & sodas

Food in refrigerators

Checkouts

» – especially if it's sourdough bread. Luckily larger supermarkets often have a very extensive bread section with several displays of both newly-baked as well as pre-made breads. Nevertheless you don't want to get the impression of unbaked bread, you want a crisp, golden and fresh one. This is partly achieved by the baker of course - but also by the lighting. To really boost the freshness and the warm yellow tones, we recommend luminaires with suitable LED modules carefully chosen for this type of applications – for example Marathon Midi LED Glow.
**Read more about our new LED spotlight for illumination of bread & cheese on p.46.*

MEAT & FISH

Eating healthily is a subject on everyone's lips these days and the LCHF (low carb, high fat) diet has gained enormous popularity - people are indulging in proteins like never before. But as the prices are climbing, therefore when you buy a nice steak you chose it carefully. Tired and greyish meat is not appealing. Ideally it should radiate redness and moistness as well as fish and seafood should sparkle and shine. The right light sources, for example LED modules, can tune in such colour variances better than others, and also with minimal IR and UV impact. Cool light can make the meat look greyer. Cooler light is, on the other hand, favourable when it comes to fish and seafood; it can intensify any ice surrounding the food but also the blue tones of the fish. Now there are satisfying LED modules that exceeds metal halide. There are even LED modules that can enhance both spectrums of red and blue without producing any IR or UV radiation and consuming much less energy. Marathon Midi LED Rich is equipped with such a LED module. **Read more about our new LED spotlight for illumination of meat & fish on p. 34.*

WATER, SODAS & WINES

Sparkling waters should appear crisp and cool whilst wines, for example red wines, rich and full. Once again the light source itself is important in making this happen. Also the bottles are often placed close to each other on deep shelves. In such shelves LED sticks can be conveniently integrated for a smooth enhancing light that makes the bottles stand out. In wine sections it can be flattering to use accentuating spotlights to create more dynamics and exclusivity.

FOOD IN REFRIGERATORS

A lot of supermarkets have lately invested in an upgrade in refrigerators with enhanced sealing which retains the cool within the fridges, resulting in greater energy efficiency. In such refrigerators LEDs are beneficial, since they are not only small and convenient; they are »

» energy efficient and radiate no light in the form of IR and UV that can damage the foods. LEDs are the only light source that radiates more light the colder they get; hence they are the obvious choice for the cold temperature in the fridges.

CHECKOUTS

In spite of the evolving technology, which enables new ways to pay for your groceries, there are still the traditional checkouts that the customer has to pass before leaving the shop. In an ideal supermarket there are as fewer long queues as possible, but in reality this is not always so. The lines can be extensive and winding, with shoppers patiently waiting for their turn. This is a perfect time to inspire and make them spontaneously buy chewing gum, sweets or a magazine. The lighting should be just as well planned as the display setups around these areas. Enhance and accentuate these products and the special offers that are the last ones the customer sees.

Also, there are possibilities to create personality with a characteristic pendant over the checkouts, but nevertheless, it is still important to have a satisfying general light creating comfortable working environment for the cashiers.

CAFÉS

A lot of larger supermarkets have some kind of café or restaurant enclosed in the shop concept – a place where shoppers can relax, socialise and gather energy before or after grocery shopping. In such areas there is really a possibility to create atmosphere and identity in terms of the interior but also the lighting. These areas do not necessarily have to be as uniformly illuminated as the larger supermarket area itself – there is more room for creativity and to create a comfortable and inspiring atmosphere.


The new standard of perfection.
Yours.
Your perfect latte.

For those new ingredients and influences

The retail landscape is changing fast. New consumer behaviours, trends and technology are constantly setting new roadmaps in retail and therefore also for tomorrow's food retailers. This is how we can help create a great lighting recipe when new ingredients appears.

THERE ARE collections of smaller food brands that are very trend-sensitive and consumer insight-driven - resulting in unique and authentic concepts. This might not be the way for all traditional and big-box food brands, but they can be influenced by elements of, for example, a specific trend.

Whether it is a trend, the vision of a unique expression in the shop, or a desire for a specific product, we can help you realise this with our Fagerhult O.D.D™ (On Demand Design) offer. We can help you to either modify an existing product or to tailor one specifically for your needs. Our skilled lighting professionals at Fagerhult and passionate lighting creatives at the Fagerhult Light Agency™ have vast experience of such processes – quick adaptations are part of our day-to-day work.

FEELING THIRSTY?

An illustrative example of a Fagerhult O.D.D™ case is one that we have done for one of our clients in the beverage business. Three years ago this client started to exchange the existing T8 fluorescent fittings to an LED solution of 11 W instead of the 18W fluorescent solution. They were certain that LED was the right technology for the future. But now, now they wanted to upgrade the solution again - since the LED technology had advanced they wanted an even more efficient solution that continued cutting their energy consumption. Fagerhult retail was one of the suppliers that received the tender.

We provided a delicate and efficient LED solution for integration in the long shelves where the bottles were placed. As the test shops were successfully approved, Not only is energy efficiency achieved LED also generates less heat that can affect the groceries and liquids - fluorescent tubes can reach up to 60-70° Celsius compared to LEDs' 37-40°.

Nevertheless the specification of such an LED product was very detailed; the product should deliver a specific

FAGERHULT | O.D.D™

Illustrated above are sketches of on-trend luminaires well suited for the food applications that could be presented or developed in our On Demand Design process.

energy output per shelf, provide a specific lux value, MacAdam bin code and colour code. It should have a certain number of light points per stick, and appropriate length in relation to the shelves. Also, it had to be easy to install, and allow for the possibility to be connected in a series – that is quite a lot of criteria to fulfil.

But thanks to the Fagerhult O.D.D™ process we could provide a LED stick that responded to those needs. After careful analysis and research we could present an option of 4000 K equipped with 70 light points, which provided a very uniform and even illumination of the bottles. This LED stick could also be adjusted to just the required length to perfectly fit in the shelves. The demand for decreased energy consumption and maintenance was also fulfilled when we reached an energy output of 5.5-6 W per shelf, better than the 7 W requested – and still managed to deliver a LED stick with a light output that exceeded the expectations.

After the product was presented and approved, a test installation was implemented in one shop to be able to evaluate the pricing, technology and mounting. The result of this evaluation was very satisfactory and the LED stick was chosen for many more shops. Today this LED stick, the result of an On Demand Design process, has been integrated in our standard product assortment since it proved to be so successful. We call it Relay Efficient.

FASHIONABLE FOOD PENDANTS

The Fagerhult Light Agency™ work by carefully monitoring trends in different retail sectors, and are up to date with luminaire designs that complement such trends. In the food retail sector, for example, rustic-looking pendants connected to a rural atmosphere have been requested more frequently – thanks to the Fagerhult O.D.D™ process we can propose such pendants.

Crystal Clear
Crystal Clear is Fagerhult's environmental initiative. It's our way of emphasising the importance of working in a way that has the least possible environmental impact.

We are continuously working on improvements and constantly striving to come up with ideas and initiatives that make us proud and ensure that we remain a sustainable company. We want our customers to be confident that we have the knowledge necessary to propose the most sustainable lighting solution.

Low carb(on dioxide) lighting

Our natural way of planning light is to consider the installation thoroughly and to be as energy efficient as possible. We also know that decreasing energy consumption is a concern of almost every food retailer.

WHEN CREATING A lighting concept for a shop it is crucial to consider the energy efficiency. More than 30 % of a shop's energy cost is produced by the lighting and for that specific reason it is important to make effort in optimising the solution – for the sake of the environment but also for the sake of the retailer who can decrease their energy bill significantly. Today with all new technology it is much easier to design a lighting concept that is brand adapted, exciting and energy efficient.

At Fagerhult we take time to do an accurate analysis and are always questioning if there is any light that is redundant, if any lower wattages could be used, and whether a control system or dimming would be effective. Also, we carefully consider how the lighting should be aimed to avoid wasting energy by aiming light on empty spaces like the floor.

The evolving LEDs are also making it easier for us to provide lighting technology that is not only effective but also efficient. LED technology has really had a great impact and to a large extent starting to replace fluorescents and metal halides. The technology is highly energy efficient and durable, provided that the LEDs are used in luminaires specifically developed for them.

On the next page are a couple of diagrams and tables that will explain this subject and give you a brief idea of what is possible to do today, for example a comparison of three different set-ups of one shop. »

Table 1 - LCC

Name and type of luminaire	Zone Single MT 35W *(excl. ballast)*	Zone Evo II LED 32W *(incl. ballast)*	Marathon MT 70W *(excl. ballast)*
Number of luminaires	*64*	*54*	*54*
Total installed wattage	*2,8 kW*	*1,7 kW*	*4,3 kW*
Used energy/year	*13,8 MWh*	*8,6 MWh*	*21,3 MWh*
Total CO^2 emission/year	*5710 kg*	*3586 kg*	*8852 kg*
Total energy cost/year *(app € 0,1/kWh)*	*€ 1423*	*€ 894*	*€ 2207*
Total luminaire solution cost over 10 years *(incl. light sources & maintenance costs)*	*€ 25 348*	*€ 16 807*	*€ 31 042*
Pay-off period - compared with existing 35 W concept	*Existing/comparison*	*Approximately 2,5 years*	*More expensive just after 2 years*
Pay-off period- compared with existing 70 W concept	*1 year*	*1,5 years*	*Existing/comparison*

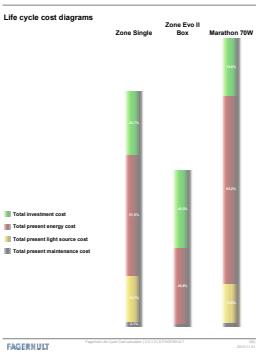


Illustration 1

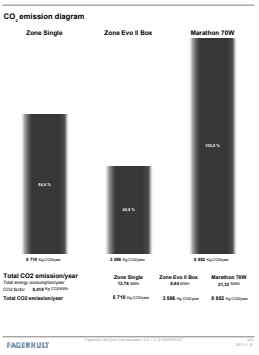


Illustration 2

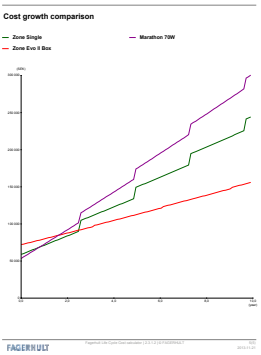


Illustration 3

» **TABLE 1 - LCC**

While the existing concept consisted of 35 W MT luminaires, the client wanted any future solution to produce more light for a brighter shop. We proposed a concept with 70 W MT. But we also wanted to show the benefits of a concept idea with LED, both of which were compared against the existing 35 W MT concept.

Since the 70 W proposal evidently would be brighter, we decreased the number of fixtures by approximately ten and to provide an equal comparison we did the same in the LED concept. The calculations clearly show that the LED-solution is the most energy efficient and cost effective solution. This is due to the much lower energy consumption, approximately 50 %, which in turn helps to reduce the operating costs. Given the much lower energy consumption and running cost for the LED solution you could say that after 2,5 years after the pay-off (i.e., 5 years after installation) you have saved the equivalent cost of another lighting solution for a new shop. We believe this encouraging fact would support abandoning a brighter 70 W MT solution.

Table 2 - savings

Food store concept	Shop area *(m²)*	Savings *(in %)*	Extra possible savings when using a control system
Small	*400*	*50 %*	*> 30 %*
Medium	*900*	*55 %*	*> 30 %*
Large	*2000*	*50 %*	*> 30 %*
Maxi	*7000*	*30 %*	*> 30 %*

The three smaller diagrams below show the calculations of table 1. The first illustration displays the Life Cycle Cost diagram where it is possible to see the different costs in a concept investment; energy, light source costs and maintenance. Second illustration displays the CO^2 emissions from the three different lighting concepts and the third the pay-off time.

TABLE 2 - SAVINGS

In food shops it is possible to make substantial energy savings by installing a well planned lighting installation with the right products and technology. Table 2 briefly shows how, by doing just that, we have helped one of our clients during the last five years decreasing energy consumption.

CONTROLLING THE LIGHT

As table 2 indicates, controlling the light can contribute of even greater energy savings. This can be achieved by either using sensors that detect daylight or movement, or by dimming the luminaires. Dimming has proven to be very beneficial since the lighting does not always have to be on full power. By dimming a luminaire by 10 %, it is hardly detectable to the human eye; still, it will create energy savings of 10 %.

We believe that controls can decrease energy but also affect purchasing patterns. At this very moment we are involved in a light study together with the Finnish hypermarket Anttila. Here the effects of how dynamic, controllable lighting affect shopping behaviour is investigated by comparing three different lighting scenes.

Tasteful recipes for food - and lighting design

We have described different groceries and the importance of the right lighting emphasising each one of them; bread, vegetables, meat, and fish, for example. Here we present a few recipes, but also our specific lighting design recipes of how to make them extra appealing.

LET US INTRODUCE Christian Andersson; he is the head chef at restaurant "NOBA" (Nordic Bar/Gastro) located in the heart of Gothenburg city. It comes as no surprise to find that rustic flavours and Nordic home cooking inspire Christian. Quite frequently slow cooked stews can be found simmering on his stoves. When it comes to inspiration of the actual grocery shopping Christian is fond of strolling around in his local market hall.

"I love the authentic feeling that is created within the market place. It always inspires me to shop and evidently to cook. I like touching and feeling the fresh food presented and also enjoy receiving the personal contact with the merchants," Christian explains.

His ideal supermarket and food store are those that manage to achieve the same atmosphere as just described – warm, welcoming and inspiring to browse. When asked about his reflection of the lighting in food shops he states that too bright and cool lighting can give an impersonal and industrial impression.

"Now when reflecting over the lighting, I realise that I prefer a warmer, dynamic atmosphere", Christian concludes.

At Fagerhult we want to participate in achieving such an environment.

In the rustic restaurant NOBA, neoclassical dishes and Nordic tapas from locally produced groceries are served - traditional but with a modern twist.That is excatly how we would describe our new spotlights, Marathon Midi LED Rich and Marathon Midi LED Glow. We challenged Christian to create four tasteful gastronomic recipes with the following main ingredients; meat, fish, vegetables and bread. Afterwards we will do the same, but our main ingredients will be luminaires and light.

NOBA, Nordic Bar/Gastro, Gothenburg, Sweden.

Christian Andersson, head chef at NOBA.

Poached cod loin

Serves 2

- 200 g of cod loin per person

Sandefjord butter sauce:

- 200 ml cream
- 150 g butter
- A splash of white wine
- 2 shallots
- 1 tbsp crème fraîche

Pickling liquid:

- 100 ml white wine vinegar
- 200 g sugar
- 300 ml water
- 1 whole white peppercorn
- Bay leaf
- Carrots

Cod live in salt and brackish water from the Gulf of Bothnia to the North Atlantic. Nowadays this fish is growing in popularity and is a favourite ingredient on menus all over the world. The subtle flavour of cod makes it ideally suited to a wide range of seasonings and accompaniments.

INSTRUCTIONS:

Sandefjord butter sauce:

Fry the shallots in butter, but do not allow them to colour. Add the white wine and reduce it by half. Pour in the cream and simmer until it thickens. Gradually add the remainder of the butter (which must be at room temperature), while stirring constantly. Also add a spoonful of crème fraîche.

