



More Light
إنارة أكثر

 **Noortek**

 مجموعة الناصر
Al Nasser Group

Production Line
Light for Industry

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الموثوقية

reliability

durability

المتانة

الأصالة

heritage

Noortek is Al Nasser's high end professional lighting brand. We offer advanced and reliable solutions for all types of indoor and outdoor lighting applications, including lighting controls.

We enable you to create more value with lighting applications. More efficiency, more safety, more atmosphere, more comfort: More light.

نورتك هي العلامة التجارية المفضلة التابعة لمجموعة الناصر في مجال الإنارة. نحن نقدم حلولاً متقدمة وموثوقة لجميع أنواع استخدامات الإنارة الداخلية والخارجية، بما في ذلك التحكم في الرنارة.

نحن نتيح لك إمكانية خلق قيمة أعلى باستخدام الإنارة. المزيد من الكفاءة والأمان وبيئة أفضل: المزيد من الإنارة



**ACTIVE LIGHT
| CONNECTING
WITH NATURE**

ACTIVE LIGHT | CONNECTING WITH NATURE

• Creating Light Creates Precision

Noortek in industry is as unique and dynamic as the employees, the processes and the layout of different production halls. Human Centric Lighting puts the focus of the lighting design firmly on the individual. Visual, emotional and biological needs are fully supported by a blend of Active Light and additional workplace-oriented lighting for work during the day and the night. This approach also facilitates accurate working and improved quality. Pioneering lighting solutions with activity-based lighting use innovative sensor technology to automatically adapt to the specific situation.



Intensity

Dynamically adjusted lighting levels help employees with their regular visual tasks. Active Light helps reduce error rates and increase worker safety.



Direction

Uniform and shadow-free illumination minimises glare even with glossy surfaces. Adjusting the direction of the light towards the visual object with Active Light enhances visual quality. Precise work is promoted and fatigue is simultaneously kept to a minimum.



Colour

Active Light means tailoring light colours to reflect age, user preference and working hours, increasing well-being and boosting employee productivity.



Time

Artificial light based on the natural course of the day helps support the internal clock. Luminaires controlled by sensors, which only switch on when light is required, reduce costs and minimise energy consumption.

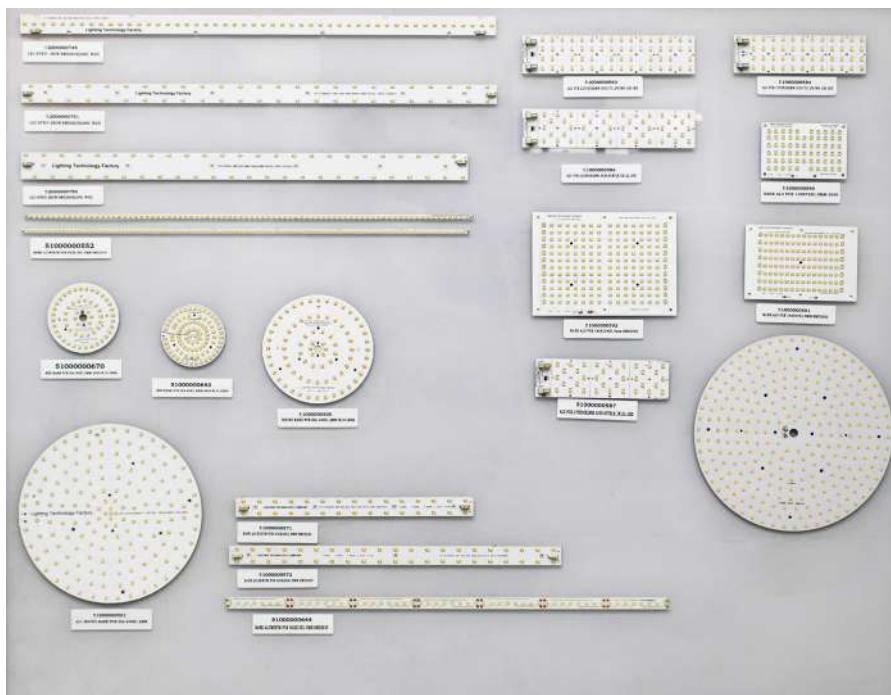


**LEADING MANUFACTURER
OF LED LIGHTS AUTOMATIC
MANUFACTURING MACHINES**

- Solder Paste screen Printer
- Pick and place M/C
- Hot reflow oven

LEADING MANUFACTURER OF LED LIGHTS AUTOMATIC MANUFACTURING MACHINES

Leading Manufacturer Of LED Lights Automatic Manufacturing Machines has been a leading LED lighting industry . It has semi-automatic, fully automatic assembly machines for Downlight light, LED panel light, LED street light, flood light and others. It has glue dispensing machine, logo laser printing machine, aging test machine, automatic packing machine and relative laboratory devices. It uses cutting-edge technology and strong R&D and production capacity to promote the upgrading of the lighting industry and help its clients grow stronger and reach farther.





**LIGHTING
REQUIREMENTS**

LIGHTING REQUIREMENTS

Adaptability

In these days of increasing digitalisation, more and more work processes run completely automatically. Where man and machine communicate directly with one another using intelligent systems, is within reach. As an active part of the overall system, light will work as a connecting element – for example, to collect data or to aid navigation.

Productivity

The job market is influenced by high education standards and qualifications, as well as by demographic changes. Companies have to respond to these changes and adapt their lighting to suit increasingly complex work processes, diverse visual tasks and the individual needs of employees.





