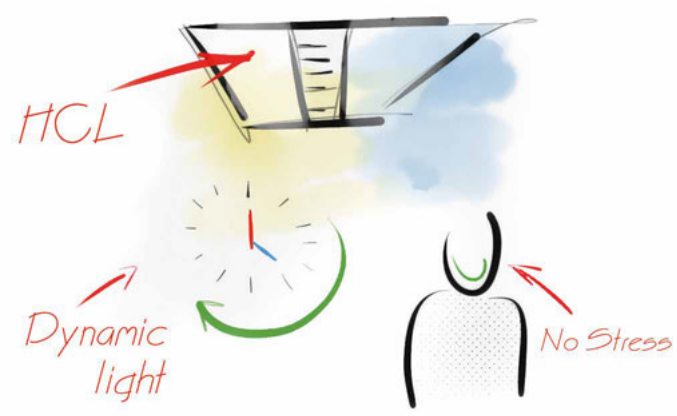
3F HCL for Tunable White fixtures

System to vary colour temperature



People and their requirements have always been at the centre of our attention when designing our products.

Thanks to the new HCL luminaires, ensuring the comfort and health of the individual finds a new point of reference thanks to a solution which can actively stimulate biorhythms.

Natural light is one of the most important sensory stimuli for our body, and it also has an enormous effect on our mental and emotional state. For this reason, HCL luminaires have been designed to replicate natural light, taking the following requirements into consideration:

- Dynamism of light over time.
- Dynamism of colour temperature over time.
- Symmetrical light diffusion.
- Freedom of use for each individual.

The latest research in the sector has shown that those who work in environments with windows and good lighting are exposed to 173% more natural light during working hours and sleep on average 46 minutes longer (each night) compared to others, as they are less affected by problems such as insomnia. The result is a general increase in well-being.
There is ever-increasing evidence to support the fact that exposure to light during the day, particularly during the morning, is beneficial to health in terms of its effects on mood, mental lucidity and the metabolism:

Hospitals

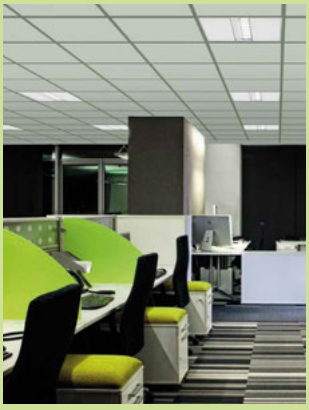
In healthcare facilities, Human Centric Lighting can:

- Reduce sleep disturbances, thus limiting the need for drugs and reducing medical assistance requirements
- Improve patient well-being and activity during the day

Schools

In schools, Human Centric Lighting technology can significantly improve concentration and cognitive performance.
A 45% reduction in errors and a 9% improvement in cognitive speed have been demonstrated.

Technology
HCL
3F Filippi



Offices

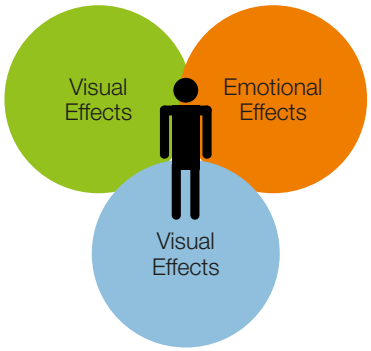
In offices, Human Centric Lighting technology can increase employees' motivation and energy, improving day-to-day productivity, particularly in the period after lunch.
What's more, in environments without natural light, it can help recreate daily biorhythms.

Commercial Premises

In commercial situations, Human Centric Lighting offers the possibility to diversify light distribution and colour on the basis of scenarios linked to the products or concepts being presented.
This provides a flexibility of use at each point of sale which offers savings in terms of time and money.

Individual well-being is strictly personal, and so this luminaire is managed by a control unit (external and not included with the product) which provides everyone the possibility to create "their own light cycle" which best meets their requirements.

If you require more information, do not hesitate to contact our Sales Network or our Technical Offices.