Put the pan to one side, season the contents with salt and pepper and some freshly squeezed lemon juice. Sprinkle in a little chopped parsley before serving.

Pickled carrots:

Bring the white wine vinegar, sugar, water, bay leaf and peppercorn to the boil. Leave to cool. Add the sliced carrots and leave to stand (ideally for a day or so before serving). Season the cod with salt and pepper.

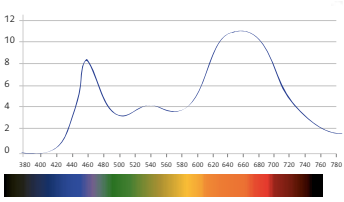
Bring some water to the boil in a saucepan with a little white wine and butter. Turn down the heat until the water is simmering. Put the cod loin in the water and leave to simmer over a low heat for a few minutes.

Served with boiled potatoes sprinkled with dill.

Lighting design recipe: Illuminating fish

- Install a track such as iTrack, which enables flexible lighting possibilities of both general and accent lighting.
- Make sure that there is sufficient general lighting, such as iTrack Line or Dupio, in the area of the fish counter.
- Install a set of Marathon Midi LED Rich and aim them appropriately at the fish.
- Sit back and enjoy the perception of great looking fish and seafood.

Marathon Midi LED Rich



Marathon Midi LED Rich: Spectral distribution

ABOUT THE MARATON MIDI LED RICH SPOTLIGHT:

Marathon is our popular spotlight that has received yet another sibling - Marathon Midi LED Rich. This version is tailor-made for the fish and meat sections and equipped with an LED module that is specifically selected and tested for illuminating such foods.

Above we present the spectral distribution of this specific LED module. This demonstrates the balance between the colours coming from the LED module. It is important to remember that any colour you want to enhance in the displayed food needs to come out of the light source. So in these diagrams you can ensure that the colour you need is emitted from the fixture. By developing LED modules for specific purposes like this fish/meat module you get top quality light with very low energy use compared to the old fashioned lamp and filter solutions. As shown above this module is strong in the blue- and red spectrum. This fact makes it suitable for illuminating fish counters that stage both red fish and seafood, such as salmon and shrimps, but also ice and silver skinned fish types. This is an advantage that makes it easy and convenient to plan the lighting without having to install different luminaires, light sources or filters.

Baked duck breast

Serves 2-3

- 300 g duck breast

Ragu:

- Savoy cabbage
- 2 red apples
- 300–400 g shiitake mushrooms
- A knob of butter
- Salt and pepper

Creamed Jerusalem artichokes:

- Around 10 Jerusalem artichokes
- 400–500 ml cream
- Salt and pepper

A succulent duck breast cooked to just the right shade of pink can have much more flavour than turkey, chicken or goose. Combining the rather fatty duck meat with a slightly acidic and sweet accompaniment produces just the right balance of tastes. One tip for removing excess fat is to brown the skin of the duck well and then pour most of the fat out of the frying pan.

INSTRUCTIONS:

Ragu:

Shred the cabbage and put it briefly into boiling salted water. Remove the cabbage from the pan and cool it in cold water.

Fry the mushrooms and cabbage in a little butter and season with salt and pepper. Add the pieces of apple just before serving. Mix in some chopped herbs to add colour.

Creamed Jerusalem artichokes:

Cook the peeled artichokes gently in the cream and then blend them in a food processor to a smooth consistency. Season with salt and pepper.

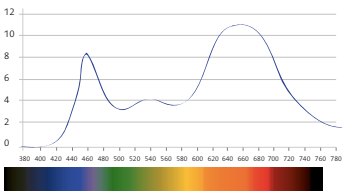
Season the duck breast with salt and pepper and make two crosswise cuts in the skin. Fry the duck with the skin side down in a dry frying pan over a high heat until the skin is golden brown.

Bake the duck in the oven at 120°C until the internal temperature reaches 55°C. Leave to rest for a few minutes before serving.

Lighting design recipe: Illuminating meat

- Install a track such as iTrack, which enables flexible lighting possibilities of both general and accent lighting.
- Make sure that there is sufficient general lighting, such as iTrack Line or Dupio, in the area of the meat counter.
- Install a set of Marathon Midi LED Rich and aim it at the meats.
- Sit back and enjoy the view of moist and rich meat without any greyish tones.

Marathon Midi LED Rich



Marathon Midi LED Rich: Spectral distribution

ABOUT THE LIGHTING:

iTrack Line or Dupio, with the possibility to adjust the reflectors, gives a good general lighting as a base in the meat section.

To accentuate the meats our new Marathon addition Marathon Midi LED Rich is an appropriate choice of spotlight. It is equipped with a LED module not only good when illuminating fish, but also meat too. This is a result of the spectral qualities of the LED module, enhancing both warm red tones but also cool tones as seen in the spectral distribution curve above.

Creamy root vegetable soup with croutons

Serves 8-10

- 4–5 carrots
- Around 400 g parsnips
- 1/2 swede
- 5 potatoes
- 1 Spanish onion
- 2 cloves of garlic
- 200 ml white wine
- Fresh chilli to taste
- Fresh thyme, chopped
- 1.5 l water
- 2 vegetable stock cubes
- Salt and pepper
- 1 slice of white bread

Scandinavian cuisine with its distinctive, authentic and robust flavours is more popular than ever. The ingredients that play an important role in traditional Scandinavian dishes include root vegetables. A wide variety of root vegetables is available. They are not only cheap and full of vitamins, but also very tasty. They can be combined with one another to make nourishing soups and casseroles.

INSTRUCTIONS:

Peel and chop the root vegetables, chilli, onion and garlic, together with a few sprigs of thyme. Fry everything in a saucepan with a little butter. Add a splash of white wine and bring to the boil.

Add the water and stock cubes and simmer until the root vegetables are soft. Mix with stick blender and season with salt and pepper. Sprinkle the croutons over the soup.

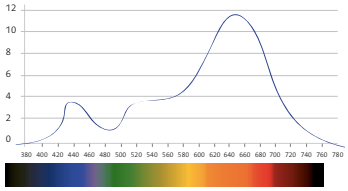
Croutons:

Remove the crusts from the bread and cut it into small squares. Mix the bread with oil and sea salt and bake for a few minutes in the oven at 180°C until the croutons are crisp.

Lighting design recipe: Illuminating vegetables

- Install a track such as iTrack which enables flexible lighting possibilities of both general and accent lighting
- Make sure that there is sufficient general lighting, such as iTrack Line and Dupio, in the area of the fruit and vegetable section – don't be afraid of accentuating light that highlights all the different variety of groceries and all of the wonderful colours.
- Install a set of Marathon Midi LED Glow and aim it at the vegetables.
- Sit back and enjoy the view of a colourful set of great looking fruits and vegetables.

Marathon Midi LED Glow



Marathon Midi LED Glow: Spectral distribution

ABOUT THE MARATON MIDI LED GLOW SPOTLIGHT:

The Marathon spotlight family is accompanied by yet another appropriate food luminaire - Marathon Midi LED Glow. This version is tailor-made for the fruit/vegetable and bread/cheese section and equipped with an LED module that is specifically selected and tested for illuminating such foods.

Above we present the spectral curves of the specific LED module and as showed, it is strong in the warm coloured spectrum making it suitable to illuminate fruit and vegetables, which bring out the warm tones in these groceries.

Cumin crispbread

10–15 crispbreads

- 25 g yeast
- 500 ml lukewarm water
- 275 g wheat flour
- 300 g rye flour
- A few pinches of ground cumin
- 1 tsp salt
- Sea salt

Thin, hard crispbread is a traditional Scandinavian bread which has its origins in Sweden in the 6th century. Just as in this recipe, you can experiment with different spices to liven up the strong flavour of the wheat and rye. Many different types of crispbread are produced nowadays and creating new variants has become a trend at some restaurants. Home-made crispbread not only tastes good but, spread with butter and sprinkled with sea salt, also adds a special touch as an appetizer before a meal. Furthermore, it is low in calories and keeps for a long time.

INSTRUCTIONS:

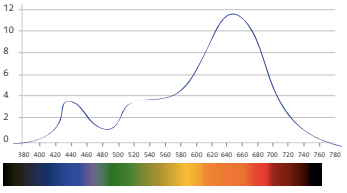
Crumble the yeast into the warm water and mix together well. Then add the flour and the cumin. Knead the dough until it is smooth and leave to rest for around half an hour.

Shape the dough into a round on a floured work surface. Roll it out thinly and prick it with a fork. Sprinkle a little sea salt on top. Leave the dough to rise for another few minutes and then bake it in the oven at 225°C until it is crisp and golden brown.

Lighting design recipe: Illuminating bread

- Install a track such as iTrack which enables flexible lighting possibilities of both general and accent lighting.
- Make sure that there is sufficient general lighting, such as iTrack Line and Dupio, in the area of the bread/cheese section – don't be afraid of accentuating light that highlights all the different variety of breads and cheese.
- Install a set of Marathon Midi LED Glow and aim it at the bread.
- Sit back and enjoy a warm and golden bread and cheese section.

Marathon Midi LED Glow



Marathon Midi LED Glow: Spectral distribution

ABOUT THE LIGHTING:

To accentuate the bread and cheese it is possible to use spotlights combined with general lighting. Marathon Midi LED Glow is equipped with a LED module that has demonstrated to be strong in the warm coloured spectrum making it suitable to illuminate groceries that radiate similar colours. This fact makes the light of Marathon Midi LED Glow enhance the warm golden tones in freshly baked bread making them look extra appealing and crisp. For that reason it is also appropriate to illuminate cheese.

FAGERHULT

When expectations are running high

Wanting to get a taste of a really efficient LED spotlight for those high supermarket ceilings? Great! We are now launching the new Zone Evo family, Sync and a 4500 lm addition to Marathon. These luminaires provide solutions that address that exact need.

SOME FOOD SHOPS are cosy, intimate and modest in size - often situated locally in the neighbourhoods of the city. Others are the complete opposite; large, prominent and bold - positioned in the suburbs where the shop floors spread out generously. In the latter, higher ceilings are more common. In such environments it can be a bit trickier to provide a dynamic combination of both accentuating LED spotlights and general lighting since the effect of the LED spotlights has not been good enough in ceilings of up to 4.5 metres in height. Until Zone Evo, Sync and Marathon.

Zone Evo is one of our latest spotlights that was derived from a careful technical evolution of our faithful Zone Point. Throughout the years the product has evolved according to customer demands, as well as the technical advancements of LEDs. Now the updated cone shaped Zone Evo have a version that comes in the generous lumen package 4500 lm - Zone Evo II LED.

Yet another geometric expression, the square, is represented in Sync, a spotlight version that distinctly contrasts with the others due to its angular design. Just as Zone Evo, Sync is also available in high lumen packages up to 4500 lm. There is also a controllable DALI version for iTrack with a dim range of 10-100 %.

Finally the popular Marathon will be accompanied with yet a version, one of 4500 lm.

These spotlights can be used in supermarkets with high ceilings where a truly effective spotlight with long lifetime is required. At such ceiling heights, the tracks where the general and accent lighting is installed do not have to be suspended any lower than 4-4.5 metres. This will make sure that the groceries, not the lighting installation, will steal the attention of the shopper.

At Fagerhult we never include an LED module in a luminaire that is not as efficient, or more efficient, than traditional metal halides. Therefore we have been waiting patiently for such a module to emerge. And now, finally, the technology is good enough to produce one. Due to this advancement we are proud to present a high lumen LED spotlight that is more effective than one with metal halide. And this is something we know will satisfy the pickiest gourmand.

Tantalising installations of ours

We have worked with several supermarkets but also other retailers and brands where food and drinks have been the essence of business. Presented below are selections of such cases.

ICA

One supermarket chain that we have continuously worked with for several years is the Swedish chain ICA. Decreasing energy to specific levels (12-13 W/m²) has always been a central goal at ICA - as well as the business interest that lies in cutting energy cost. For that reason we have been engaged in several energy efficiency projects where we have managed to create energy savings up to 50 % by doing inventories, measurements, systematic LCCs, replacing old T8 fluorescents to T5 and planning the lighting design thoroughly. Mostly our lighting installations have a pay-off time of three years and despite of saving energy the shops turn out much more inviting and enhances the groceries in a better way. Generally we manage to decrease energy levels to 12 W/m², which is in line with the central energy requirements.

ICA in Hindås and ICA Maxi in Haninge are two examples where successful lighting installations have been implemented by Fagerhult. In ICA Hindås a complete lighting upgrade was installed. By using iTrack, iTrack Dupio and accentuating Zone Points the light was not only more commercial and welcoming - the energy bill was decreased by approximately € 460 a month (saving 7000-9000 kWh/month), and this in spite of supplementing the cooling with another compressor enhancing it by 50 %. Furthermore, the customers described the atmosphere and experience of the shop to be light, fresh and easy to navigate, a fact the shop owner was »

ICA Maxi, Haninge


19.95
KRYDDOR


FÄRSK FISK
SKALDJUR

ICA Maxi, Haninge

» extremely satisfied with. The combination of spotlights and fluorescents was also much appreciated – as well as the flexibility of the lighting installation where the staff could rearrange the luminaires when moving interior and merchandise. Also iTrack Dupio, with its adjustable reflectors made it possible to aim the general light towards both the groceries and graphic signs.

With its impressive 10, 000 square metres ICA Maxi in Haninge is Sweden's largest ICA shop, a shop where we also had the benefit of being the main lighting supplier. Thanks to Fagerhult O.D.D™ we could provide suitable products for this particular shop and its premises. First we created a suspended arm with fix points where Marathon spotlights could be installed – despite of the high ceiling. We also created a special bracket that could be mounted directly on our standard product Dupio. This initiative made it possible to fit and attach Dupio on to the function ceiling that was used. Instead of developing a new version of the luminaire we solved the problem with a mounting accessory – by doing so we could provide a solution in a swifter and time efficient way.

STARBUCKS

Starbucks had a desire to upgrade and improve their current lighting solution and so turned to Fagerhult for guidance, advice and products when it came to switching to LED lighting. After initial meetings with Starbucks exploring a potential switch to LED, a new shop in Nottingham was presented, the location being an old grade 2 listed building which »

» once acted as a hotel. After a design review a concept was proposed which focused on the reduction of luminaires when compared to their current solution, differing levels of light in various parts of the shop to provide contrast, and a fully costed energy and maintenance reduction programme.

Pleiad G3 downlight was selected for general lighting due to its technical glare reduction device. The G3 was the perfect choice for consumers who wanted a comfortably lit environment in which to grab a quick coffee, hold informal business meetings, or meet with friends and family. In the takeaway area of the shop, these fittings were positioned at close centres to provide a brighter environment whereas in soft seating areas for example, fewer fittings were used for a softer level of ambient light.