**LIGHTING
REQUIREMENTS**

LIGHTING REQUIREMENTS

Reliability

Thanks to the wide range of environmental conditions in industrial facilities and production areas, lighting systems need to be both reliable and application-specific. Rather than uniform solutions, these projects demand reliable and resistant products that are optimised to meet individual application requirements and customer needs.

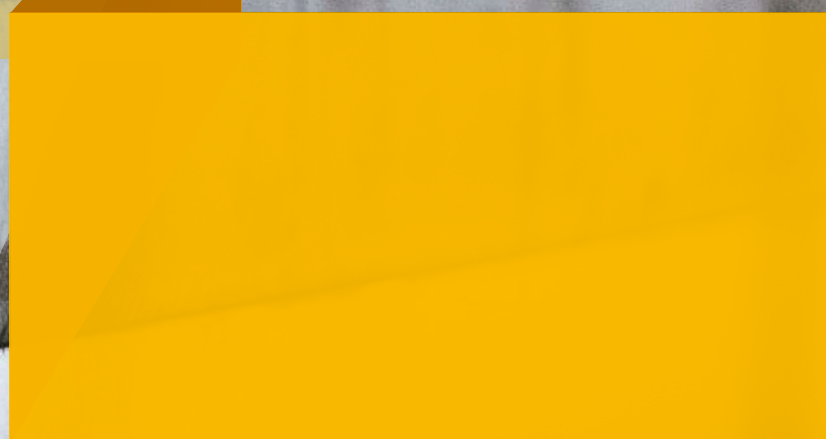
Efficiency

Resources are becoming more and more scarce. One direct consequence of this phenomenon is steadily rising energy costs. This calls for a rethink – particularly in environments in which luminaires are almost constantly in use. The combination of LED luminaires and lighting control systems provides an energy efficient solution that cuts both energy and maintenance costs.



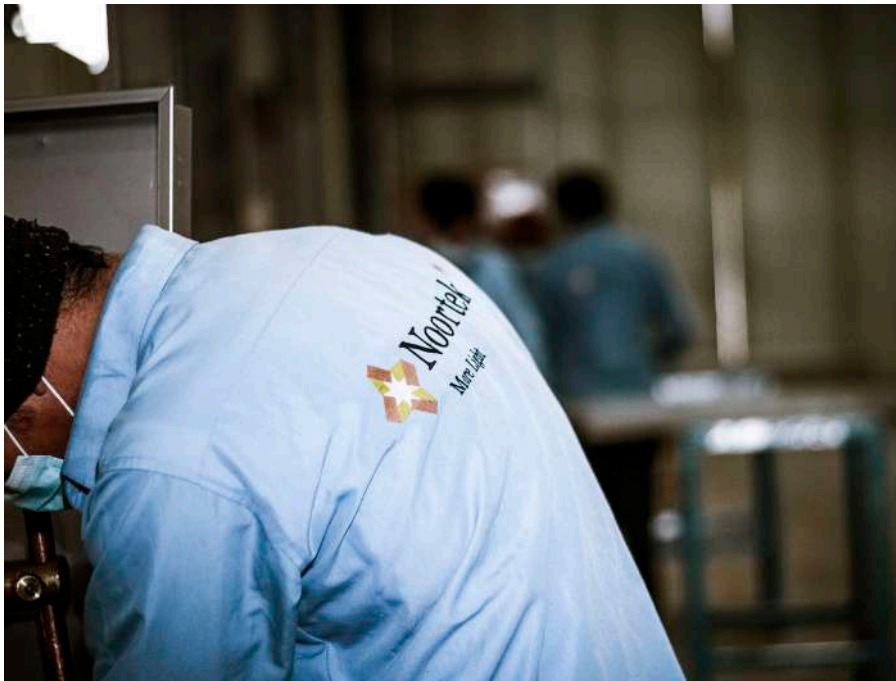


OUR PRODUCTS



OUR PRODUCTS

We have semi-automatic, fully automatic assembly machines for Downlight light, LED panel light, LED street light, flood light and others. It has glue dispensing machine, logo laser printing machine, aging test machine, automatic packing machine and relative laboratory devices.





LOGISTICS

- Maintenance
- Energy and cost savings
- Ideal illumination
- High flexibility

LOGISTICS

Maintenance

Maintenance work in logistics warehouses with high ceilings is a time-consuming and expensive task. The luminaires are often very hard to reach, which is why replacing defective lamps or ballasts also takes a lot of time and effort. Durable LED luminaires reduce maintenance requirements to a minimum. Innovative constructions reduce dirt accumulation and mean that luminaires stay cool and are easy to clean.

Energy and cost savings

Long operating hours and immense spatial dimensions lead to high energy consumption. At least 20 per cent of operating costs in a logistics facility are for lighting. Efficient LED luminaires with targeted light control enable long-term reduction of these costs. In addition, lighting management systems with corridor functions can reduce lighting usage times – especially in those areas that are only occasionally used by people due to increasing automation.

Ideal illumination

Fork-lift drivers frequently have to look directly into light from a luminaire when loading and unloading high shelves. Ideal light quality with good glare suppression not only enhances productivity and motivation but also increases safety. Optics optimised for logistics guide the light in a targeted way to the place where the visual task is being conducted. High-bay warehouses benefit from the use of luminaires with narrow-beam optics that provide even illumination in vertical shelving areas. Horizontal transportation areas are also well illuminated.

