

oktalite



SUN.  
LIGHT.  
QUALITY.





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LIGHT.  
QUALITY.



## ONE STEP AHEAD

### **Inspired by the sun: lighting at the next level.**

Lighting, as natural and atmospheric as the afternoon sun on a clear spring day, at the same time with intense and brilliant colour:

this performance is our inspiration for the optimization of holistic lighting for retail. At the same time, we constantly adapt the parameters of our lighting to the requirements of the market and the wishes of our customers. How can the light on the goods gain in authentic colour brilliance and colour rendering?

This question drove us.



MORE  
COLOUR –  
MORE  
WHITE



## LEDS ONE STEP AHEAD

With the development of the two natural light colours BRILLIANT COLOUR, EFFICIENT WHITE and BRILLIANT FOOD we have succeeded in something special. Our quality lighting for the areas of fashion and food redefines brilliance, colour variety and atmospheric illumination. With it we bring an optimized quality of lighting and goods illumination into retail that comes a step closer to sunlight. Crisper, more natural and with truer colours. Artificial light has never been so sensual.

## BRILLIANT COLOUR

With BRILLIANT COLOUR we provide retail with an LED module with outstanding colour rendition as well as colour saturation for intense and brilliant colours. Experience fashion and goods in new depth of field! For more emotionality in retail.

- ✓ **Intense, brilliant colours**  
With very good white rendition
- ✓ **Excellent colour saturation**  
For best colour representation
- ✓ **Depth of field**  
Detailed material presentation
- ✓ **Light colour temperature 3000 kelvin (BBBL)**  
Perfect colours for all goods segments



## EFFICIENT WHITE

With EFFICIENT WHITE we provide you with an LED module with outstanding white presentation and high efficiency with very good colour rendition. Feel the new freshness and clarity in the store and the increased attractiveness of your range.

- ✓ **Clear white**  
With very good colour rendering
- ✓ **Extreme efficiency**  
With up to 116 lumens per watt\*  
\*measured in the luminaire AGIRA PLUS, 3000 lm, Medium Flood
- ✓ **High colour saturation**  
For convincing colour representation
- ✓ **Light colour temperature 3000 kelvin (BBBL)**  
Perfect colours for all goods segments

## BRILLIANT FOOD

With BRILLIANT FOOD we supply you with an LED module that is adapted optimally to the fresh food area: our sunny natural light ensures a visually more intense presentation of fruit & vegetables, bakery products and cheese, protects the goods thanks to lower illuminance and also really saves energy! Fancy any MORE supermarket feeling? Our Lighting Design can dish up defined or flexible solutions for you on request.

- ✓ **Honest lighting**  
Clear, differentiated white shades
- ✓ **Sunny, energy-saving atmosphere**  
More intense, bright goods presentation with approx. 20 % less energy
- ✓ **Rich colours**  
Thanks to high colour saturation
- ✓ **Gentle lighting**  
Longer freshness by illuminance reduced by up to 20 % \*

\*Oktalite Inhouse test 2019



# 99 COLOURS

## 99 COLOURS

### ASSESSMENT OF THE COLOUR RENDITION.

99 colours instead of 8. Here more is simply MORE. More colour. Best white. We have optimized our assessment procedure for lighting quality: besides the CRI, we use the TM-30 method. It was developed in 2015 by the Illumination Engineering Society of America (IES) as an assessment

method for the color rendering of LEDs. TM-30 describes the colour rendering of an LED using the indicators colour fidelity and colour saturation with 99 test colours. Many of these colours are saturated.