Light influences mood and can trigger both positive and negative emotions.

HCL luminaires allow users to change both intensity and temperature of the emitted light, thus improving comfort and increasing the feeling of well-being.

A third photoreceptor in the human eye was discovered in 2001, which is responsible for our light response for regulating our biological clock and circadian rhythms.

Recent studies (performed by Lighting Europe) have shown that HCL luminaires improve concentration as well as the safety and efficiency of the workplace or training and school environments. For this reason, 3F Filippi has decided to create a series of new luminaires to help people feel better by putting their requirements at the centre of the design, also from a biological point of view.

In order to take proper advantage of these luminaires, it is essential that:

- The artificial light follows the cycle of the natural light.
- The management systems can also be manually adjusted, according to each user's sensitivity.
- Right from the lighting design stage, factors such as exposure of the environment to natural light, the users' biological situations and the tasks they must perform are taken into account.
- Always consult a qualified and reliable lighting designer.

Biorhythms depend on signals which derive from the quantity and the quality of natural light and the environmental colour temperature:

The brain is stimulated:

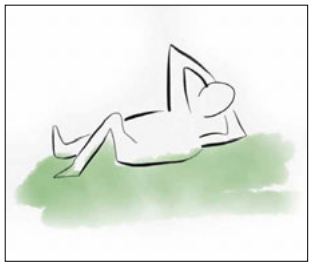
- By cold light present during daylight hours (6,500 K) which allows us to be more active and concentrate harder.
- By warm light present in the morning and evening (2,700K) which induces a greater level of relaxation.

Thanks to HCL technology, everyone can improve their sleep cycles, mental and emotional states by themselves.

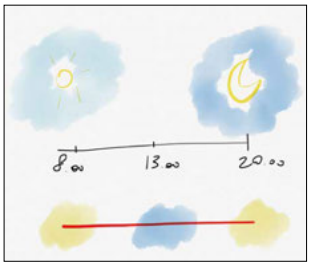
HCL technology allows for:

Comfort and well-being, particularly in environments in which a lot of time is spent.

Lighting which follows the **natural** daylight cycle.



Less **environmental stress**, which reduces physical and mental exertion.



Automatic and/or manual management of the light intensity **and** colour **temperature.**

Characteristics:

- Control of variation of the white colour temperature (Tunable-white).
- Simulated changing of daylight over the course of the day.
- Modulation of the colour temperature along the Planck curve from 2700K to 6500K.
- Colour rendering index CRI >80.
- Colour tolerance: 3 MacAdam ellipses.
- LED source luminous efficiency - up to 155 lm/W.