High flexibility

Trunking systems offer added flexibility to respond quickly and easily to altered layouts. If LED optics are replaced, the general appearance of the luminaires remains unchanged, despite the different light distribution.





METAL WORKING

- Shiny surfaces
- Oily environments
- Durability
- Variable work tasks

METAL WORKING

Shiny surfaces

The range of visual tasks in the metal industry is particularly wide. General operations and detailed inspection work often occur side by side, even though they have individual requirements in terms of uniformity, glare and illuminance. Disruptive glare caused by reflection, which often occurs when working with reflective materials, can be minimised with uniform light distribution and the correct luminaire arrangement. This helps workers focus and limits potential sources of error.

Oily environments

Luminaires are regularly exposed to coolants, oil vapours and metallic dust in metal-working applications. Luminaires made of PMMA with high IP protection classes offer maximum robustness in these kinds of environments and prevent the entry of foreign objects. Conversely, optics made of PC should not be used, as they can break upon direct contact with oils and lubricants.

Durability

Our industrial LED luminaires are specially designed for demanding environments and are equipped for a long service life with the lowest possible reduction in luminous flux. High degrees of protection and carefully designed luminaire surfaces minimise unwanted dirt accumulation, so that expensive cleaning and service intervals can be deferred.

Variable work tasks

When it comes to metal working, one task rarely takes place in the same workplace for the entire service life of the lighting. If tasks in the production area change, lighting conditions also have to be adapted. Trunking systems are characterised by a high degree of flexibility and adaptability. The position, type and number of luminaires can be quickly and easily altered to suit the new visual task.

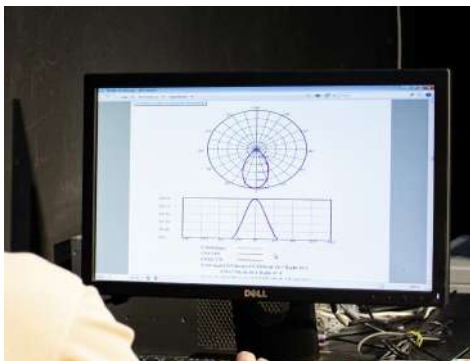


QUALITY CONTROL

Quality control Gates / Capabilities

QUALITY CONTROL AT NOORTEK

Products from Noortek fulfil the highest quality requirements, impress customers on account of their long service life and thereby set the standard for the industry. To ensure the continual improvement of products and services, Noortek has implemented an uncompromising quality management system. This has involved certifying all production locations in accordance with the international standard ISO 9001. Over and above this, Noortek is one of the few companies in this sector that has accredited measuring laboratories at its disposal, ensuring that the development process consistently operates at the highest level.



A detailed analysis of the lighting performance guarantees that the planning data calculated corresponds exactly to reality and supports specific visual tasks in the best possible way.



The water resistance of Noortek luminaires is tested under extreme conditions to maintain outstanding levels of reliability.



SMT MACHINE LINE FOR SMD MODULES

- Solder Paste screen Printer
- Pick and place M/C
- Hot reflow oven



SMT MACHINE LINE FOR SMD MODULES

• Solder Paste screen Printer

What is Solder Paste Screen Printer Machine?

Solder Paste Screen Printer for SMT have been widely used by Top electronic companies in and the PCB industry for screen solder mask. This equipment / machine has also been extensively used in the hybrid industry for screening solder paste.

However, different SMT equipment are used for the screening of solder mask and solder paste. The cost of screen printers can vary widely, depending on their degree of automation and the size of boards they can handle.

Solder Paste Printing Systems are available in three configurations:

Manual;

Semi-automatic; and
Fully automatic.

The machine can be table mounted, stand-alone, or in-line. Many semi-automatic printers offer manual vision alignment capability, while fully automatic printers offer automatic vision alignment.

• Pick and place M/C

What is an SMT pick-and-place machine called?

Image result for SMT MACHINE FOR SMD Pick and place M/C

Surface Mount Machines are also called Pick-and-place machines or SMT Component Placement Systems.

SMD pick and place machines for all types of SMT PCB assembly, from prototyping to high-volume production, with specialized pick and place machines for high mix SMT assembly, circuit board assembly lines with frequent job changeovers, and LED assembly. All pick and place machines are supported by our in-house technical staff.

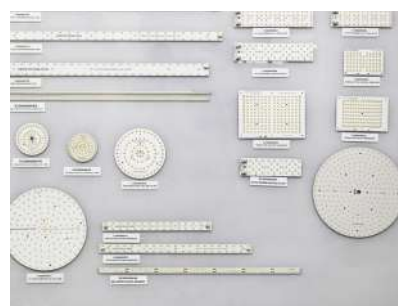
• What Is a Reflow Oven?