To provide accent lighting to the artwork on the walls and the perch seating (where people tend to consume their products faster), Marathon Recessed 1100 lumen spotlights were used with both narrow and medium beam reflectors. These provide strong levels of contrasting light in these key areas and allow for a dynamic, visually interesting space in which people can enjoy their beverages. Finally, in the serving area, Marathon track mounted 2000 lumen spotlights with medium beam reflectors were employed to highlight the menu boards, as this is the main retail focus of the shop. In the main, this solution provided a 41% reduction in energy consumption when compared to their existing solution and reduced their maintenance costs to £0 for a period of 5 years. »

Starbucks


MY STARBUCKS REWARDS
1 Load and activate your card in-Store
2 register at Starbucks.co.uk
3 Start earning rewards

Pret-A-Manger

PRET-A-MANGER

One food retailer that takes its green responsibility is the leading UK sandwich and coffee stop chain Pret-A-Manger. They emphasize the use of natural ingredients and all sandwiches are made on the day of purchase in a kitchen at each location. Food left unsold at the end of the day is collected by charities and distributed to the homeless. Sandwiches are packaged in paperboard rather than sealed in plastic and these are a few of many initiatives that make them an aware and sustainable company.

With regards to lighting, Pret wanted flexibility over the course of the day and to ensure that the ambience in their shops should evolve to meet the changing needs of their consumers. Working closely with Fagerhult, they selected the Noc Spot track mounted spotlights to provide the accent lighting within the shops. Equipped with a high quality LED module, this luminaire offered exceptional colour rendering combined with advanced electronics, which enabled controlled light in a way that provided a shop environment that Pret's customers and staff demanded. Also this type of lighting control decreased the energy consumption in the shop when the luminaires were not always at full output.

Four different lighting scenes were created depending on the time of the day. In the morning rush when customers want to get in and out quickly an energizing lighting scene with high levels was used. During midday when people want to sit down and enjoy their lunch a more intimate scene was used. In the evenings the third lighting scene took this concept one step further with a lower lit ambiance for people to relax and wind down. The last and fourth lighting scene, "last man out", turned all luminaires off with the exception of a few carefully chosen luminaires that ensures the brand messages are seen throughout the night.

AUCHAN

A recent collaboration is the one with the French international retail brand Auchan. In the Auchan hypermarkets everything from food, electronics, clothes and home interior can be purchased.

Auchan wanted a supplier of accent lighting - and for each of the different areas of commerce they had a technical specification in which a certain level of lux was required for the different working heights of the luminaires. For example; at heights of 0,8 metres, (where the groceries/products are displayed) 900 lux was required, when the luminaires are installed at 3,3 metres. They were also looking for a comfortable lighting with little glare – and of course one that would reduce their energy consumption. We gladly met these requirements.

Fagerhult got the mission of supplying lighting to both the commercial space and the back office. The solution that will be provided is an accentuating lighting solution of Marathon LEDs 3000 lm for the open sales area in the shop. The spotlight will be equipped with reflectors in different colours and LED modules of both 3000 K and 4000 K regarding of what section in the shop that is being illuminated.

This lighting solution will be supplied in 2014 in super- and hypermarkets of the Auchan Group in countries such as; France, Spain, Luxemburg, Italy, Hungary etc. In the near future the objective is to evolve the solution with additional lighting solutions of general lighting and more powerful projectors.

Pret-A-Manger

Future cooking – innovative outlooks on lighting

In the introduction we highlighted trends and consumer behaviours that impact food retailers, making the premises of the physical shop progress. As a lighting partner we want to be able to balance such a progress.

IN A SHIFTING RETAIL world we constantly need to gaze at the horizon to be a relevant partner of light. Therefore we always have something cooking. We strongly believe that the combination of new technology, well-planned lighting design and knowledge of in-store branding can enhance the shopping experience, guide the customer and evidently increase sales.

One particularly interesting aspect of such a combination is intelligent and adaptive lighting solutions. Such lighting enables functions such as sensing the presence of shoppers, informing, leading the way by visual focal points and the possibility of varying the levels of illumination by dimming. Therefore intelligent and controllable lighting is a versatile tool, which contributes to keeping the retail atmosphere interesting and up-to-date from one day to the next. And we get the great benefit of reducing energy consumption.

The dynamic changes for lighting can involve tunes of white and RGB or variances of luminous intensity. Such changes can be controlled by pre-set premises or by sensors or monitor detectors. DALI is a protocol for the digital communication between components of the lighting installation and encloses the luminaires, the sensors and the control units. DALI creates great possibilities for flexibility and variation in the lighting design. By using DALI the lighting can be dimmed, switched on and off, it also enables the recall of lighting schemes, time-controlled changes and to the possibility to individually adjust different luminaires. If sensors and motion detectors are included in the system you can create responsive lighting solutions

When discussing controls within the retail lighting sector, a number of different factors impact the near- and long-term development; global evolvement, economics, technology and the environmental discussions. Already the exchange of lighting technologies has begun - from Dichroic Halogen to HID - and now LED. Some retailers have even shifted directly from Dichroic to LED since the LEDs of today are comparable and competitive to HID.

The advantage of LED technology is that it enables control of all of the lighting and that is particularly beneficial in retail lighting. Since a couple of decades, the HID have been the most used light source in retail lighting projects. Initially this light source could not be dimmed and controlled in an efficient way. However, about five years ago, the possibility arrived; but unfortunately there were still no benefits or savings in cost. But now with the advent of LEDs we are finally there.

»

Pret -A-Manger have used lighting controls to adapt and change the lighting sceneries/atmospheres during the day.

>> **LIGHTING CONTROLS IN RETAIL - WHY?**

Well, because of a number of reasons. First of all, because of savings in energy and carbon footprints. For ten years, Fagerhult Retail has been working with this quite successfully. We have been able to help our clients reduce their energy consumption by as much as 50% in general. With just thinking outside the box and not walking down the same old route as always. And now, today, we also have the possibility to drive this even further buy using control systems where we can adjust and fine tune all light sources used in a retail project.

We can also do a totally different set-up with the lighting schemes in terms of dynamic lighting and enhancement of merchandise in different ways. The lighting schemes can be controlled and tuned depending on the number of consumers in the shop, what time it is, which day of the week or what time of year it is. Controlling the light in such ways can actually boost the shopping experience and consequently also the brand of the shop.

HOW?

Buy developing a Fagerhult branded control system, specifically for retail purposes. A control system adapted for different areas in a shop and also for different sectors of retailers e.g. fashion/food. Two completely different sectors, still having common features to benefit from. All consumers want to be entertained and get a certain feel of personalised shopping experience. This is where retailers can benefit from a control system, whether it is Monday lunchtime, Saturday afternoon or special event. The control system can be adjusted according to a clock, a motion detector, personali-

Fagerhult's Wireless e-Sense Connect lighting control system.

sed via an app in your smartphone, by the manager of the shop or by the amount of daylight. All depending on what the retailer/brand want to achieve with the control system and the shopping experience.

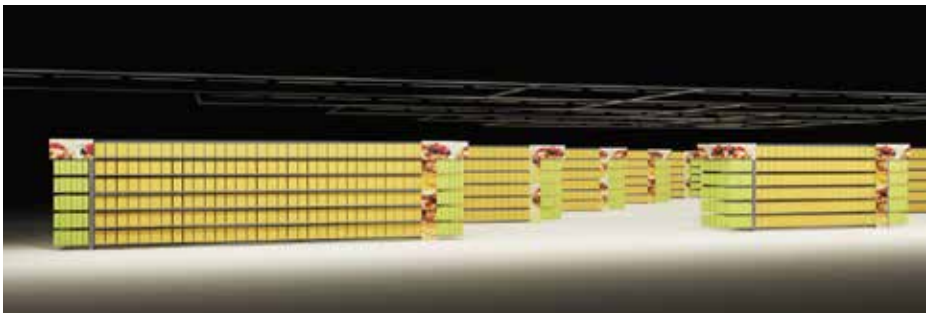
WHEN?

Today. All this is possible to achieve with the technology we have in our hands today. But we do want to drive this even further into the future. Just imagine if, in a couple of years from now, there were to be personalised lighting opportunities in retail areas. Then you could make your own lighting scene depending on your emotional feeling at a specific time. You will be your own light "DJ".

EXTERNAL INSIGHTS: INTELLIGENT LIGHTING

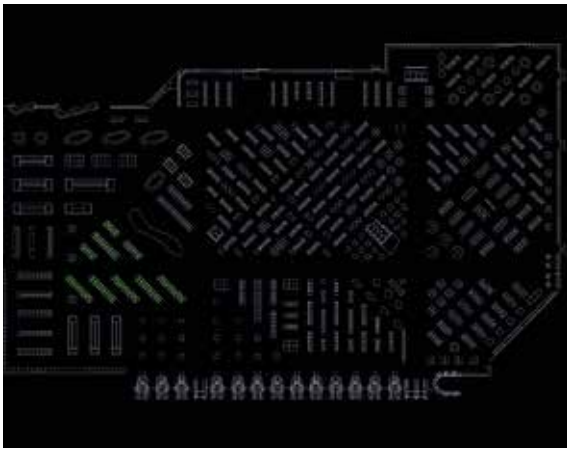
We are constantly looking for new, exciting inspirations and lighting insights from around the world. One architect student who has done a thorough study of intelligent and adaptive lighting is Piia Markkanen, at the University of Oulu, Finland. Piia has recently finished her final thesis focused on intelligent and adaptive lighting in retail environments. This work included a light study in collaboration with the Finnish retail chain Kesko, where for instance, Fagerhult's iTrack was included in the lighting scheme in hypermarket environment. In the thesis Piia also presented a number of lighting scenarios that could be implemented in food shops that are quite intriguing and innovative.

"The use of adaptive and intelligent lighting applications provides plenty of opportunities in lighting design that are possible to realise in real environments these days and also applications that can be used in much more creative ways that are available in the near future", Piia says. »



Although products are sufficiently illuminated, homogeneous grid lighting does not provide highlights or points of interest.

This image illustrates the lighting design that is described in Piia Markkanens lighting study. The ends of the shelves are brightly illuminated whereas the middle portion of the shelves is illuminated with only 20% of full efficiency when there are no customers in the vicinity of the shelves.



Floorplan of the hypermarket. The area of shelves are indicated in green.

Piia Markkanen.

Source: Piia Markkanen, Diploma work: "Intelligent and adaptive lighting in retail environment", University of Oulu, department of architecture.

» "I find it interesting how these applications can be used either in subtle ways, for example reducing energy consumption by decreasing the level of illumination in areas where the light is not needed, or to guide and attract customers by increasing intensity or changing the colour of light", she continues.

In the grocery section illumination of the right colour temperature is key. Why not use intelligent lighting and complementing the luminaires with sensors that detect the colour of the product its beam illuminates? Via feedback of the controlling system, the colour temperature of the light can be adapted to the most flattering colour temperature of the product that differ greatly in colours, such as green cucumber or yellow orange. Furthermore sensory techniques and intelligent lighting can be adapted for use in freezer cabinets. For instance, sensors can detect customers' presence and increase the lighting in cabinets near to the customer to enable product selection prior to opening the cabinet door.

However, Piia chose to focus the study towards comparing homogeneous lighting verses a dynamic and responsive lighting in the shelves and long aisles in the grocery section. Traditionally the lighting is homogenous and switched on in the whole shop area regardless of activity level. Also the lighting generally consists of florescent tubes that create a uniform illumination with no visual differences.

The lighting scheme and ideas of the lighting set-up were limited to the area in the grocery section. The idea was to study the area in the shop where there were long shelves that may be unoccupied when there are fewer customers in the shop. In the sketch the lengths of the shelves were shortened and placed diagonally against the main aisle between sections in the grocery shop areas. This effort will reveal the ends of the shelves to the customers that walk by. The lighting above the main aisle was pendants that should illuminate the aisles with direct and indirect light. The pendants do illuminate the aisle with direct and indirect light, but the main idea here was to choose a different kind of luminaire to point out the hierarchy of aisles.

Piia also chose to illuminate the endcaps of the shelves in different, livelier manner by a RGBW spotlight. The use of white light was the main idea; still, the RGBW alternative makes it possible to use coloured light as well. The ends of the shelves are significant to highlight since they are important space for product placements. Accentuating spotlights also make the lighting non-uniform.

The shelves in the middle section, should only be illuminated to 20% of full efficiency when no customers are nearby. Additionally, oval flood light (wider beam than spotlights) and wall washers would illuminate the vertical surfaces uniformly. The aisle area between the shelves should be illuminated with an LED lighting fixture that would give general light downwards. With the exception of the pendant luminaires, all luminaires included should be attached to Fagerhult's iTrack system, a track that can be supplemented with sensors, which enable intelligent lighting control.

Piia chose the iTrack to the design as she wished to study a lighting scheme that could be installed on a DALI controllable system.

"I thought it was important to do the implementation in such a way that it can be adapted if the layout of the shop is rearranged later on, thus track installation. The luminaires in the design and overall in my thesis were chosen to be representative in terms of light distribution, such as wall washer or oval floods. I wanted to use examples of luminaires that are commercially available in order to study the lighting by visualizing it with renderings", Piia explains. »

» To detect approaching customers adaptive lighting sensors should be placed either between the shelves, on the shelves or connected to the iTrack. The thought is that the main aisle and the end of the shelves should be illuminated at all times when the shop is open. When customers are not nearby, the wall washers only illuminate the shelves with 20 % efficiency, but as presence detectors detect approaching customers the intelligent control system brightens the wall washers sequentially as the customer is getting closer.

Since general or accent lighting can cast shadows on the products displayed in the shelves, a preferable solution is to attach LED sticks on the bottom of the shelves – not only will shadows be eliminated, the products on the lower shelves will be better illuminated. Intelligent lighting could be incorporated into such a solution either by an approaching customer triggering illumination of all the shelves - or a more sophisticated approach, where only certain shelves are illuminated, either fully or partially, when the customer is approaching. Small, colour coded lighting is yet another element that could be added to the shelves to provide visual cues of, for example, new or organic products.

To summarise, the accentuating light from the spotlights at the end of the shelves provides visual key points where the adaptive lighting in the shelves is a way to reduce energy consumption in a subtle way, not too obvious to the customer. The ideas presented in this thesis are not in any way impossible: it is the future. Why use static lighting when we can have intelligent lighting adapted after customer needs? A better shopping experience is achieved as well as energy consumption decreases.

"I think the future should hold more personalised lighting for customers in retail environments compared to what it is now – light and the energy used to create it, should be directed to the areas where customers are present. Lighting could also be used to guide the customer based on his or her interest of certain merchandise and also to inform where either complementing merchandise are located or just to enhance the visibility of other merchandise on the customer's route in the shop", Piia concludes.

FAGERHULT RESEARCH: DYNAMIC LIGHTING

Based on the same thoughts and ideas of adaptive lighting Fagerhult is involved in a lighting study with the Finnish hypermarket Anttila in Uleåborg where three different lighting scenarios will be investigated.

To set up a suitable dynamic lighting scene DMX-controlled RGBW light and DALI controlled tuneable white light will be included. Yet one of the scenes will be static to see how this approach will differ from the experience of the dynamic lighting scenes. The three scenes that will be implemented are:

> **Day 1:** *A selected area will be illuminated by static general lighting & accent tuneable white spotlights.*
> **Day 2:** *The same area will be illuminated by static general lighting & dynamic accent tuneable white spotlights.*
> **Day 3:** *The area will be illuminated by static general lighting & dynamic accent RGBW spotlights and dynamic tuneable white spotlights.*

Our goal with the study is to increase knowledge in how dynamic lighting can attract customers, draw attention to certain products and affect the path of route chosen – and evidently share this knowledge with our customers. We are convinced that this can be applied in both fashion as well as food retail.