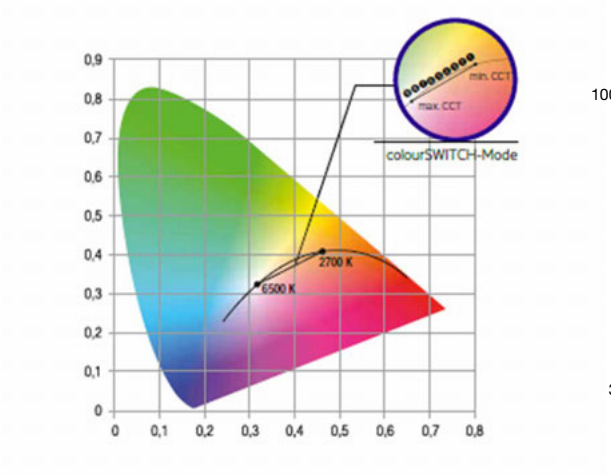
3F HCL for Tunable White fixtures

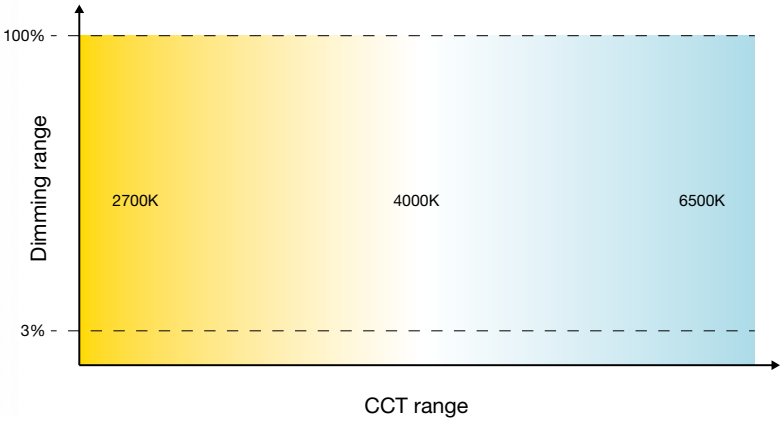
Fixtures available

- L 323x10W LED DT8 TW LGS 596x596
- 3F Diagon 25W DT8 TW SOFT UGR 596x596
- 3F Diagon 25W DT8 TW SOFT UGR 621x621
- 3F Diagon P 25W DT8 TW SOFT UGR 596x596
- 3F Travetta LED 2x22W DT8 TW 2MG L1590

2-channel DT8 driver - constant colorimetric on all attenuation levels

Second generation drivers provide even more room for maneuver in terms of design with the advanced adjustment range from 3% to 100%.
Color temperatures are precisely controlled and with infinite variability, while the drivers reliably maintain the selected range between all attenuation levels.





The TW Tunable White fixtures can be regulated using three different systems:
Wired automatic control system
3F Bluetooth control system

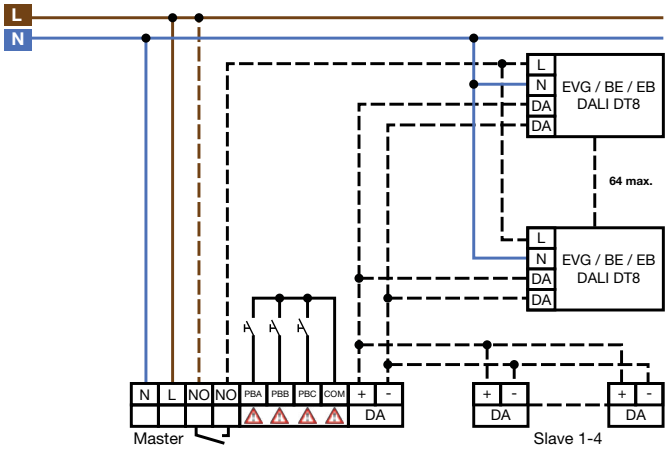
Wired control system

Features

The HCL DT8 presence and light sensors allow the management of a group of Tunable White (TW) devices, up to a maximum of 64 drivers.
The sensors have the following characteristics:

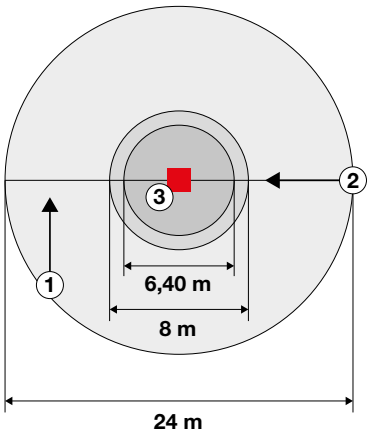
- Integrated presence detector capable of controlling up to 64 DALI DT8 devices;
- Integrated brightness detected for automatic adjustment of the luminous flux of the luminaires, based on the supply of natural light;
- Integrated clock for automatically adjusting the color temperature following the circadian rhythm by programming from the free APP;
- n. 3 output channels for HCL control of 3 groups of TW devices;
- n. 1 DALI output channel;
- n. 1 relay output channel (max 300W LED).
- n. 3 NO button inputs: 1 button to adjust the luminous flux of the HCL channel, 1 button for DALI channel control and 1 button for relay channel control.