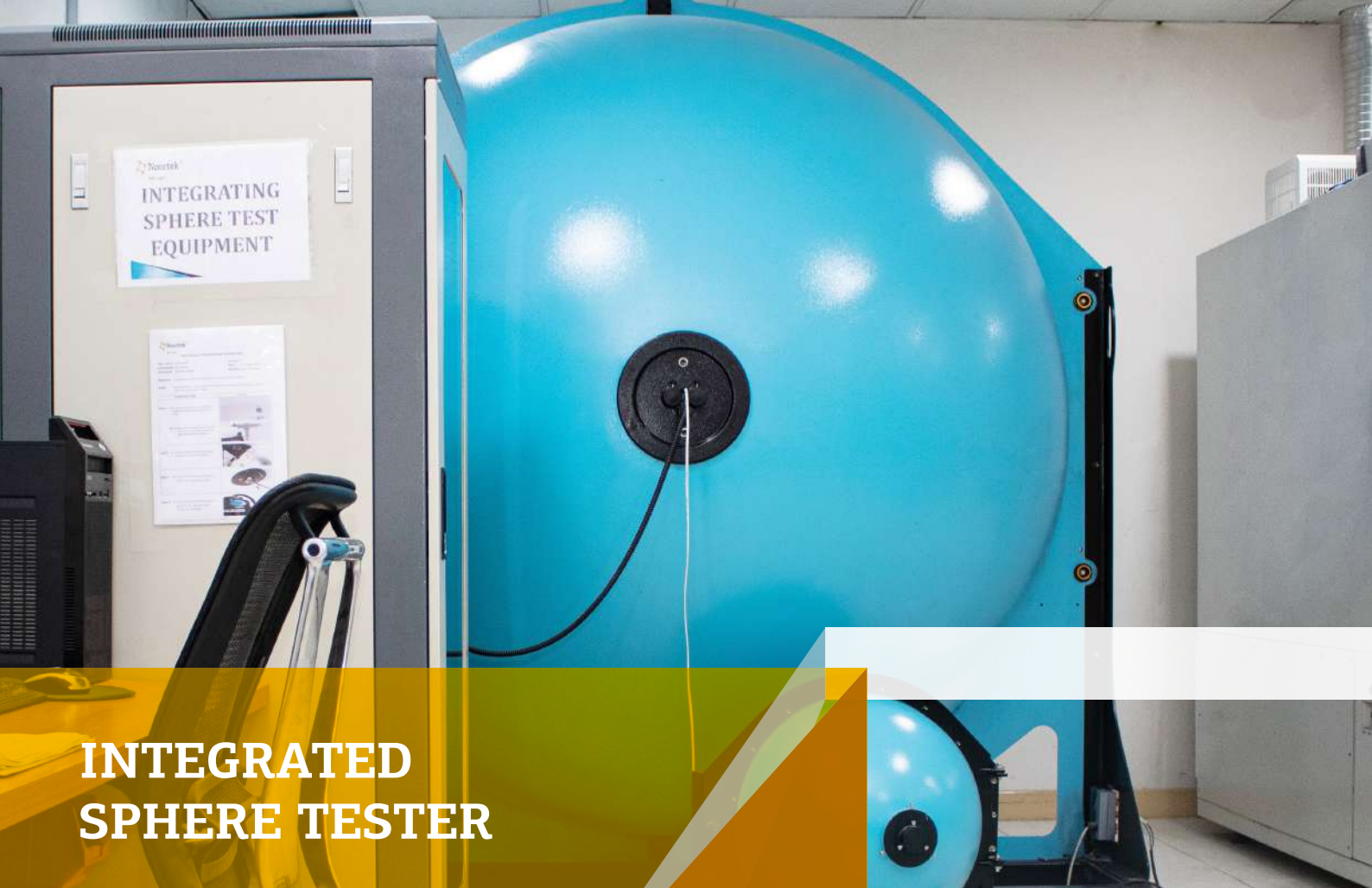
A SMT reflow oven is an essential machine of the thermal processing of solder for electronics manufacturing. These machines vary in size from small boxy ovens to in-line- or conveyor-belt-style options. When an operator places an electronic product inside the device, it precisely applies surface mount components to the printed circuit board (PCB).

The PCB reflow oven has become a staple of the electronics manufacturing industry due to its advantageous size, precision, and speed. Manufacturers can select from various sizes and types, ranging from miniature models to commercial ovens. There are also homemade options, though they have limited functionality and longevity.

These types of machines have become popular because they streamline time and resources consumption. Reflow ovens for PCB assembly represent a significant upgrade over manual soldering of electronic components to PCBs in all measurable values. Plus, they offer high thermal transfer efficiency, more consistent soldering, and even heat distribution.