Psst! *Look out for the new tuneable white Marathon addition, "Marathon Dynamic", this spring. With this spotlight you can tune in any white colour from 2700 K to 6500 K but also control more saturated colours such as red, blue, yellow and purple.*

”Consumers want to be entertained and get the feeling of a personalised shopping experience.

Lars Gärdebäck,
Technical Application Manager, Fagerhult

Our ingredients.

Presented on the following pages are products that we find suitable for illuminating supermarkets and other food retail environments. They can bring that extra spice to the atmosphere and create a comfortable yet inspirational grocery shopping.

THE CHOSEN SELECTIONS of products highlighted are our precious ingredients for a successful food retail environment. They provide; accentuating, general, ambient and integrated lighting that will set a tasteful scene.

Our latest additions are the spotlights Marathon Rich and Marathon Glow, which are especially developed for illuminating and enhancing different groceries. Another new spotlight is Zone Evo, a luminaire that works well on high ceiling heights, usually common in supermarkets. It is companioned by its sibling Zone Evo Recessed, a recessed spotlight for lower ceiling heights.

Browse the following pages to learn more about the products.

*Visit, **www.fagerhult.com**, for complete product range.*

iTrack.

WE WANTED TO offer a complete lighting solution for the ever-changing retail environment that addresses the need for a flexible, complete, future-proof lighting system. That is why we developed iTrack. This track system has been optimised for retail installation. It can be surface mounted or suspended to create a consistent brand identity, regardless of the ceiling solution.

iTrack is designed to connect. 12-circuits provide unparalleled flexibility and choice with up to three different lighting circuits, DALI lighting controls and emergency capability built in. That is only the start; compatibility has been extended outside iTrack's impressive range of luminaires. iTrack is compatible with many 3-circuit track adaptors offered by other lighting companies, giving lighting designers the ultimate flexibility in luminaire selection.

iTrack luminaires are available with DALI control gear. This enables each luminaire to be switched or dimmed individually to create the most efficient lighting schemes – it gives retailers various new energy-saving options.

iTrack

The intelligent track

DESCRIPTION

Extruded aluminium in white (RAL 9016) or black (RAL 9004) finish with isolation profile. All conductors and earth conductor are made of 2.5 mm² copper.

POWER SUPPLY

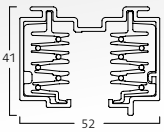
Operating voltage 400V 3x16A.

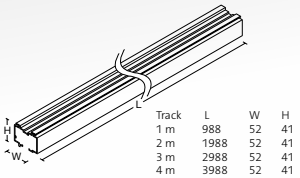
OTHER INFORMATION

iTrack can easily be equipped with a multisensor for constant light, occupancy detection and receiver for a remote control (IR), see accessories. The functionality requires luminaires with DALI (-368) and an externally placed and connected DALI power supply unit.

iTrack

IP20

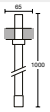




Track	L	W	H
1 m	988	52	41
2 m	1988	52	41
3 m	2988	52	41
4 m	3988	52	41

iTrack	*Weight*	*White*	*Black*
1000 mm	1,4 kg	**78200**	**78210**
2000 mm	2,8 kg	**78201**	**78211**
3000 mm	4,2 kg	**78202**	**78212**
4000 mm	5,6 kg	**78203**	**78213**

Connection unit			*White*	*Black*
		Connection unit.	**78220**	**78230**
		Connection unit mirrored.	**78229**	**78239**

Conduit supply coupler			*White*	*Black*
		Conduit Supply coupler.	**96790**	-

Linear coupler			*White*	*Black*
		Linear coupler.	**78221**	**78231**

X-coupler			*White*	*Black*
		X-coupler.	**78226**	**78236**

T-coupler			*White*	*Black*
		T-coupler, right.	**78224**	**78234**
		T-coupler, left.	**78225**	**78235**

L-coupler			*White*	*Black*
		L-coupler, right.	**78222**	**78232**
		L-coupler, left.	**78223**	**78233**

Flex-coupler			*White*	*Black*
		Flex-coupler.	**78227**	-

End cap			*White*	*Black*
		End piece.	**78228**	**78238**

Cover			*White*	*Black*
		Cover 1200mm.	**27997**	-
		Cover 1500mm.	**27998**	-

Cover end cap			*White*	*Black*
		End cap to cover.	**27996**	-

iTrack

The intelligent track

Ceiling bracket		*White*	*Black*
	Ceiling bracket for surface mounted installation.	**78248**	**78252**

Pendant package		*White*	*Black*
	Conduit Supply coupler.	**78249**	**78253**
	Wire 4m with wire lock No.1.	**96838**	-

Wire suspension kit		*White*	*Black*
	Wire suspension kit 1,5m for ceilings and visible T-bar (cable entry + single).	**91696**	-

Suspension wire adjustable centre		*White*	*Black*
	Suspension wire adjustable centre *(Used for asymmetric loads such as spotlights).*	**78245**	**78254**

Supply Coupler Support		*White*	*Black*
	(Eliminates the need for extra wire suspension for connection unit).	**78255**	**78256**

Suspension for rod M6		*White*	*Black*
	Suspension for rod M6 *(rod excl).*	**78246**	**78273**

Pendant 7P adapter		*White*	*Black*
	Pendant 7P adapter incl. 2,5m cable.	**78244**	**78274**

Luminaire fixing (pair)		*White*	*Black*
	Luminaire fixing for different lightfixtures for iTrack.	**78257**	-

Exit sign adapter		*White*	*Black*
	iTrack exit sign adapter.	**34960**	-

Conduit for supply coupler		*White*	*Black*
Image not avaliable	Cable pipe, 1000mm.	**96790**	-
	Suspension visible T-bar 25mm.	**78250**	-


25:-
25:-
16

iTrack Dupio.

ITRACK DUPIO is a fluorescent luminaire with a lot of possibilities, especially developed for retail areas. The highly efficient T5 fluorescent lamp and Miro reflector creates an even light. With the individual adjustable reflectors, you can create an illumination suited for the interior design – aim the light at the food in the aisles or aim it at the graphics in the shop.

Besides the iTrack Dupio, there is also a Dupio standalone version for wire suspension. Both Dupio versions are equipped with multi-wattage ballasts, which make it possible to change to other lamp wattages without replacing the ballast.

iTrack Dupio

Adjustable reflectors for flexible illumination

DESCRIPTION

Luminaire body in aluminium profile and sheet of steel. HF multiwattage ballast. Individual adjustable Micro reflectors with high efficiency. iTrack version with adapter included, wire suspended version with friction lock and mains cable included. Colour setting in white (RAL 9016), grey (RAL9006) and black (RAL9005).

POWER SUPPLY

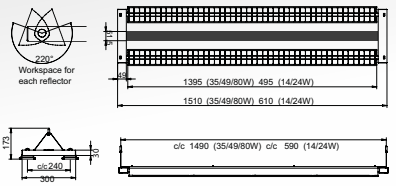
Operating voltage 230 V. iTrack version installed direct into iTrack. Wire suspended version supplied with 3 meter mains cable. HF std version also with earthed plug.

OTHER INFORMATION

Louvre needs to be ordered separately. Reflectors adjustable 220 (+/-110) degrees, need to order separately. Wire suspension order separately (wire suspended version).

Dupio iTrack

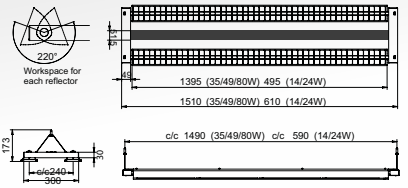
IP20



HF excl. reflector	*W*	*Socket*	*Weight*	*White*	*Grey*	*Black*
610 mm	2 x 14/24 W	G5	3 kg	**19760**	**19761**	**19762**
1510 mm	2 x3 5/49/80 W	G5	6 kg	**19763**	**19764**	**19765**
DALI excl. reflector	*W*	*Socket*	*Weight*	*White*	*Grey*	*Black*
610 mm	2 x 14/24 W	G5	3 kg	**19760-368**	**19761-368**	**19762-368**
1510 mm	2 x 35/49/80 W	G5	6 kg	**19763-368**	**19764-368**	**19765-368**
Light source				*Ballast*		
Light source ordered separately				Ballast included		

Dupio

IP20



HF excl. reflector	*W*	*Socket*	*Weight*	*White*	*Grey*	*Black*
610 mm	2 x 14/24 W	G5	3 kg	**19754**	**19755**	**19756**
1510 mm	2 x 35/49/80 W	G5	6 kg	**19757**	**19758**	**19759**
DALI excl. reflector	*W*	*Socket*	*Weight*	*White*	*Grey*	*Black*
610 mm	2 x 14/24 W	G5	3 kg	**19754-368**	**19755-368**	**19756-368**
1510 mm	2 x 35/49/80 W	G5	6 kg	**19757-368**	**19758-368**	**19759-368**
Light source				*Ballast*		
Light source ordered separately				Ballast included		

Light data on p. 109-111.

iTrack Dupio

Adjustable reflectors for flexible illumination

Dupio components

Installaion accessories for pendent version	
96838	Wire package 4 m (order 2 pcs/Dupio)
91421	Bracket for T-bars 25mm with ceiling cup, white / pair
91425	Wire 1,5 m for 91421 / pair
Reflectors and louvres	
19766	Reflectors Dupio 14/24 W (pair)
19767	Reflectors Dupio 35/49/80 W (pair)
19742	Lamella louvre Dupio 2x14/24 W white (pair)
19743	Lamella louvre Dupio 2x14/24 W grey (pair)
19744	Lamella louvre Dupio 2x35/49/80 W white (pair)
19745	Lamella louvre Dupio 2x35/49/80 W grey (pair)

Light sources		*Socket*	*CCT*
81351	FDH 14 W	G5	3000 K
81347	FDH 14 W	G5	4000 K
81372	FDH 24 W	G5	3000 K
81376	FDH 24 W	G5	4000 K
81800	FDH 35 W	G5	3000 K
81350	FDH 35 W	G5	4000 K
81359	FDH 49 W	G5	3000 K
81362	FDH 49 W	G5	4000 K
81375	FDH 80 W	G5	3000 K
81379	FDH 80 W	G5	4000 K


Nyhet!
BALSAMICO
89:-
Nyhet!
PESTODRESSING
49:-
> dulce de higo casero
Kvitten Confit
35:-
Chevre Bolle
79:-

iTrack Line.

AT THE HEART of iTrack is the need for a simple, cost-effective and high performance lighting system. Line utilises the latest high performance T5 lamp technology combined with a range of reflector and louvre options to deliver high quality and performance in a budget industrial, shop atmosphere luminaire.

iTrack Line

Linear luminaire with several reflector options

DESCRIPTION

Body in white enamelled steel sheet with polycarbonate end caps. Four reflector options available, constructed from highly polished aluminium. iTrack can easily be equipped with multisensor for constant light levels, presence detection and receiver for remote control (IR), see iTrack accessories. Colour settings in white (RAL 9016).

ACCESSORIES

Toughened plastic end cap to fit all reflector sizes and prevent light bleed. Aluminium seam to join reflectors in a continuous line. Lamella louvre.

POWER SUPPLY

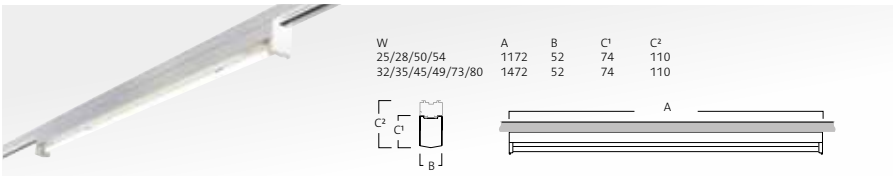
Operating voltage 230 V. iTrack version installed direct into iTrack. Wire suspended version supplied with 3 meter mains cable. HF std version also with earthed plug.

OTHER INFORMATION

Supplied with iTrack seven-pole adapter. Some functions require iTrack 12 pole adapter. Most models can be equipped with emergency lighting (-160). Most models can be equipped with a different ballast for dimming.

iTrack Line

IP20



FDH	*W*	*Socket*	*Weight*	*White*
1172 mm	1 x 28 W	G5	1.6 kg	**34900**
1472 mm	1 x 35 W	G5	2.0 kg	**34901**
1472 mm	1 x 49 W	G5	2.0 kg	**34902**
1172 mm	1 x 54 W	G5	1.6 kg	**34903**
1472 mm	1 x 80 W	G5	2.0 kg	**34904**
1172 mm	2 x 28 W	G5	1.7 kg	**34907**
1472 mm	2 x 35 W	G5	2.2 kg	**34908**
1472 mm	2 x 49 W	G5	2.2 kg	**34909**
1172 mm	2 x 54 W	G5	1.7 kg	**34910**
1472 mm	2 x 80 W	G5	2.2 kg	**34911**
DALI				
Add suffix code to the end of the luminaire part number to indicate required function.				**-368**
Light source			*Ballast*	
Light source ordered separately			Ballast included	

iTrack Line components

Light sources		*Socket*	*Colour code*
81351	FDH 14 W	G5	830
81347	FDH 14 W	G5	840
81372	FDH 24 W	G5	830
81376	FDH 24 W	G5	840
81744	FDH 28 W	G5	830
81349	FDH 28 W	G5	840
81800	FDH 35 W	G5	830
81350	FDH 35 W	G5	840

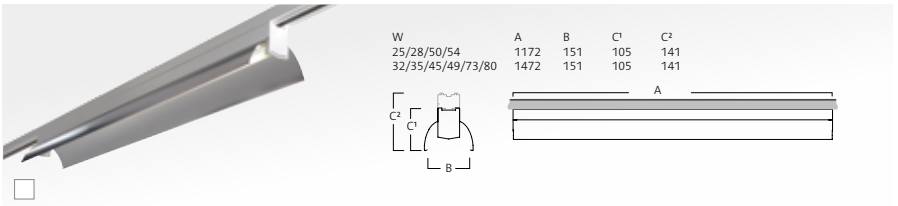
Light sources		*Socket*	*Colour code*
81359	FDH 49 W	G5	830
81362	FDH 49 W	G5	840
81374	FDH 54 W	G5	830
81378	FDH 54 W	G5	840
81375	FDH 80 W	G5	830
81379	FDH 80 W	G5	840

Light data on p. 109-111.