Electrical connection diagram



Detection scheme

1. Diagonal approach to the detector
2. Frontal approach to the detector
3. Fixed position: h 2,5 m



Wired control systems
Accessories

Recessed presence detector with integrated clock for the management and control of Tunable White (TW) devices, remotely controllable, circular detection area Ø 24 m, equipped with Master function. Integrated light sensor for automatic regulation of constant light n. 3 output channels for HCL control of n. 3 groups of TW appliances, n. 1 DALI output channel, n. 1 relay output channel (max 300 W LED). Drive up to 64 DALI drivers.

Code	Item
A3035 NEW	Sensore HCL DT8

CE IP20

Ceiling presence detector with integrated clock for the management and control of Tunable White (TW) devices, remotely controllable, circular detection area Ø 24 m, equipped with Master function. Integrated light sensor for automatic regulation of constant light n. 3 output channels for HCL control of n. 3 groups of TW appliances, n. 1 DALI output channel, n. 1 relay output channel (max 300 W LED). Drive up to 64 DALI drivers.

Code	Item
A3036 NEW	Sensore HCL DT8-ext

CE IP20

IR adapter for Smartphones, compatible with all programmable sensors. Free App available for Android and iOS devices.

Code	Item
A3022	IR-Adapter for Smartphone

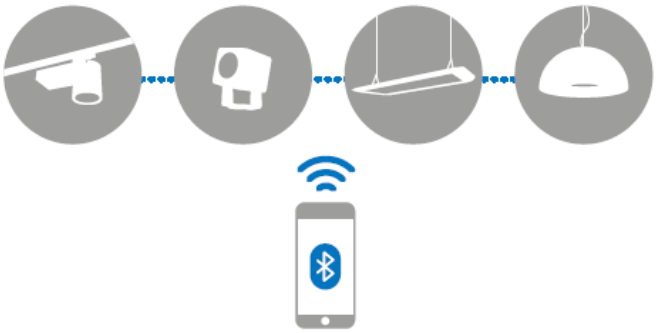
Mandatory accessory for programming the HCL DT8 sensors.

CE

3F Bluetooth control system

Characteristics

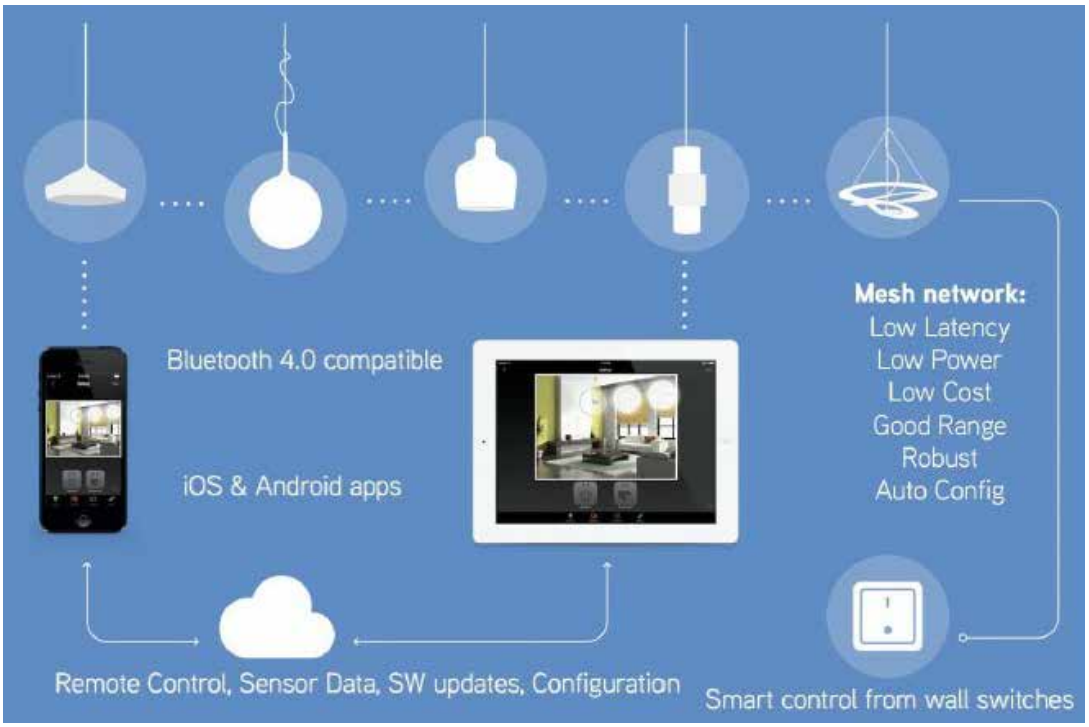
3F Bluetooth is the completely wireless regulation system that can manage DALI and Tunable White DALI DT8 fixtures.
Thanks to the intuitive simplicity of the application developed for iOS and Android all you need is a mobile phone or another mobile device and anyone can create and manage their own lighting system autonomously by controlling fixtures individually or in groups according to the needs and functions required.
It can also be managed through standard handsets using specific accessories.