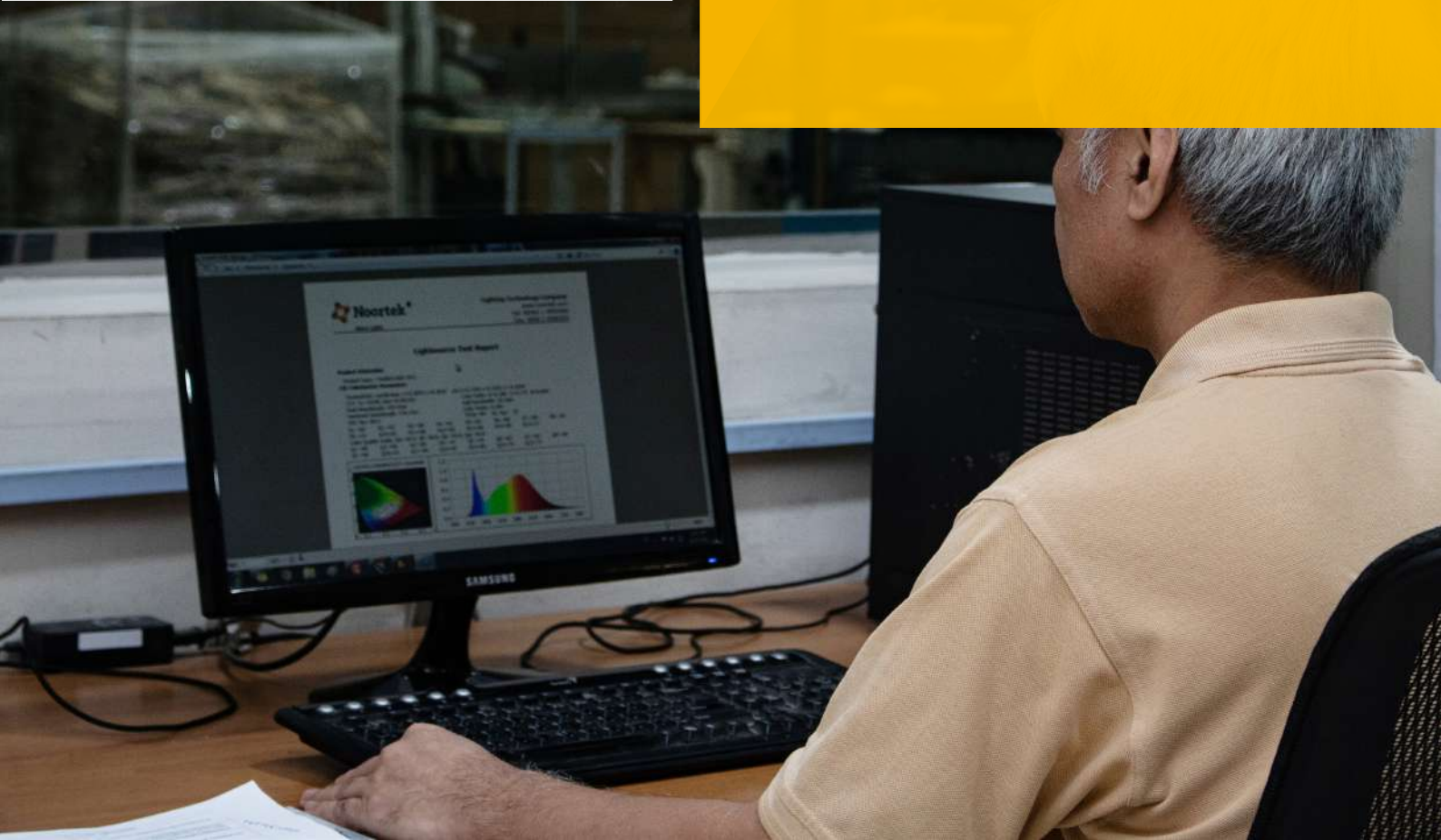
Every oven has four main zones of the thermal profile: preheat, soak, reflow, and cooling. The preheat and soak zones involve heating the component and then maintaining the temperature, respectively. The reflow zone ensures reflow for every soldered lead while the cooling portion lowers the temperature at a controlled rate for an even connection between components and PCBs.





INTEGRATED SPHERE TESTER

To identify the performance of LED by checking its photometric, colorimetric and electrical parameters.



INTEGRATED SPHERE TESTER

Integrating sphere spectroradiometer system

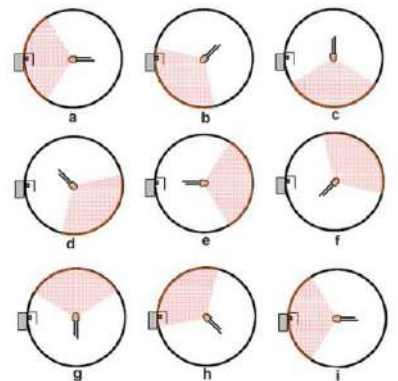
How to improve the accuracy of LED flux test in Sphere?

According to the particularity of LED luminous flux measurement, unique optimization is adopted in the design of the integrating sphere for LED measurement combined with the diffuse materials of high reflectivity, which makes the system stability and accuracy have great improvement. The experimental results show that the system stability and consistency is much higher than other common LED test system. It is the system which is really suitable for LED optical parameters measurement.

Introduction: Different with the traditional light source, the luminous flux measurement of LED light source has posed a big challenge to the equipment in testing the veracity in the process of using the integrating sphere to test luminous flux. On one hand, compared with the traditional light source, usually, LED has much stronger directivity, and will not shine evenly in whole space. This feature makes the distribution of LED direct light in the surface of the integrating sphere uneven. This uneven distribution will cause the direct light of different LED has different reflection features of the detector. Because the position of the detector mouth and the position of the baffle are fixed, the direct performance of various reflection distributions is signal fluctuation. In the ordinary testing system, there exist the differences in LED of different positive divergence angle, the same LED of different placed direction, the same direction with different position. Even the rated luminous flux is the same; the actual measured value is different. Based on the customer's verification result, the effect of LED placed direction of ordinary LED test system on the luminous flux measurement result is always more than 50 % (the difference of the maximum signal and minimum signal of the same LED measured in different direction). When measuring the different lighting angle of different LEDs, since the distribution difference of the surface of the inside integrating sphere makes the distribution of the direct reflection have different effect on the detector, it directly affects the difference of the accuracy of the measurement (as shown in picture 1). Picture 1: Different lighting angle has different effect on LED measurement. On the other hand, LED test system usually uses halogen tungsten lamp as the standard light source, compared with LED; the standard lamp used has big difference both in the appearance, the distribution feature of lighting and in the spectral characteristic. Therefore, the difference of the two should be revised by the absorption coefficient.