iTrack Line

Linear luminaire with several reflector options

iTrack Line narrow



FDH	*W*	*Socket*	*Weight*	*White*
1172 mm	1 x 28 W	G5	1.9 kg	**34860**
1472 mm	1 x 35 W	G5	2.5 kg	**34861**
1472 mm	1 x 49 W	G5	2.5 kg	**34862**
1172 mm	1 x 54 W	G5	1.9 kg	**34863**
1472 mm	1 x 80 W	G5	2.5 kg	**34864**
1172 mm	2 x 28 W	G5	2.1 kg	**34867**
1472 mm	2 x 35 W	G5	2.7 kg	**34868**
1472 mm	2 x 49 W	G5	2.7 kg	**34869**
1172 mm	2 x 54 W	G5	2.1 kg	**34870**
1472 mm	2 x 80 W	G5	2.7 kg	**34871**
DALI				
Add suffix code to the end of the luminaire part number to indicate required function.				**-368**
Light source			*Ballast*	
Light source ordered separately			Ballast included	

iTrack Line narrow components

Accessories	
92637	End caps to reflector, pair
92632	Reflector joint springs

Light sources		*Socket*	*Colour code*
81351	FDH 14 W	G5	830
81347	FDH 14 W	G5	840
81372	FDH 24 W	G5	830
81376	FDH 24 W	G5	840
81744	FDH 28 W	G5	830
81349	FDH 28 W	G5	840
81800	FDH 35 W	G5	830
81350	FDH 35 W	G5	840
81359	FDH 49 W	G5	830
81362	FDH 49 W	G5	840
81374	FDH 54 W	G5	830
81378	FDH 54 W	G5	840
81375	FDH 80 W	G5	830
81379	FDH 80 W	G5	840

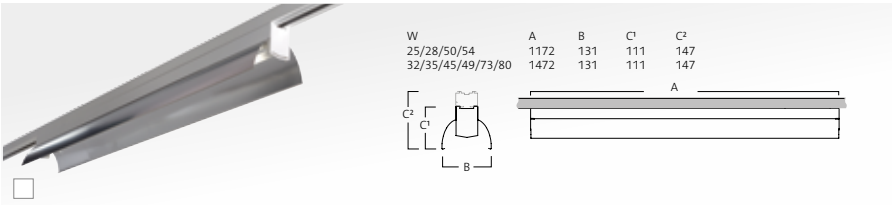
Light data on p. 109-111.

iTrack Line

Linear luminaire with several reflector options

iTrack Line medium

IP20



FDH	*W*	*Socket*	*Weight*	*White*
1172 mm	1 x 28 W	G5	1.9 kg	**34840**
1472 mm	1 x 35 W	G5	2.5 kg	**34841**
1472 mm	1 x 49 W	G5	2.5 kg	**34842**
1172 mm	1 x 54 W	G5	1.9 kg	**34843**
1472 mm	1 x 80 W	G5	2.5 kg	**34844**
1172 mm	2 x 28 W	G5	2.1 kg	**34847**
1472 mm	2 x 35 W	G5	2.7 kg	**34848**
1472 mm	2 x 49 W	G5	2.7 kg	**34849**
1172 mm	2 x 54 W	G5	2.1 kg	**34850**
1472 mm	2 x 80 W	G5	2.7 kg	**34851**
DALI				
Add suffix code to the end of the luminaire part number to indicate required function.				**-368**
Light source			*Ballast*	
Light source ordered separately			Ballast included	

iTrack Line medium components

Accessories	
89412	Lamella louvre for reflector with end caps*, 25/28/50/54 W
89413	Lamella louvre for reflector with end caps*, 32/35/45/49/73/80 W
89414	Lamella louvre for reflector without end caps, 25/28/50/54 W
89415	Lamella louvre for reflector without end caps, 32/35/45/49/73/80 W
92636	End caps for reflector, pair
92631	Reflector joint springs

** End caps ordered separately*

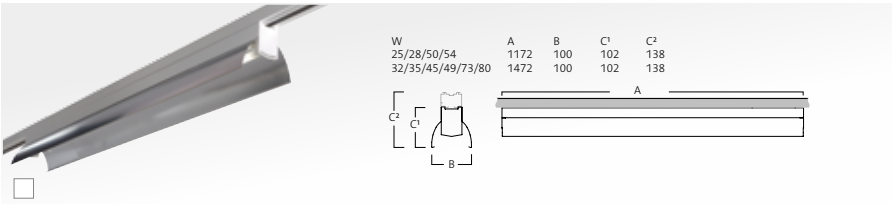
Light sources		*Socket*	*Colour code*
81351	FDH 14 W	G5	830
81347	FDH 14 W	G5	840
81372	FDH 24 W	G5	830
81376	FDH 24 W	G5	840
81744	FDH 28 W	G5	830
81349	FDH 28 W	G5	840
81800	FDH 35 W	G5	830
81350	FDH 35 W	G5	840
81359	FDH 49 W	G5	830
81362	FDH 49 W	G5	840
81374	FDH 54 W	G5	830
81378	FDH 54 W	G5	840
81375	FDH 80 W	G5	830
81379	FDH 80 W	G5	840

Light data on p. 109-111.

iTrack Line

Linear luminaire with several reflector options

iTrack Line wide



FDH	*W*	*Socket*	*Weight*	*White*
1172 mm	1 x 28 W	G5	1.9 kg	**34820**
1472 mm	1 x 35 W	G5	2.4 kg	**34821**
1472 mm	1 x 49 W	G5	2.4 kg	**34822**
1172 mm	1 x 54 W	G5	1.9 kg	**34823**
1472 mm	1 x 80 W	G5	2.4 kg	**34824**
1172 mm	2 x 28 W	G5	2.0 kg	**34827**
1472 mm	2 x 35 W	G5	2.6 kg	**34828**
1472 mm	2 x 49 W	G5	2.6 kg	**34829**
1172 mm	2 x 54 W	G5	2.0 kg	**34830**
1472 mm	2 x 80 W	G5	2.6 kg	**34831**
DALI				
Add suffix code to the end of the luminaire part number to indicate required function.				**-368**
Light source			*Ballast*	
Light source ordered separately			Ballast included	

iTrack Line wide components

Accessories	
89400	Lamell louvre for reflectors with end caps*, 25/28/50/54 W
89402	Lamella louvre for reflector with end caps*, 32/35/45/49/73/80 W
89401	Lamella louvre for reflector without end caps, 25/28/50/54 W
89403	Lamella louvre for reflector without end caps, 32/35/45/49/73/80 W
92635	End caps for reflector, pair
92630	Reflector joint springs

** End caps ordered separately.*

Light sources		*Socket*	*Colour code*
81351	FDH 14 W	G5	830
81347	FDH 14 W	G5	840
81372	FDH 24 W	G5	830
81376	FDH 24 W	G5	840
81744	FDH 28 W	G5	830
81349	FDH 28 W	G5	840
81800	FDH 35 W	G5	830
81350	FDH 35 W	G5	840
81359	FDH 49 W	G5	830
81362	FDH 49 W	G5	840
81374	FDH 54 W	G5	830
81378	FDH 54 W	G5	840
81375	FDH 80 W	G5	830
81379	FDH 80 W	G5	840

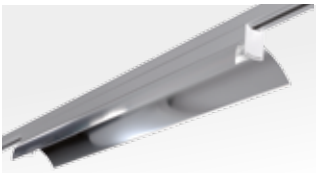
Light data on p. 109-111.

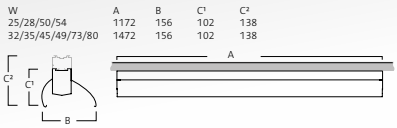
iTrack Line

Linear luminaire with several reflector options

iTrack Line asymmetric

IP20





FDH	*W*	*Socket*	*Weight*	*White*
1172 mm	1 x 28 W	G5	2.0 kg	**34880**
1472 mm	1 x 35 W	G5	2.5 kg	**34881**
1472 mm	1 x 49 W	G5	2.5 kg	**34882**
1172 mm	1 x 54 W	G5	2.0 kg	**34883**
1472 mm	1 x 80 W	G5	2.5 kg	**34884**
1172 mm	2 x 28 W	G5	2.1 kg	**34887**
1472 mm	2 x 35 W	G5	2.7 kg	**34888**
1472 mm	2 x 49 W	G5	2.7 kg	**34889**
1172 mm	2 x 54 W	G5	2.1 kg	**34890**
1472 mm	2 x 80 W	G5	2.7 kg	**34891**
DALI				
Add suffix code to the end of the luminaire part number to indicate required function.				**-368**
Light source			*Ballast*	
Light source ordered separately			Ballast included	

iTrack Line asymmetric components

Accessories	
89408	Lamella louvre for reflector with end caps, 25/28/50/54 W
89410	Lamella louvre for reflector with end caps, 32/35/45/49/73/80 W
89409	Lamella louvre for reflector without end caps, 25/28/50/54 W
89411	Lamella louvre for reflector without end caps, 32/35/45/49/73/80 W
92638	End caps for reflector, pair
92633	Reflector joint springs

** End caps ordered separately*

Light sources		*socket*	*Colour code*
81351	FDH 14 W	G5	830
81347	FDH 14 W	G5	840
81372	FDH 24 W	G5	830
81376	FDH 24 W	G5	840
81744	FDH 28 W	G5	830
81349	FDH 28 W	G5	840
81800	FDH 35 W	G5	830
81350	FDH 35 W	G5	840
81359	FDH 49 W	G5	830
81362	FDH 49 W	G5	840
81374	FDH 54 W	G5	830
81378	FDH 54 W	G5	840
81375	FDH 80 W	G5	830
81379	FDH 80 W	G5	840

Light data on p. 109-111.

Marathon.

THE MARATHON SPOTLIGHTS are easy for customers to enjoy due to their subtle design. The proportions and aesthetic balance are perfect and one of the reasons for its incredible popularity. It can either blend in as a natural element, but can also attract attention in an elegant manner. The new additions Marathon Rich and Marathon Glow are equipped with thoroughly chosen LED modules making them a perfect choice when illuminating and enhancing the colours of different groceries.

Visit, www.fagerhult.com, for complete Marathon range.

Marathon

Subtle cylindrical design

DESCRIPTION

Universal 3-phase adapter included. Installed on 3-phase track or fixpoint bracket. Driver and luminaire housing of enamelled aluminium extrusion/die cast aluminium. Front ring of thermal plastic. Metalised reflector. Colour settings in white (RAL 9016) and black (RAL 9005).

POWER SUPPLY

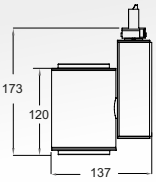
LED 230 V.

OTHER INFORMATION

Pan 360°, tilt 0-90°. Active cooling.

Marathon Midi LED Rich

IP20

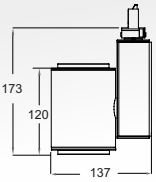


Scan QR code for latest LED data

LED 2000 lm	*W (system)*	*lm/W (system)*	*White*	*Black*
MediumSpot	39 W	44 lm/W	**88900**	**88903**
Medium	39 W	44 lm/W	**88901**	**88904**
Flood	39 W	44 lm/W	**88902**	**88905**
Weight	*Light source*		*Ballast*	
1,1 kg	LED unit included		Driver included	

Marathon Midi LED Glow

IP20



Scan QR code for latest LED data

LED 2000 lm	*W (system)*	*lm/W (system)*	*White*	*Black*
MediumSpot	39 W	44 lm/W	**88906**	**88909**
Medium	39 W	44 lm/W	**88907**	**88910**
Flood	39 W	44 lm/W	**88908**	**88911**
Weight	*Light source*		*Ballast*	
1,1 kg	LED unit included		Driver included	

Light data on p. 109-111.

Marathon

Subtle cylindrical design

DESCRIPTION

Universal 3-phase adapter included. Installed on 3-phase track or fixpoint bracket. Driver and luminaire housing of enamelled aluminium extrusion/die cast aluminium. Front ring of thermal plastic. Fortimo SLM 1100 lm and 3000 lm and 4500 lm. Available in 2700 K, 3000 K and 4000 K, CRI>80 or >90 for standard version. Metalised reflector. Colour settings in white (RAL 9016) and black (RAL 9005).

POWER SUPPLY

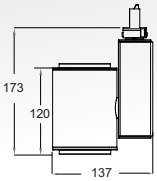
LED 230 V.

OTHER INFORMATION

Pan 360°, tilt 0-90°. Passive/active cooling, check the fagerhult website for more details.

Marathon Midi LED

IP20



Scan QR code for latest LED data

LED 4500 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
MediumSpot	45 W	48 W	80 lm/W	>80	3000 K	**88970**	**88971**
	45 W	54 W	66 lm/W	>90	3000 K	**88976**	**88977**
Medium	45 W	48 W	80 lm/W	>80	3000 K	**88972**	**88973**
	45 W	54 W	66 lm/W	>90	3000 K	**88978**	**88979**
Flood	45 W	48 W	80 lm/W	>80	3000 K	**88974**	**88975**
	45 W	54 W	66 lm/W	>90	3000 K	**88980**	**88981**
LED 3000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
MediumSpot	42 W	48 W	49 lm/W	>80	2700 K	**86552**	**86555**
	28 W	32 W	80 lm/W	>80	3000 K	**86530**	**86531**
	33 W	37 W	66 lm/W	>90	3000 K	**86520**	**86526**
Medium	42 W	48 W	44 lm/W	>80	2700 K	**79548**	**79549**
	28 W	32 W	80 lm/W	>80	3000 K	**79319**	**79322**
	26 W	30 W	85 lm/W	>80	4000 K	**79325**	**79328**
	33 W	37 W	66 lm/W	>90	3000 K	**86521**	**86527**
Flood	42 W	48 W	47 lm/W	>80	2700 K	**79547**	**79550**
	28 W	32 W	80 lm/W	>80	3000 K	**79320**	**79323**
	26 W	30 W	85 lm/W	>80	4000 K	**79326**	**79329**
	33 W	37 W	66 lm/W	>90	3000 K	**86524**	**86528**
LED 1100 lm TB*	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	17 W	19 W	56 lm/W	>80	2700 K	**79563**	**79565**
	17 W	19 W	67 lm/W	>80	3000 K	**79340**	**79343**
	19 W	20 W	53 lm/W	>90	3000 K	**59771**	**79561**
Medium	17 W	19 W	53 lm/W	>80	2700 K	**79564**	**79566**
	17 W	19 W	67 lm/W	>80	3000 K	**79341**	**79344**
	19 W	20 W	53 lm/W	>90	3000 K	**59772**	**79562**
Flood	17 W	19 W	67 lm/W	>80	3000 K	**79342**	**79345**

Weight	*Light source*	*Ballast*
1,1 kg	LED unit included	Driver included

** Tight Beam*

Light data on p. 109-111.

Marathon

Subtle cylindrical design

DESCRIPTION

iTrack adapter included for installation on iTrack. Driver and luminaire housing of enamelled aluminium extrusion/die cast aluminium. Front ring of thermal plastic. Fortimo SLM 3000 lm and 4500 lm. Available in 3000 K and 4000 K, CRI>80 and >90 for standard version. Metalised reflector. Colour settings in white (RAL 9016) and black (RAL 9005).

POWER SUPPLY

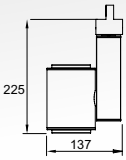
LED 230 V.

OTHER INFORMATION

Pan 360°, tilt 0-90°. Passive/active cooling, check the fagerhult website for more details. Can be controlled via DALI and dimmed from 100% to 10%.