Functions

With the 3F Bluetooth management system it is possible to create a “mesh network” of fixtures which can be managed using mobile devices or handsets:

- Turn the fixtures on/off
- Regulate luminous intensity
- Regulate colour temperature
- Configure lighting scenes
- Configure animated scenes (dynamic scenes or different sequences of scenes).
- Timer Function: set fade times between scenes and animated scenes, programme the date and duration
- Geolocation: by activating this function it is possible to programme to turn the fixtures on/off that can be associated automatically to sunrise and sunset independently of the time of year (astronomical clock).
- Cloud Function: allows to share different fixtures and access the network remotely. Remote access one fixture which acts as an access point while the others connect via the Cloud.



3F Bluetooth control system
Accessories

BLE DALI radio module, a wireless control unit with a DALI interface. The module can only be used in a closed system and must not be connected to an existing DALI network. The module is Bluetooth controlled using an app for smartphones and tablets using Bluetooth 4.0 technology. The fixtures automatically create an adaptive, robust and reliable Bluetooth mesh network allowing a large number of devices to be controlled in a simple and efficient way.

Code	Item
A3090	BLE DALI Radio Module

CE IP20

BLE radio panel, Bluetooth user interface for wall installation. The BLE radio panel in addition to switching the light fixtures on and off allows to dim, change the colour temperature in the case of fixtures equipped with such technology, individual control of fixtures and to manage lighting or animation scenes.

Code	Item
A3091	Radio BLE plate keys

CE IP40

Extender IP20 1T5352, allows for Bluetooth control with DALI interface. Generates a local DALI bus with the capacity to drive up to 64 devices. Allows for control of groups of fixtures in indoor applications. It is also equipped with a relay that can control non-dimmable fixtures up to a maximum of 6A.

Code	Item
A3095	EXTENDER IP20

CE IP20

BLE DALI IP67 1E3048 radio module to control individual fixtures externally equipped with a DALI driver. The module needs to be positioned in order to receive the radio signal. The distance from the lighting fixtures can be up to 50 m.

Code	Item
A3096	IP67 BLE Radio Module

CE IP67

Extender IP67 1E3049, allows for Bluetooth control with DALI interface. Generates a local DALI bus with the capacity to drive up to 64 devices. Allows for control of groups of fixtures in outdoor applications.

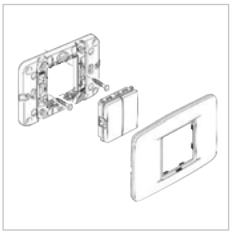
Code	Item
A3097	EXTENDER IP67

CE IP67

BLE radio control, flat four button command with a 2.4 GHz radio transmitter, standard Bluetooth Low Energy, energy harvesting power supplied by the integrated electrodynamic generator, optional version with dedicated colour buttons Eikon 20506 or 20506.2, Arké 19506 or 19506.2 or Plana 14506 or 14506.2 - 2 modules.

Code	Item
A3099	Radio BLE command

CE IP40



Arkè support kit, 2 buttons (4 switches) and a terminal panel to control the transmitter (code A3099).

Code	Item
A3100	Kit Arkè support plate keys for A3099

CE