How to improve the accuracy of LED flux test in Sphere? How to improve the accuracy of LED flux test in Sphere?



improve-the-accuracy-of-the-led-flux-testing-in-the-sphere



QUALITY CAPABILITY ELECTRICAL TESTER

- a. Electrical Safety tester
- b. Digital power meter (AC & DC)
- c. Electronic Ballast tester
- d. LED power driver tester



QUALITY CAPABILITY

Digital Power Meter (AC & DC)

What is the difference between AC and DC power supply?

Image result for Digital Power Meter (AC & DC)

Direct current (DC) occurs when the current flows in one constant direction. It usually comes from batteries, solar cells, or from AC/DC converters. DC is the preferred type of power for electronic devices. Alternating current (AC) occurs when the electric current periodically inverts its direction.

a. Input AC/DC Voltage (Volt)

a. Input AC/DC Voltage (Volt)

What is AC DC input?

In a nutshell, an AC-DC power supply converts one type of electricity (AC - "alternating current" into DC - "direct current." Each day, most people will undoubtedly use electrical devices that require both types of electricity. For example, your car requires a 12v DC electricity supply to operate.

b. Input AC/DC Current (Ampere)

Are DC amps equal to AC amps?

DC Amps and AC amps are the exact same thing, they are the measurement of electrons past a given point, the difference is that the electrons of AC go back and forth (alternating) and DC go only in one direction (direct).

c. Output AC/DC Wattage (Watt)

What is AC output and DC output?

Direct current (DC) occurs when the current flows in one constant direction. It usually comes from batteries, solar cells, or from AC/DC converters. DC is the preferred type of power for electronic devices. Alternating current (AC) occurs when the electric current periodically inverts its direction.

d. Power Factor (> 0.9)

What does power factor 0.9 mean?

Image result for Power Factor (> 0.9)

Power factor (pf) is the difference between actual energy consumed (Watts) and the apparent power (Volts multiplied by Amps) in an AC circuit. It is calculated as a decimal or percentage between 0-1 pf and 0-100% i.e. 0.9 pF = 90%.

e. Frequency (Hz)

Frequency is the rate at which current changes direction per second. It is measured in hertz (Hz), an international unit of measure where 1 hertz is equal to 1 cycle per second. Hertz (Hz) = One hertz is equal to one cycle per second. Cycle = One complete wave of alternating current or voltage.



GONIOPHOTOMETER TESTER

Generate the lighting intensity
distribution curve for fixture



GONIOPHOTOMETER TESTER

What is a Goniophotometer?

A goniophotometer is a photometric device that is used to measure the perceived power of a light source at different angles. It is mostly used to test the luminous flux of directed light sources such as LED and automotive headlights.

It is based on the principle of a photometer with a revolving arm that is fitted with a circular mirror. Light is continuously fed to this mirror through different angles (as the arm rotates) which provides information about the luminous flux, intensity distribution, and efficiency of the source.

it can measure all types of lighting sources, LED, Plant Lighting or HID luminaires such as indoor and outdoor luminaires, roadway luminaires, street lamps, flood lights and other kinds of luminaires.

Measurement:

Luminous Intensity Data, Photometric Data, Luminous Intensity Distribution, Zonal Luminous Flux, Luminaries Efficiency, Luminance Distribution, Coefficient Of Utilization, Luminance Limitation Curves Glare, Maximum Ratio of Distance to Height, Equal Illuminance Diagrams, Curves of Luminaires VS Lighting Area, Isocandela Diagrams, Efficient Luminescence Angle, EEI, UGR, etc.

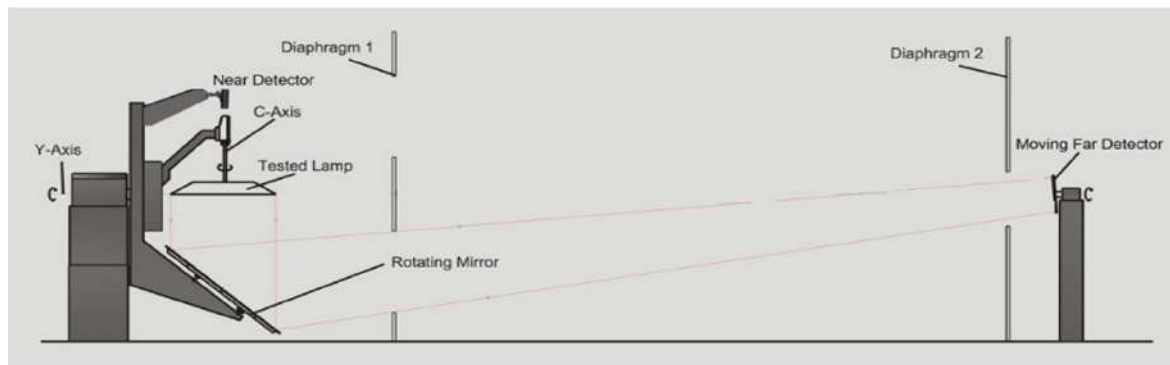


GONIOPHOTOMETER TESTER

What is a Goniophotometer?

Features:

- The near field detector moves together with the big mirror in a line. The big mirror and the far field detector move synchronously.
- The burning position of the luminaires will be kept without moving at all, and the detector will always sense the light directly from the luminaires.
- The rotary motor is from Japan MITSUBISHI MOTORS and the angle decode system is from Germany. They help the goniophotometer rotating smoothly with high accuracy. It is very stable when start and stop.
- The working principles are according to IESNA and CIE.
- The LSG-6000 completely meet the LM-80, LM-79, LM-75, GB, EN and CIE121-1996 standards.
- Special collimation device with cross laser line help you installing the position of the luminaires under test conveniently and accurately.