Marathon Midi LED iTrack DALI

IP20



Scan QR code for latest LED data

LED 4500 lm DALI	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
MediumSpot	45 W	48 W	80 lm/W	>80	3000 K	**88970-402**	**88971-402**
	45 W	54 W	66 lm/W	>90	3000 K	**88976-402**	**88977-402**
Medium	45 W	48 W	80 lm/W	>80	3000 K	**88972-402**	**88973-402**
	45 W	54 W	66 lm/W	>90	3000 K	**88978-402**	**88979-402**
Flood	45 W	48 W	80 lm/W	>80	3000 K	**88974-402**	**88975-402**
	45 W	54 W	66 lm/W	>90	3000 K	**88980-402**	**88981-402**
LED 3000 lm DALI	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Medium Spot	28 W	32 W	80 lm/W	>80	3000 K	**86530-402**	**86531-402**
	33 W	37 W	66 lm/W	>90	3000 K	**86520-402**	**86526-402**
Medium	28 W	32 W	80 lm/W	>80	3000 K	**79319-402**	**79322-402**
	26 W	30 W	85 lm/W	>80	4000 K	**79325-402**	**79328-402**
	33 W	37 W	66 lm/W	>90	3000 K	**86521-402**	**86527-402**
Flood	28 W	32 W	80 lm/W	>80	3000 K	**79320-402**	**79323-402**
	26 W	30 W	85 lm/W	>80	4000 K	**79326-402**	**79329-402**
	33 W	37 W	66 lm/W	>90	3000 K	**86524-402**	**76528-402**

Weight	*Light source*	*Ballast*
1,3 kg	LED unit included	Driver included

Light data on p. 109-111.

Zone Evo.

EVOLUTION HAS added a clean and conical shaped housing with pure LED to the range. The cone is one of the basic geometric shapes and is therefore very accepted, with its roundness and narrow end creating a smooth and light impression. The way in which the conical lamp housing joins the rectangular ballast box is both practical and visually harmonic.

Zone Evo comes in three different sizes and mounting options, and the segmented MIRO reflector technology makes it extremely efficient with excellent visual performance. There is also a dim version for iTrack with a dim range of 10-100 %. Zone Evo is suitable in most retail areas and accentuates the merchandise nicely. The LED 4500 lm version is very suitable for high ceiling heights which are common in food applications.

*Visit, **www.fagerhult.com**, in February for complete Zone Evo range.*

Zone Evo

The conical spotlight

DESCRIPTION

Installed on a 3phase track or fixpoint bracket. Universal 3-phase adapter included. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 1100 and 2000lm. Available in 3000 and 4000K, CRI >80 or >90. Metalised reflector. Colour settings in white (RAL 9016), grey (RAL 7038) and black (9005).

POWER SUPPLY

Operating voltage 230 V.

OTHER INFORMATION

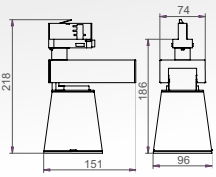
Pan 360, tilt 0-90.

ACCESSORIES

Barndoors, honeycomb louvre, baffle ring and cap cone.

Zone Evo I LED

IP20



Scan QR code for latest LED data

LED 2000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Grey*	*Black*
Medium Spot	19 W	21 W	80 lm/W	>80	3000 K	**59853**	**59859**	**59856**
	18 W	20 W	89 lm/W	>80	4000 K	**59862**	**59868**	**59865**
Medium	19 W	21 W	80 lm/W	>80	3000 K	**59854**	**59860**	**59857**
	18 W	20 W	87 lm/W	>80	4000 K	**59863**	**59869**	**59866**
Flood	19 W	21 W	80 lm/W	>80	3000 K	**59855**	**59861**	**59858**
	18 W	20 W	87 lm/W	>80	4000 K	**59864**	**59870**	**59867**
LED 1100 lm TB	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Grey*	*Black*
Spot	17 W	19 W	67 lm/W	>80	3000 K	**59835**	**59841**	**59838**
	19 W	20 W	53 lm/W	>90	3000 K	**59844**	**59850**	**59847**
Medium	17 W	19 W	67 lm/W	>80	3000 K	**59836**	**59842**	**59839**
	19 W	20 W	53 lm/W	>90	3000 K	**59845**	**59851**	**59848**
Flood	17 W	19 W	67 lm/W	>80	3000 K	**59837**	**59843**	**59840**
Weight		*Light source*				*Ballast*		
0,8 kg		LED unit included				Driver included		

>> Available in February 2014.

Light data on p. 109-111.

Zone Evo

The conical spotlight

DESCRIPTION

iTrack adapter included for installation on iTrack. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 1100 lm. Available in 3000 K, CRI >80 or >90. Segmented MIRO reflector. Colour settings in white (RAL 9016) and black (9005).

POWER SUPPLY

Operating voltage 230 V.

OTHER INFORMATION

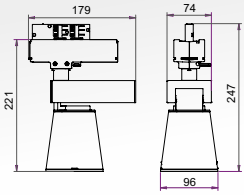
Pan 360, tilt 0-90, can be controlled via DALI and dimmed from 100% to 10%.

ACCESSORIES

Barndoors, honeycomb louvre, baffle ring and cap cone.

Zone Evo I LED iTrack DALI

IP20



Scan QR code for latest LED data

LED 1100 lm DALI TB	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	17 W	19 W	67 lm/W	>80	3000 K	**59835-402**	**59838-402**
	19 W	20 W	53 lm/W	>90	3000 K	**59844-402**	**59847-402**
Medium	17 W	19 W	67 lm/W	>80	3000 K	**59836-402**	**59839-402**
	19 W	20 W	53 lm/W	>90	3000 K	**59845-402**	**59848-402**
Flood	17 W	19 W	67 lm/W	>80	3000 K	**59837-402**	**59840-402**
Weight		*Light source*			*Ballast*		
0,8 kg		LED unit included			Driver included		

>> Available in February 2014.

Zone Evo I accessories

Accessories	
97225	Zone Evo I barndoors, white
96864	Zone Evo I barndoors, black
59937	Zone Evo I baffle ring, white
59938	Zone Evo I baffle ring, black
96866	Zone Evo I cap cone, black
96915	Zone Evo I honeycomb louvre, black

Barndoors

Baffle

Cap Cone

Light data on p. 109-111.

Zone Evo

The conical spotlight

DESCRIPTION

Installed on a 3-phase track or fixpoint bracket. Universal 3-phase adapter included. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 3000 and 4500lm. Available in 3000 and 4000K, CRI >80 or >90. Segmented MIRO reflector. Colour settings in white (RAL 9016) black (9005) grey (RAL 7038).

POWER SUPPLY

Operating voltage 230 V.

OTHER INFORMATION

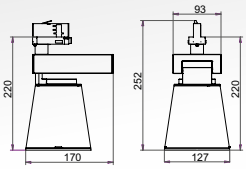
Pan 360, tilt 0-90. Passive/active cooling, for more details visit the Fagerhult website.

ACCESSORIES

Barndoors, honeycomb louvre, baffle ring and cap cone.

Zone Evo II LED

IP20



Scan QR code for latest LED data

LED 4500 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Grey*	*Black*
Medium Spot	45 W	48 W	90 lm/W	>80	3000 K	**86575**	**86562**	**86559**
	45 W	54 W	80 lm/W	>90	3000 K	**86565**	**86571**	**86568**
Medium	45 W	48 W	90 lm/W	>80	3000 K	**86576**	**86563**	**86560**
	45 W	54 W	80 lm/W	>90	3000 K	**86566**	**86572**	**86569**
Flood	45 W	48 W	90 lm/W	>80	3000 K	**86558**	**86564**	**86561**
	45 W	54 W	80 lm/W	>90	3000 K	**86567**	**86573**	**86570**
LED 3000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Grey*	*Black*
Medium Spot	28 W	32 W	85 lm/W	>80	3000 K	**59892**	**59898**	**59895**
	26 W	30 W	90 lm/W	>80	4000 K	**59901**	**59907**	**59904**
	33 W	37 W	74 lm/W	>90	3000 K	**59910**	**59916**	**59913**
Medium	28 W	32 W	85 lm/W	>80	3000 K	**59893**	**59899**	**59896**
	26 W	30 W	90 lm/W	>80	4000 K	**59902**	**59908**	**59905**
	33 W	37 W	74 lm/W	>90	3000 K	**59911**	**59917**	**59914**
Flood	28 W	32 W	85 lm/W	>80	3000 K	**59894**	**59900**	**59897**
	26 W	30 W	90 lm/W	>80	4000 K	**59903**	**59909**	**59906**
	33 W	37 W	74 lm/W	>90	3000 K	**59912**	**59918**	**59915**

Weight	*Light source*	*Ballast*
1,2 kg	LED unit included	Driver included

>> Available in February 2014.

Zone Evo II accessories

Accessories	
97226	Zone Evo II & III barndoors, white
96863	Zone Evo II & III barndoors, black
97223	Zone Evo II & III baffle ring, white
97224	Zone Evo II & III baffle ring, black
96865	Zone Evo II & III cap cone, black
96914	Zone Evo II & III honeycomb louvre, black

Barndoors

Baffle

Cap Cone

Light data on p. 109-111.

Zone Evo

The conical spotlight

DESCRIPTION

Zone Evo III iTrack DALI: iTrack adapter included for installation on iTrack. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 3000lm. Available in 3000 and 4000K, CRI >80 or >90. Segmented MIRO reflector. Colour settings in white (RAL 9016) black (9005).

POWER SUPPLY

Operating voltage 230 V.

OTHER INFORMATION

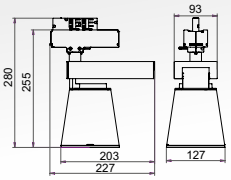
Pan 360°, tilt 0-90°. Zone Evo III LED iTrack DALI can be controlled via DALI and dimmed from 100 % to 10 %. Passive/active cooling, for more details see the Fagerhult website.

ACCESSORIES

Barndoors, honeycomb louvre, baffle ring and cap cone.

Zone Evo III LED iTrack DALI

IP20



Scan QR code for latest LED data

LED 3000 lm DALI	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
	28 W	32 W	85 lm/W	>80	3000 K	**59892-402**	**59895-402**
Spot	26 W	30 W	90 lm/W	>80	4000 K	**59901-402**	**59904-402**
	33 W	37 W	74 lm/W	>90	3000 K	**59910-402**	**59913-402**
	28 W	32 W	85 lm/W	>80	3000 K	**59893-402**	**59896-402**
Medium	26 W	30 W	90 lm/W	>80	4000 K	**59902-402**	**59905-402**
	33 W	37 W	74 lm/W	>90	3000 K	**59911-402**	**59914-402**
	28 W	32 W	85 lm/W	>80	3000 K	**59894-402**	**59897-402**
Flood	26 W	30 W	90 lm/W	>80	4000 K	**59903-402**	**59906-402**
	33 W	37 W	74 lm/W	>90	3000 K	**59912-402**	**59915-402**
Weight		*Light source*			*Ballast*		
1,3 kg		LED unit included			Driver included		

>> Available in February 2014.

Light data on p. 109-111.

Zone Evo Recessed.

ZONE EVO HAS A recessed sibling, with the same conical housing. This makes it possible to work with a spotlight and a recessed spotlight in the same design language throughout the whole lighting installation. Zone Evo Recessed comes in LED and is available in colours of black and white and some versions in grey. The innovative spring solution ensures fast and easy installation and the housing can be rotated 360° and tilted -20 to + 90°.

Zone Evo Recessed

Conical recessed spotlight

DESCRIPTION

For installation in ventilated or non ventilated ceilings. The fixture is equipped with a 25 cm cable with SLM quick connector on the secondary side. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 1100 lm, 3000 lm and 4500 lm. Available in 2700 K, 3000 K and 4000 K, CRI >80 or >90. Zone Evo I, metalized reflector, Zone Evo II, segmented MIRO reflector. Colour settings in white (RAL 9016) and black (9005).

POWER SUPPLY

Operating voltage 230 V.

OTHER INFORMATION

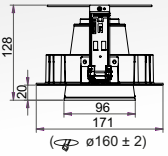
Pan 360, tilt -20 -> 90, can be controlled via DALI and dimmed from 100% to 10%. Passive/active cooling, for detailed information visit the Fagerhult website.

ACCESSORIES

Barndoors, honeycomb louvre, baffle ring and cap cone.

Zone Evo I Recessed LED

IP20



Scan QR code for latest LED data

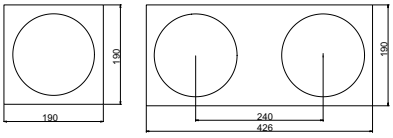
LED 1100 lm TB	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	17 W	19 W	67 lm/W	>80	3000 K	**59943**	**59946**
	19 W	20 W	53 lm/W	>90	3000 K	**59949**	**59952**
Medium	17 W	19 W	67 lm/W	>80	3000 K	**59944**	**59947**
	19 W	20 W	53 lm/W	>90	3000 K	**59950**	**59953**
Flood	17 W	19 W	67 lm/W	>80	3000 K	**59945**	**59948**
	19 W	20 W	53 lm/W	>90	3000 K	**59951**	**59954**
Weight		*Light source*			*Ballast*		
0,8 kg		LED unit included			Driver ordered separately		

>> Available in February 2014.

Zone Evo I accessories

Driver	
97118-3	Driver LED 1100 25W ST18 incl mains cable
97120-3	Driver LED 1100 DALI 25W ST18 incl mains cable
Accessories	
59933	Zone Evo I decor plate 1 unit, white
59934	Zone Evo I decor plate 1 unit, black
59935	Zone Evo I decor plate 2 unit, white
59936	Zone Evo I decor plate 2 unit, black

Accessories	
97225	Zone Evo I barndoors, white
96864	Zone Evo I barndoors, black
59937	Zone Evo I baffle ring, white
59938	Zone Evo I baffle ring, black
96866	Zone Evo I cap cone, black
96915	Zone Evo I honeycomb louvre, black



Zone Evo I decor plates, 1 and 2 units.

Barndoors

Baffle

Cap Cone

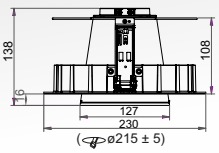
Light data on p. 109-111.

Zone Evo Recessed

Conical recessed spotlight

Zone Evo II Recessed LED

IP20



Scan QR code for latest LED data

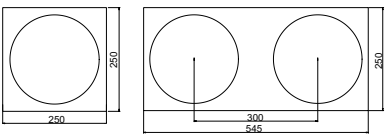
LED 4500 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Medium Spot	45 W	48 W	90 lm/W	>80	3000 K	**59973**	**59976**
	45 W	54 W	80 lm/W	>90	3000 K	**59979**	**59982**
Medium	45 W	48 W	90 lm/W	>80	3000 K	**59974**	**59977**
	45 W	54 W	80 lm/W	>90	3000 K	**59980**	**59983**
Flood	45 W	48 W	90 lm/W	>80	3000 K	**59975**	**59978**
	45 W	54 W	80 lm/W	>90	3000 K	**59981**	**59984**
LED 3000lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
MediumSpot	28 W	32 W	85 lm/W	>80	3000 K	**59955**	**59958**
	26 W	30 W	90 lm/W	>80	4000 K	**59961**	**59964**
	33 W	37 W	74 lm/W	>90	3000 K	**59967**	**59970**
Medium	28 W	32 W	85 lm/W	>80	3000 K	**59956**	**59959**
	26 W	30 W	90 lm/W	>80	4000 K	**59962**	**59965**
	33 W	37 W	74 lm/W	>90	3000 K	**59968**	**59971**
Flood	28 W	32 W	85 lm/W	>80	3000 K	**59957**	**59960**
	26 W	30 W	90 lm/W	>80	4000 K	**59963**	**59966**
	33 W	37 W	74 lm/W	>90	3000 K	**59969**	**59972**
Weight		*Light source*			*Ballast*		
1,3 kg		LED unit included			Driver ordered separately		

>> Available in February 2014.