CRI according to CIE 13.3

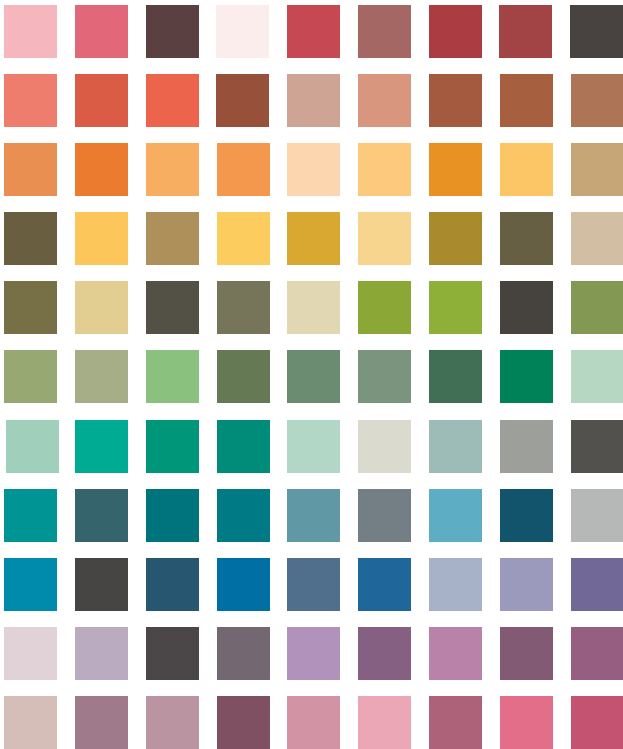


8 test colours for R<sub>a</sub>



14 test colours for R<sub>e</sub>

TM 30-15 according IES



99 test colours for R<sub>f</sub> and R<sub>g</sub>

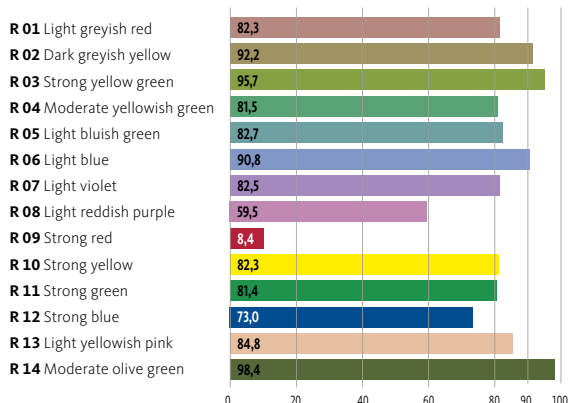


# CRI – COLOUR RENDITION

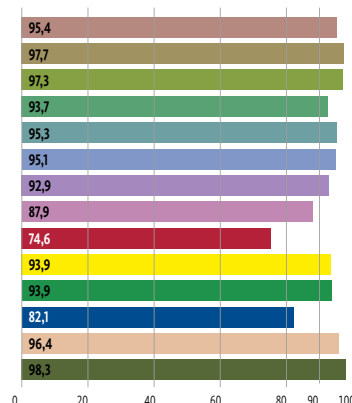
## CRI IS NOT ALWAYS THE SAME AS CRI.

The colour rendering index CRI comprises, according to DIN 6169, only eight specified test colours consisting of pastel shades between antique rose and lilac. This so-called  $R_a$  was later supplemented in order, for example, to be able to better assess a saturated colours. The ideal value for the most natural colour rendering is in the case

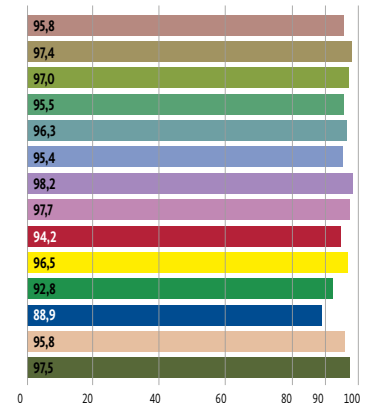
of the CRI generally 100. Already on the basis of the two indices  $R_a$  and  $R_e$  it becomes clear: equal or similar CRI values do not automatically mean that the colour rendering of a light source is equal or similar. It is only the graph that makes the differences clear in detail.



Okalite Standard LED 3000 K  
 $R_a$  83 ( 8 test colours)  
 $R_e$  78 (14 test colours)



Okalite EFFICIENT WHITE  
 $R_a$  94 (8 test colours)  
 $R_e$  93 (14 test colours)



Okalite BRILLIANT COLOUR  
 $R_a$  97 ( 8 test colours)  
 $R_e$  96 (14 test colours)