Motion Detector Goniophotometer Principle

GONIOPHOTOMETER TESTER

What is a Goniophotometer?

Test Method Type of Goniophotometers

The most critical factor that affects the quality of lighting is the luminous distribution performance of lamps. Using scientific testing methods and selecting the appropriate test instrument is the basis of obtaining accurate luminous distribution properties of luminaires. The test of luminaires' luminous distribution is an important part of luminaire design and lighting design for quality control. Especially with the development of new sources and new lighting technology, it presents new challenges for the test of luminaire luminous distribution.

Type C – LM-79 Moving Mirror Moving Detector Goniophotometer

The method of goniophotometer to test total luminous flux is spectrophotometry. The principle is to test the luminous intensity of light source at different directions (or the illumination at a given distance from the light source), and then to calculate the total luminous flux by the data of luminous intensity in many different directions. According to LM-79 Clause 9.3.1 standard, only type C goniophotometer with moving detector can be accepted. In this kind of goniophotometer, the photometer head is fixed, and is located in the optical axis line. During the measurement, the lamp just need to do spin motion, and the mirror rotates around the tested luminaire, and reflecting the optical signal into the detector. The tested light source and the normal of photo detector enter into a certain cone angle. Therefore, the movement airflow has less impact on the lamp temperature for this kind of goniophotometers.

During the test, the tested lamp will keep burning position and be fixed, near field detector move together with the big mirror in a line, and the far field detector will move with the big mirror synchronously. The detector will always sense the light directly from the luminaries. Its working principle is shown as Figure1.

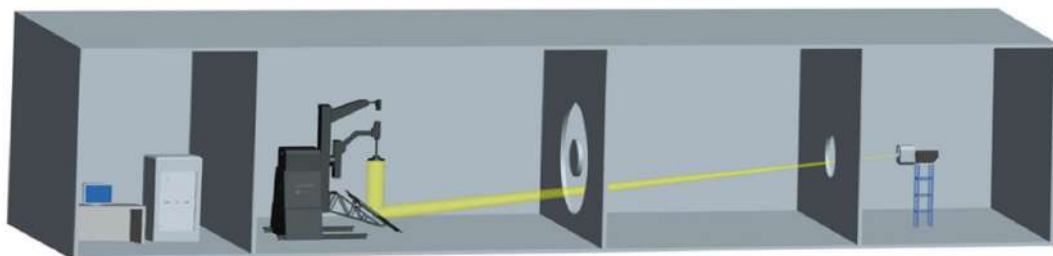
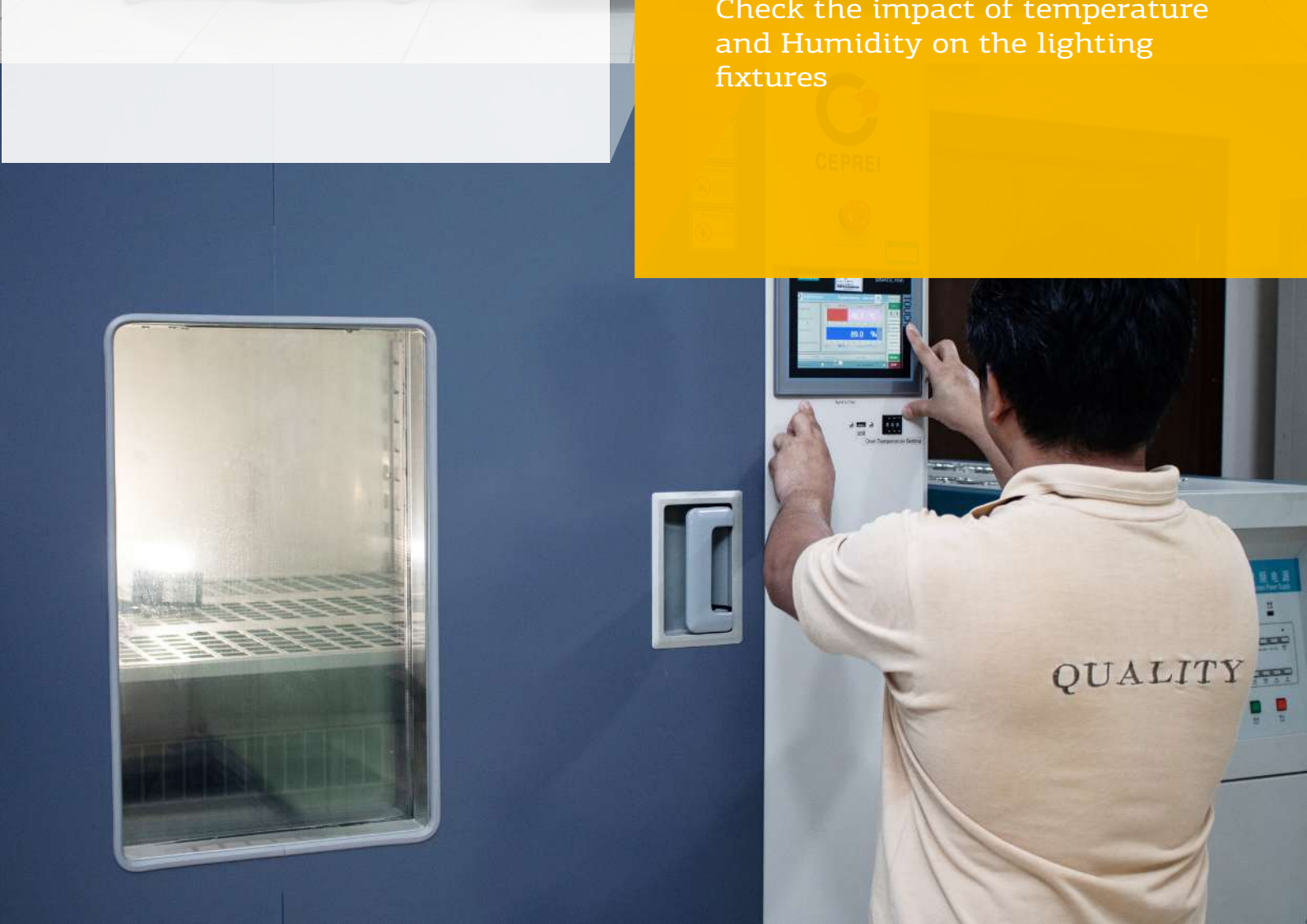