Zone Evo II accessories

Drivers	
97119-3	Driver LED 3000/4500 lm 50W ST18 incl mains cable
97121-3	Driver LED 3000/4500 lm TE/DALI 50 W ST18 incl mains cable
Accessories	
59996	Zone Evo II decor plate 1 unit, white
59997	Zone Evo II decor plate 1 unit, black
59998	Zone Evo II decor plate 2 unit, white
59999	Zone Evo II decor plate 2 unit, black

Accessories	
97226	Zone Evo II & III barndoors, white
96863	Zone Evo II & III barndoors, black
97223	Zone Evo II & III baffle ring, white
97224	Zone Evo II & III baffle ring, black
96865	Zone Evo II & III cap cone



Zone Evo II decor plates, 1 and 2 units.

Barndoors

Baffle

Cap Cone

Light data on p. 109-111.


24.95
24.95
24.95

Sync.

YET ANOTHER GEOMETRIC expression is represented in the spotlight range, cylindrical, conical – and now squared. Sync is one of the latest spotlight versions that distinctly contrasts with the others due to its angular design.

The standard black or white Sync elegantly matches the track and, despite its solid appearance, provides a soft touch. To give it a more characteristic look, accessories such as eye-catching barn doors can be attached to the front, which also makes options such as baffles, cones and honeycomb louvres possible. The segmented MIRO reflector technology makes the luminaire extremely efficient and the visual performance excellent.

Sync is only available in LED, but its high lumen package makes it suitable for high ceiling installations. There is also a dim version for iTrack with a dim range of 10-100 %.

Sync

Thinking inside the box

DESCRIPTION

Installed on a 3phase track or fixpoint bracket. Universal 3-phase adapter included. Housing in extruded/die cast aluminium. Front ring in thermal plastic. Fortimo SLM 2000 lm, 3000 lm and 4500lm. Available in 3000 K and 4000 K, CRI >80 or >90. Segmented MIRO reflector. Colour settings in white (RAL 9016) and black (9005).

POWER SUPPLY

Operating voltage 230 V.

ACCESSORIES

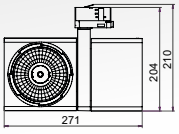
Barndoors, honeycomb louvre and cap cone.

OTHER INFORMATION

Pan 360, tilt 0-90.

Sync

IP20



Scan QR code for latest LED data

LED 4500 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	45 W	48 W	90 lm/W	>80	3000 K	**74368**	**74371**
	45 W	54 W	80 lm/W	>90	3000 K	**74374**	**74377**
Medium	45 W	48 W	90 lm/W	>80	3000 K	**74369**	**74372**
	45 W	54 W	80 lm/W	>90	3000 K	**74375**	**74378**
Flood	45 W	48 W	90 lm/W	>80	3000 K	**74370**	**74373**
	45 W	54 W	80 lm/W	>90	3000 K	**74376**	**74379**
LED 3000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	28 W	32 W	85 lm/W	>80	3000 K	**74350**	**74353**
	26 W	26 W	90 lm/W	>80	4000 K	**74356**	**74359**
	33 W	33 W	74 lm/W	>90	3000 K	**74362**	**74365**
Medium	28 W	32 W	85 lm/W	>80	3000 K	**74351**	**74354**
	26 W	26 W	90 lm/W	>80	4000 K	**74357**	**74360**
	33 W	33 W	74 lm/W	>90	3000 K	**74363**	**74366**
Flood	28 W	32 W	85 lm/W	>80	3000 K	**74352**	**74355**
	26 W	26 W	90 lm/W	>80	4000 K	**74358**	**74361**
	33 W	33 W	74 lm/W	>90	3000 K	**74364**	**74367**
LED 2000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	19 W	21 W	85 lm/W	>80	3000 K	**74332**	**74335**
	18 W	20 W	90 lm/W	>80	4000 K	**74338**	**74341**
Medium	19 W	21 W	85 lm/W	>80	3000 K	**74333**	**74336**
	18 W	20 W	90 lm/W	>80	4000 K	**74339**	**74342**
Flood	19 W	21 W	85 lm/W	>80	3000 K	**74334**	**74337**
	18 W	20 W	90 lm/W	>80	4000 K	**74340**	**74343**
Weight		*Light source*				*Ballast*	
1,5 kg		LED unit included				LED driver included	

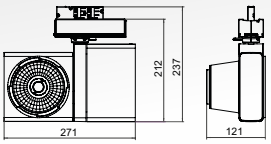
>> Available February 2014.

Light data on p. 109-111.

Sync

Thinking inside the box

Sync LED iTrack DALI



Scan QR code for latest LED data

LED 4500 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	45 W	48 W	90 lm/W	>80	3000 K	**74368-402**	**74371-402**
	45 W	54 W	80 lm/W	>90	3000 K	**74374-402**	**74377-402**
Medium	45 W	48 W	90 lm/W	>80	3000 K	**74369-402**	**74372-402**
	45 W	54 W	80 lm/W	>90	3000 K	**74375-402**	**74378-402**
Flood	45 W	48 W	90 lm/W	>80	3000 K	**74370-402**	**74373-402**
	45 W	54 W	80 lm/W	>9 0	3000 K	**74376-402**	**74379-402**
LED 3000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	28 W	32 W	85 lm/W	>80	3000 K	**74350-402**	**74353-402**
	26 W	30 W	90 lm/W	>80	4000 K	**74356-402**	**74359-402**
	33 W	37 W	74 lm/W	>90	3000 K	**74362-402**	**74365-402**
Medium	28 W	32 W	85 lm/W	>80	3000 K	**74351- 402**	**74354-402**
	26 W	30 W	90 lm/W	>80	4000 K	**74357-402**	**74360-402**
	33 W	37 W	74 lm/W	>90	3000 K	**74363-402**	**74366-402**
Flood	28 W	32 W	85 lm/W	>80	3000 K	**74352-402**	**74355-402**
	26 W	30 W	90 lm/W	>80	4000 K	**74358-402**	**74361-402**
	33 W	37 W	74 lm/W	>90	3000 K	**74364-402**	**74367-402**

Weight	*Light source*	*Ballast*
1,6 kg	LED unit included	LED driver included

>> Available February 2014.

Sync accessories

Accessories	
96863	Barndoors, black
97226	Barndoors, white
97223	Baffle ring, white
97224	Baffle ring, black
96865	Cap Cone, black
96914	Honeycomb louvre, black

Barndoors

Cap Cone

Light data on p. 109-111.

Relay Efficient.

RELAY EFFICIENT is, as its names suggests, an efficient LED shelf luminaire perfect for display and shelf lighting. Relay Efficient attaches with either strong magnets or screws, depending on the material it is being attached to.

Relay Efficient

The efficient LED shelf luminaire

DESCRIPTION

Linear light fixture in aluminium that can be freely plugged – polarity remains constant regardless of connections. Three magnetic hold points.

POWER SUPPLY

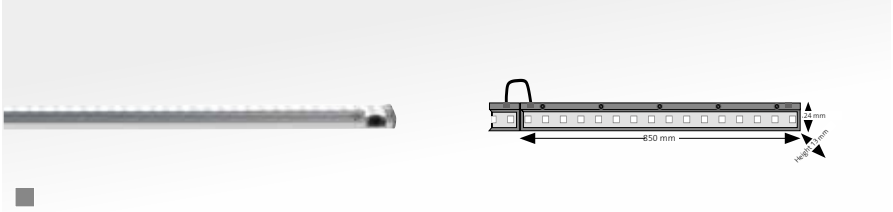
Operating voltage 230V/24 DC.

OTHER INFORMATION

Series connection of max.12pcs.

Relay Efficient

IP20



LED	lm	*W*	*CRI*	*Weight*	*Colour code*	*Silver*
850 mm	525 lm	5,5 - 6 W	>85	0,3 kg	4000 K	**79543**
Light source				*Ballast*		
LED unit included				Driver ordered separately		

Relay Efficient components

Driver	
97198	Relay Efficient driver 65 W incl. 6-way distribution and mains cable
Installation accessories	
97143	Relay linking cable 50 mm
97159	Relay linking cable 125 mm
97144	Relay linking cable 500 mm
97160	Relay linking cable 1000 mm
97145	Relay linking cable 3500 mm
97197	Relay feeding cable

Cube.

IN ALL ITS purity, Cube comes in the cleanest of shapes. It is a sober and minimal luminaire ideal for directional light from high ceilings. The angular Cube comes in LED and is available in ceiling or suspended versions. As all the workings are electronic and incorporated inside the fixture, Cube can be suspended up to several metres from the power supply.

Visit, www.fagerhult.com, for complete Cube range.

Cube

Cubistic beauty

DESIGNER

Johan Lemaître.

DESCRIPTION

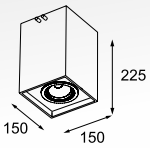
The Cube housing slides over an installation bracket and is fixed by means of 4 black fasteners. Luminaire housing in aluminium. Electronic gear is incorporated inside the fixture. Output/CRI versions: 1300 lm passive cooled Xicato LED with CRI >80, available in 2700 K, 3000 K or 4000 K.

POWER SUPPLY

Operating voltage 230 V.

Cube Ceiling LED

IP20



Scan QR code for latest LED data

LED 1300 lm	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Grey*	*Black*
	23 W	54 lm/W	>80	2700 K	**86671**	**86672**	**86670**
Spot	23 W	54 lm/W	>80	3000 K	**86680**	**86681**	**86679**
	23 W	54 lm/W	>80	4000 K	**86689**	**86690**	**86688**
	23 W	54 lm/W	>80	2700 K	**86674**	**86675**	**86673**
Medium	23 W	54 lm/W	>80	3000 K	**86683**	**86684**	**86682**
	23 W	54 lm/W	>80	4000 K	**86692**	**86693**	**86691**
	23 W	54 lm/W	>80	2700 K	**86677**	**86678**	**86676**
Flood	23 W	54 lm/W	>80	3000 K	**86686**	**86687**	**86685**
	23 W	54 lm/W	>80	4000 K	**86695**	**86696**	**86694**

Weight	*Light source*	*Ballast*
3,0 kg	LED unit included	Driver included

Light data on p. 109-111.

See Prosper Suspended.

SEE PROSPER SUSPENDED originated in a desire to move away from the traditional suspended luminaire design and provide functional accent lighting that also created an atmosphere.

This eye-catching luminaire provides effective exposure of products and merchandise while offering maximum flexibility – the reflector and light source can be tilted 30° and rotated 355°. The luminaire can even be used in the same way as a downlight. See Prosper Pendant can be equipped with up to three different types of light source – metal halide, LED and halogen.

*Visit **www.fagerhult.com** for complete See Prosper range.*

See Prosper Suspended

Eye-catching design

DESCRIPTION

Suspended luminaire for accent lighting. Architectural approach with asymmetrical yet balanced shape. Metal halide, LED and halogen light source options. Body in bent aluminium, top and bottom cover in die casted aluminium and light unit in milled aluminium. Colour setting in white (RAL 9016) and black (RAL 9005). Reflector: MT - High specular faceted aluminium reflector. LED - Metalized polycarbonate reflector. HMG111 - Reflector included in the light source.

POWER SUPPLY

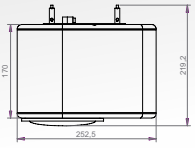
Operating voltage 230 V constant current.

OTHER INFORMATION

Pan 360°, tilt 0-90°.

See Prosper Suspended LED

IP20

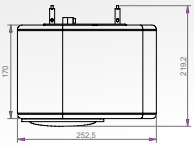


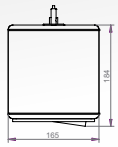
Scan QR code for latest LED data

LED 1000 lm	*W (stated)*	*W (system)*	*lm/W (system)*	*CRI*	*CCT*	*White*	*Black*
Spot	16 W	18 W	43 lm/W	>80	3000 K	**59671**	**59672**
Medium	16 W	18 W	43 lm/W	>80	3000 K	**59619**	**59621**
Flood	18 W	18 W	43 lm/W	>80	3000 K	**59620**	**59622**
Weight		*Light source*			*Ballast*		
2,9 kg		LED unit included			Driver included		

See Prosper Suspended MT

IP20





MT	*W*	*Socket*	*White*	*Black*
Spot	70 W	G12	**53917**	**53918**
Medium	70 W	G12	**53983**	**53985**
Flood	70 W	G12	**53984**	**53986**
MT	*W*	*Socket*	*White*	*Black*
Spot	35 W	G12	**53923**	**53924**
Medium	35 W	G12	**53995**	**53997**
Flood	35 W	G12	**53996**	**53998**
MT	*W*	*Socket*	*White*	*Black*
Spot	20 W	G12	**53976**	**53977**
Medium	20 W	G12	**59607**	**59609**
Flood	20 W	G12	**59608**	**59610**
Weight	*Light source*		*Ballast*	
2,7 Kg	Light source ordered separately		Ballast included	

Light data on p. 109-111.

See Prosper Suspended

Eye-catching design

See Prosper Suspended components

Installation accessories	
91696	Wire suspension for T-bar and surface mounting / pair
96787	Wire bracket chrome (1 unit)
97001	Ceiling cup white
97002	Ceiling cup black
97003	Soft tile mounting plate for See Prosper Recessed

Wire suspension

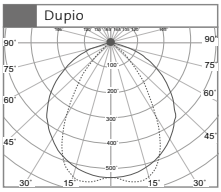
Wire bracket

Light sources		*Socket*	*Colour code*
81939	CDM-T 70 W	G12	830
81930	CDM-T 70 W Elite	G12	930
81960	CDM-T 35 W	G12	830
81970	CDM-T 35 W Elite	G12	930
81875	CDM-T 20 W	G12	830
81425	HMG 111 65 W 8°	G53	
81426	HMG 111 65 W 24°	G53	
81990	HMG 111 65 W 45°	G53	

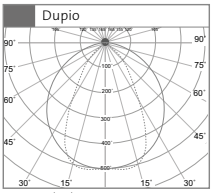
Light data

Our ingredients

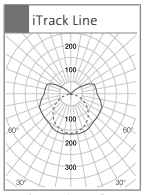
Here we present useful light data for our the selected products suitable for use in food application areas. Light data describes the light distribution and lux value at different heights or the luminaire's luminous intensity in different directions.