TRUE  
COLOUR  
3000 K



# TRUE COLOUR – FIDELITY INDEX TM-30-15

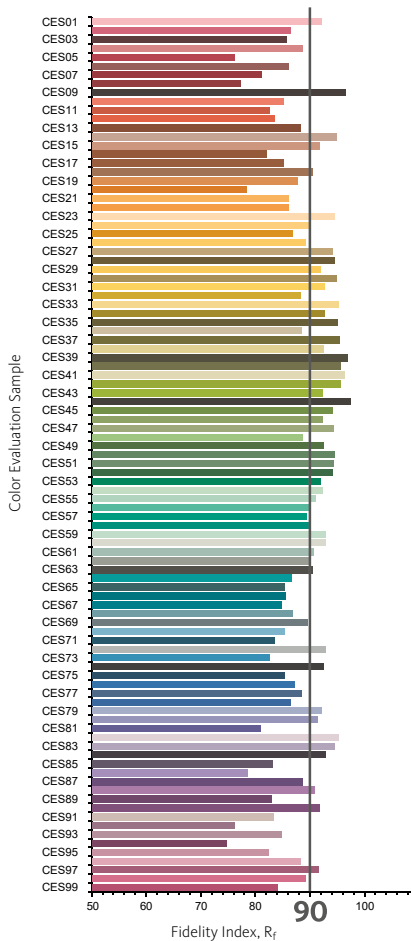
## THE FIDELITY INDEX.

The Fidelity Index ( $R_f$ ) provides information on the colour accuracy of the light spectrum that is emitted and rendered by a light source. This colour fidelity is determined with 99 test colours (CES\* colours) with a possible

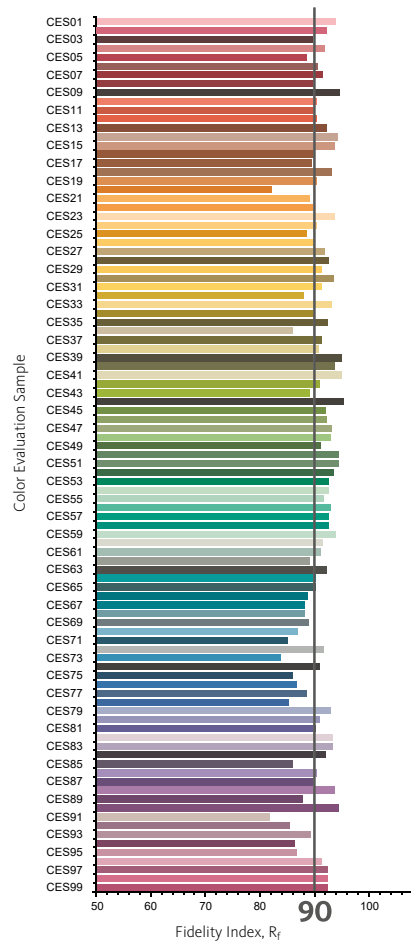
maximum value of 100. As a rule, the fidelity value is lower than the classic CRI since a calculated mean value is formed from 99 colours and not only from 8 or 14.

\* CES = Colour Evaluation Sample

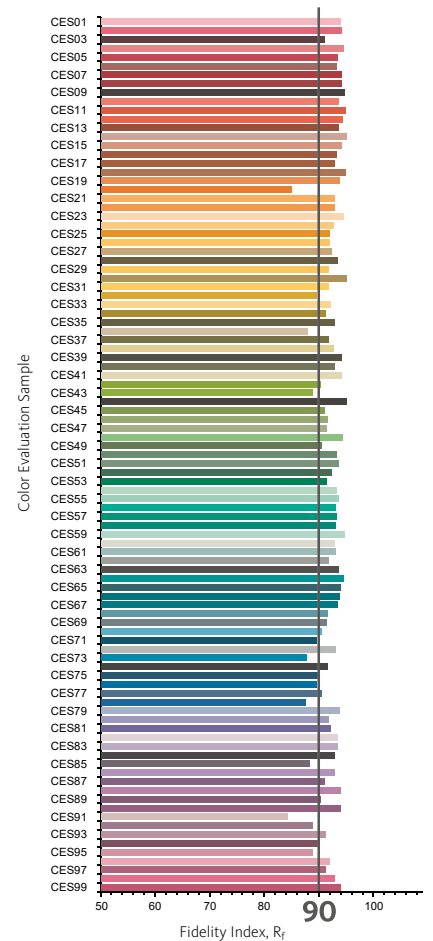
Oktalite Standard LED 3000K  
 $R_f = 84$