Figure1 : Moving Mirror Moving Detector Goniophotometer



HEAT CHAMBER TESTER

Check the impact of temperature and Humidity on the lighting fixtures



QUALITY

HEAT CHAMBER TESTER

Heat & Humidity Chamber

How are Temperature and Humidity Chambers Used?

Temperature and humidity test chambers are used to simulate real-world conditions for product testing. Temperature test chambers simulate mild to extreme hot and cold conditions with temperatures as low as -70°C up to $+180^{\circ}\text{C}$. Temperature may also be combined with humidity for temperature and humidity testing. Humidity test chambers simulate relative humidity conditions from low to high humidity up to 98% RH.

Temperature and humidity test chambers help evaluate a product's performance and how it will withstand these conditions in its end-use environment for reliability testing and evaluation. These chambers are also used to establish the operated specifications of a product.

Application:

For constant humidity heat test, humidity heat cyclic test, high low temperature test to assess and analyze the quality and reliability, such as plastic, electronics, food, garment, metal, chemistry and building material, etc.

LED QUALITY

An LED is an electronic semiconductor component that emits light when electrical current flows through it. The light's wavelength depends on the semiconductor material and its doping. The LED spectrum only emits light (electromagnetic radiation in the visible range) and not ultraviolet or infrared radiation.

Luminous flux and efficacy

Luminous flux (lm), power (W) and luminous efficacy (lm/W) are important key figures that describe the efficacy of LED luminaires. These values have to be shown by manufacturers for all luminaires. The luminous flux and luminous efficacy of the installed LED modules are higher than those of the luminaire and therefore cannot be compared with one another. The values are given as rated values. This takes account of the fact that individual measured values can fluctuate slightly during the production period of a luminaire type.

Service life

The service life describes the time until the average luminous flux of an LED luminaire has dropped to a fixed percentage of the initial luminous flux. B50 is a statistical value that is indicated together with the service life of LED luminaires. It approximately denotes an average value for the reduction in luminous flux and is derived in accordance with established forecasting methods.

Example: The information "L80 50 000 h" means that the luminous flux has fallen on average to 80% of the initial value after operating 50000 hours. It is common to indicate the "average rated service life".

Colour quality

During the production of LED chips, LEDs from various production batches can have different properties in terms of intensity, colour temperature, chromaticity coordinate or even forward bias.

The properties of each individual LED are measured after production and assigned a group with the same characteristics. These correspond to finely graded parameters, which are divided into so-called "bins". By using certain binning groups, the colour and brightness tolerances are reduced to a minimum so that illuminated areas have a uniform appearance. This is particularly important in applications with the greatest white light quality, such as museums. The concept of MacAdams ellipses gives the user information about the extent to which the scattering of individual LED modules differ in colour perception. In theory, 1 MacAdams is the term applied as soon as a visual difference in colour perception is visible. The colour difference between wide-beam luminaires with a high luminous flux, which can often be found in industry applications, is rated as high quality with 3 MacAdams ellipses.

LED QUALITY

Colour temperature

Colour temperature (also referred to as light colour) describes the colour appearance of light and is given in Kelvin (K).

Ww (warm white) up to	3300 K
Nw (neutral white)	3300-5300 K
Dw (daylight white) from	5300 K

Luminaires with fixed colour temperatures

stableWhite

- Set colour temperature with a certain tolerance range
- Usual for industrial applications: 4000 K, 6500 K
- Constant colour temperature when dimming/brightening

Luminaires with variable colour temperatures

Balanced tunableWhite

- Manual control of two colour temperatures
- Colour temperature between 2700 K and 6500 K
- Brightness and/or luminous flux dependant on light colour control
- Controlled via 2 DALI device type 6 or two separate channels - Greater tolerance in terms of MacAdams levels

Calibrated tunableWhite

- Control of preset colour temperatures close to the Planck curve
- Colour temperature between 3000 K and 6000 K
- Constant luminous flux over the entire colour temperature range
- Control of two channels using DALI Device Type 8
- MacAdams 4

Expert tunableWhite

- Colour temperature control along the Planck curve - Colour temperature between 2700 K and 6500 K - Very constant luminous flux over the entire colour temperature range
- Control of several channels using DALI Device Type 8 - MacAdams < 4, Ra > 90

Both CRAFT and TECTON are available on request as Balanced tunableWhite.