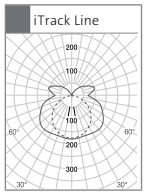
FDH 2x14/24W



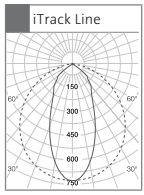
FDH 2x35/49/80W



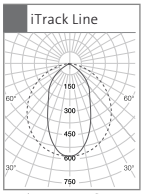
1x32/35W without reflector



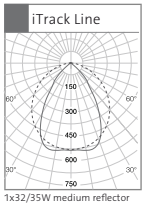
2x32/35W without reflector



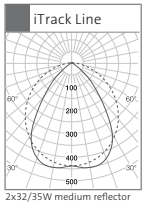
1x32/35W narrow reflector



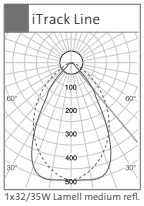
2x32/35W narrow reflector



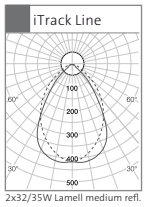
1x32/35W medium reflector



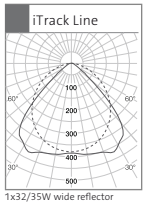
2x32/35W medium reflector



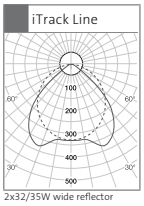
1x32/35W Lamell medium refl.



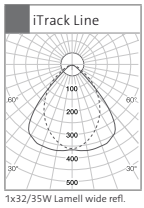
2x32/35W Lamell medium refl.



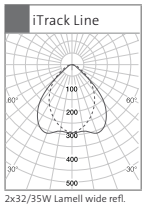
1x32/35W wide reflector



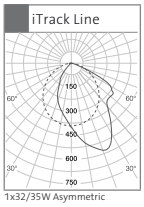
2x32/35W wide reflector



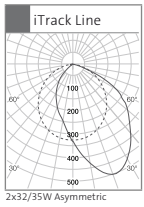
1x32/35W Lamell wide refl.



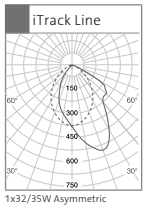
2x32/35W Lamell wide refl.



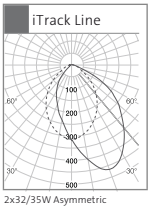
1x32/35W Asymmetric



2x32/35W Asymmetric



1x32/35W Asymmetric



2x32/35W Asymmetric

26° Marathon

m	Ø	Lux
1,0	0,5	4997
2,0	0,9	1249
3,0	1,4	555
4,0	1,8	312

LED Rich

30° Marathon

m	Ø	Lux
1,0	0,5	4483
2,0	1,1	1121
3,0	1,6	498
4,0	2,1	280

LED Rich

43° Marathon

m	Ø	Lux
1,0	0,8	2749
2,0	1,6	687
3,0	2,4	305
4,0	3,2	172

LED Rich

26° Marathon

m	Ø	Lux
1,0	0,5	5092
2,0	0,9	1273
3,0	1,4	566
4,0	1,9	318

LED Glow

30° Marathon

m	Ø	Lux
1,0	0,5	4625
2,0	1,1	1156
3,0	1,6	514
4,0	2,2	289

LED Glow

43° Marathon

m	Ø	Lux
1,0	0,8	2829
2,0	1,6	707
3,0	2,4	314
4,0	3,2	177

LED Glow

26° Marathon

m	Ø	Lux
1,0	0,5	11629
2,0	0,9	2907
3,0	1,4	1292
4,0	1,8	727

LED 4500 lm 830

30° Marathon

m	Ø	Lux
1,0	0,5	10504
2,0	1,1	2626
3,0	1,6	1167
4,0	2,1	656

LED 4500 lm 830

43° Marathon

m	Ø	Lux
1,0	0,8	6399
2,0	1,6	1600
3,0	2,3	711
4,0	3,1	400

LED 4500 lm 830

22° Marathon

m	Ø	Lux
1,0	0,4	10381
2,0	0,8	2595
3,0	1,2	1153
4,0	1,6	649

LED 3000lm 830

27° Marathon

m	Ø	Lux
1,0	0,5	7491
2,0	1,0	1873
3,0	1,4	832
4,0	1,9	468

LED 3000lm 830

41° Marathon		
m	∅	Lux
1,0	0,8	4573
2,0	1,5	1143
3,0	2,2	508
4,0	3,0	286
LED 3000lm 830		

9° Marathon		
m	∅	Lux
1,0	0,2	20805
2,0	0,3	5201
3,0	0,5	2312
4,0	0,6	1300
LED 1100lm 830		

17° Marathon		
m	∅	Lux
1,0	0,3	6221
2,0	0,6	1555
3,0	0,9	691
4,0	1,2	389
LED 1100lm 830		

36° Marathon		
m	∅	Lux
1,0	0,7	1986
2,0	1,3	496
3,0	2,0	221
4,0	2,6	124
LED 1100lm 830		

26° Marathon iTrack		
m	∅	Lux
1,0	0,5	11629
2,0	0,9	2907
3,0	1,4	1292
4,0	1,8	727
LED DALI 4500 lm 830		

30° Marathon iTrack		
m	∅	Lux
1,0	0,5	10504
2,0	1,1	2626
3,0	1,6	1167
4,0	2,1	656
LED DALI 4500 lm 830		

43° Marathon iTrack		
m	∅	Lux
1,0	0,8	6399
2,0	1,6	1600
3,0	2,3	711
4,0	3,1	400
LED DALI 4500 lm 830		

22° Marathon iTrack		
m	∅	Lux
1,0	0,4	10381
2,0	0,8	2595
3,0	1,2	1153
4,0	1,6	649
LED DALI 3000lm 830		

27° Marathon iTrack		
m	∅	Lux
1,0	0,5	7491
2,0	1,0	1873
3,0	1,4	832
4,0	1,9	468
LED DALI 3000lm 830		

41° Marathon iTrack		
m	∅	Lux
1,0	0,8	4573
2,0	1,5	1143
3,0	2,2	508
4,0	3,0	286
LED DALI 3000lm 830		

9° Marathon iTrack		
m	∅	Lux
1,0	0,2	20805
2,0	0,3	5201
3,0	0,5	2312
4,0	0,6	1300
LED DALI 1100lm 830		

17° Marathon iTrack		
m	∅	Lux
1,0	0,3	6221
2,0	0,6	1555
3,0	0,9	691
4,0	1,2	389
LED DALI 1100lm 830		

36° Marathon iTrack		
m	∅	Lux
1,0	0,7	1986
2,0	1,3	496
3,0	2,0	221
4,0	2,6	124
LED DALI 1100lm 830		

23° Zone Evo I		
m	∅	Lux
1,0	0,4	6886
2,0	0,8	1722
3,0	1,2	765
4,0	1,6	430
LED 2000lm 830		

27° Zone Evo I		
m	∅	Lux
1,0	0,5	5102
2,0	1,0	1275
3,0	1,4	567
4,0	1,9	319
LED 2000lm 830		

41° Zone Evo I		
m	∅	Lux
1,0	0,8	3202
2,0	1,5	800
3,0	2,2	356
4,0	3,0	200
LED 2000lm 830		

9° Zone Evo I		
m	∅	Lux
1,0	0,2	20805
2,0	0,3	5201
3,0	0,5	2312
4,0	0,6	1300
LED 1100lm 830		

17° Zone Evo I		
m	∅	Lux
1,0	0,3	6221
2,0	0,6	1555
3,0	0,9	691
4,0	1,2	389
LED 1100lm 830		

36° Zone Evo I		
m	∅	Lux
1,0	0,7	1986
2,0	1,3	496
3,0	2,0	221
4,0	2,6	124
LED 1100lm 830		

9° Zone Evo I iTrack		
m	∅	Lux
1,0	0,2	20805
2,0	0,3	5201
3,0	0,5	2312
4,0	0,6	1300
LED DALI 1100lm 830		

17° Zone Evo I iTrack		
m	∅	Lux
1,0	0,3	6221
2,0	0,6	1555
3,0	0,9	691
4,0	1,2	389
LED DALI 1100lm 830		

36° Zone Evo I iTrack		
m	∅	Lux
1,0	0,7	1986
2,0	1,3	496
3,0	2,0	221
4,0	2,6	124
LED DALI 1100lm 830		

16° Zone Evo II		
m	∅	Lux
1,0	0,3	24598
2,0	0,6	6149
3,0	0,9	2733
4,0	1,2	1537
LED 3000lm 830		

26° Zone Evo II		
m	∅	Lux
1,0	0,5	9372
2,0	0,9	2343
3,0	1,4	1041
4,0	1,8	586
LED 3000lm 830		

44° Zone Evo II		
m	∅	Lux
1,0	0,8	4478
2,0	1,6	1119
3,0	2,5	498
4,0	3,3	280
LED 3000lm 830		

16° Zone Evo III iTrack		
m	∅	Lux
1,0	0,3	24598
2,0	0,6	6149
3,0	0,9	2733
4,0	1,2	1537
LED DALI 3000lm 830		

26° Zone Evo III iTrack		
m	∅	Lux
1,0	0,5	9372
2,0	0,9	2343
3,0	1,4	1041
4,0	1,8	586
LED DALI 3000lm 830		

44° Zone Evo III iTrack		
m	∅	Lux
1,0	0,8	4478
2,0	1,6	1119
3,0	2,5	498
4,0	3,3	280
LED DALI 3000lm 830		

9° Zone Evo I rec		
m	∅	Lux
1,0	0,2	20805
2,0	0,3	5201
3,0	0,5	2312
4,0	0,6	1300
LED 1100lm 830		

17° Zone Evo I rec		
m	∅	Lux
1,0	0,3	6221
2,0	0,6	1555
3,0	0,9	691
4,0	1,2	389
LED 1100lm 830		

36° Zone Evo I rec		
m	∅	Lux
1,0	0,7	1986
2,0	1,3	496
3,0	2,0	221
4,0	2,6	124
LED 1100lm 830		

16° Zone Evo II Rec.		
m	∅	Lux
1,0	0,3	24598
2,0	0,6	6149
3,0	0,9	2733
4,0	1,2	1537
LED 3000lm 830		

26° Zone Evo II Rec.		
m	∅	Lux
1,0	0,5	9372
2,0	0,9	2343
3,0	1,4	1041
4,0	1,8	586
LED 3000lm 830		

44° Zone Evo II Rec.		
m	∅	Lux
1,0	0,8	4478
2,0	1,6	1119
3,0	2,5	498
4,0	3,3	280
LED 3000lm 830		

16° Sync		
m	∅	Lux
1,0	0,3	24598
2,0	0,6	6149
3,0	0,9	2733
4,0	1,2	1537
LED 3000lm 830		

26° Sync		
m	∅	Lux
1,0	0,5	9372
2,0	0,9	2343
3,0	1,4	1041
4,0	1,8	586
LED 3000lm 830		

44° Sync		
m	∅	Lux
1,0	0,8	4478
2,0	1,6	1119
3,0	2,5	498
4,0	3,3	280
LED 3000lm 830		

16° Sync iTrack		
m	∅	Lux
1,0	0,3	24598
2,0	0,6	6149
3,0	0,9	2733
4,0	1,2	1537
LED DALI 3000lm 830		

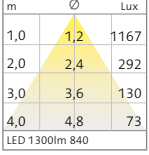
26° Sync iTrack		
m	∅	Lux
1,0	0,5	9372
2,0	0,9	2343
3,0	1,4	1041
4,0	1,8	586
LED DALI 3000lm 830		

44° Sync iTrack		
m	∅	Lux
1,0	0,8	4478
2,0	1,6	1119
3,0	2,5	498
4,0	3,3	280
LED DALI 3000lm 830		

26° Cube Ceiling		
m	∅	Lux
1,0	0,5	3964
2,0	0,9	991
3,0	1,4	440
4,0	1,8	248
LED 1300lm 840		

48° Cube Ceiling		
m	∅	Lux
1,0	0,9	1952
2,0	1,8	488
3,0	2,7	217
4,0	3,6	122
LED 1300lm 840		

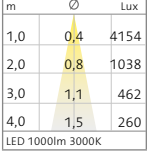
62° Cube Ceiling



m	Ø	Lux
1,0	1,2	1167
2,0	2,4	292
3,0	3,6	130
4,0	4,8	73

LED 1300lm 840

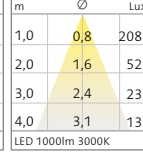
21° See Prosper



m	Ø	Lux
1,0	0,4	4154
2,0	0,8	1038
3,0	1,1	462
4,0	1,5	260

LED 1000lm 3000K

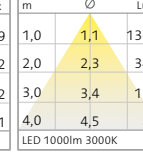
43° See Prosper



m	Ø	Lux
1,0	0,8	2089
2,0	1,6	522
3,0	2,4	232
4,0	3,1	131

LED 1000lm 3000K

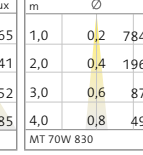
59° See Prosper



m	Ø	Lux
1,0	1,1	1365
2,0	2,3	341
3,0	3,4	152
4,0	4,5	85

LED 1000lm 3000K

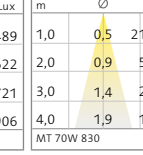
11° See Prosper



m	Ø	Lux
1,0	0,2	78489
2,0	0,4	19622
3,0	0,6	8721
4,0	0,8	4906

MT 70W 830

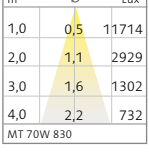
26° See Prosper



m	Ø	Lux
1,0	0,5	21847
2,0	0,9	5462
3,0	1,4	2427
4,0	1,9	1365

MT 70W 830

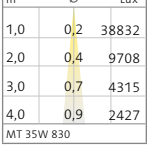
30° See Prosper



m	Ø	Lux
1,0	0,5	11714
2,0	1,1	2929
3,0	1,6	1302
4,0	2,2	732

MT 70W 830

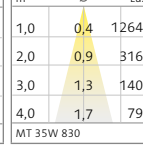
12° See Prosper



m	Ø	Lux
1,0	0,2	38832
2,0	0,4	9708
3,0	0,7	4315
4,0	0,9	2427

MT 35W 830

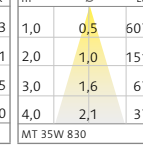
25° See Prosper



m	Ø	Lux
1,0	0,4	12643
2,0	0,9	3161
3,0	1,3	1405
4,0	1,7	790

MT 35W 830

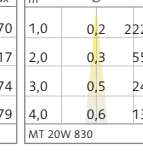
29° See Prosper



m	Ø	Lux
1,0	0,5	6070
2,0	1,0	1517
3,0	1,6	674
4,0	2,1	379

MT 35W 830

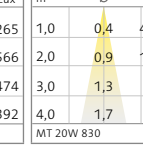
9° See Prosper



m	Ø	Lux
1,0	0,2	22265
2,0	0,3	5566
3,0	0,5	2474
4,0	0,6	1392

MT 20W 830

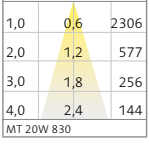
24° See Prosper



m	Ø	Lux
1,0	0,4	4996
2,0	0,9	1249
3,0	1,3	555
4,0	1,7	312

MT 20W 830

34° See Prosper



m	Ø	Lux
1,0	0,6	2306
2,0	1,2	577
3,0	1,8	256
4,0	2,4	144

MT 20W 830

”Light soothes, reveals, conceals and enhance. Imagine a world without it?

Anders Strömberg
Concept Development Manager, Fagerhult.

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