Oktalite EFFICIENT WHITE  
 $R_f = 91$



Oktalite BRILLIANT COLOUR  
 $R_f = 95$







## COLOUR SATURATION TM-30-15

### THE GAMUT INDEX.

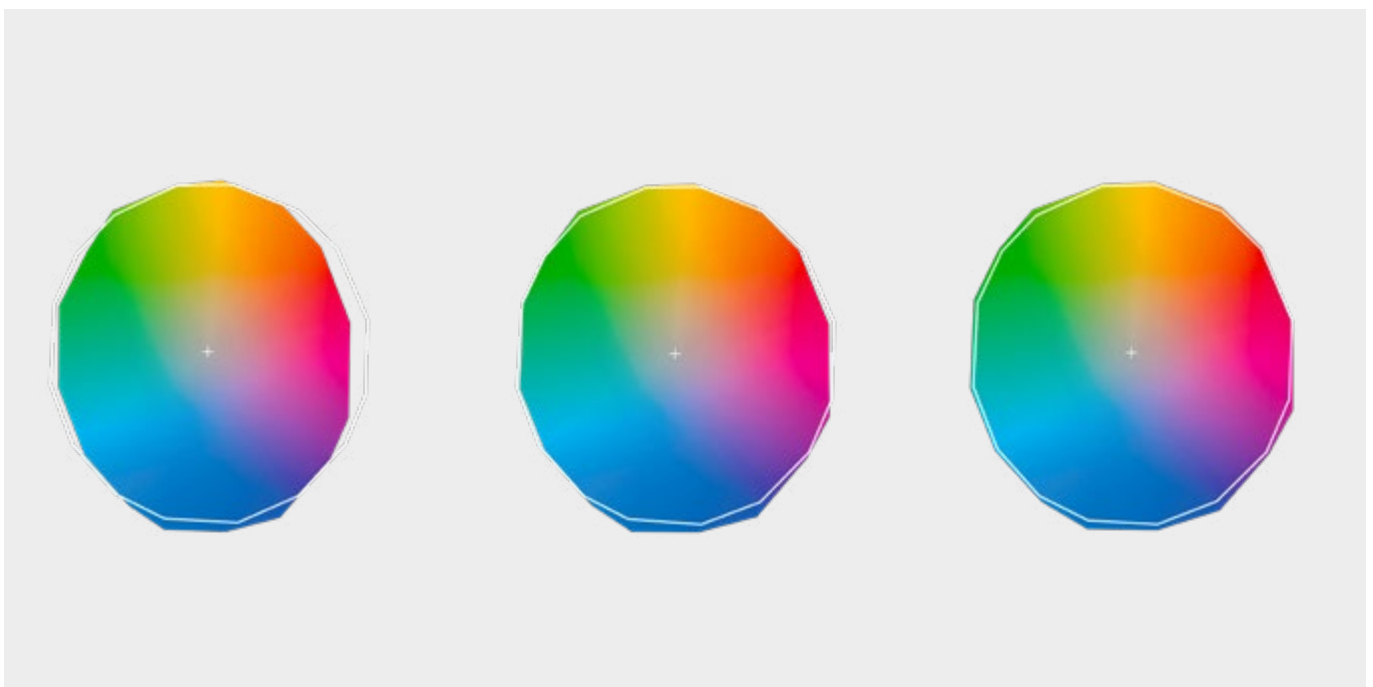
The Gamut Index ( $R_g$ ) describes the colour saturation of an LED. The colour saturation of a natural light source such as the sun serves as a reference for the assessment of the artificial light source. An LED can, in this com-

parison, show a saturation of more than 100. The Gamut Index ( $R_g$ ) alone cannot provide a statement about the colour saturation. Only in combination with the graphic representation is an objective assessment possible here.

Oktalite Standard LED 3000 K  
 $R_g = 96$

Oktalite EFFICIENT WHITE  
 $R_g = 102$

Oktalite BRILLIANT COLOUR  
 $R_g = 104$



# TRUE COLOUR 2700 K



## TRUE COLOUR – FIDELITY INDEX TM-30-15

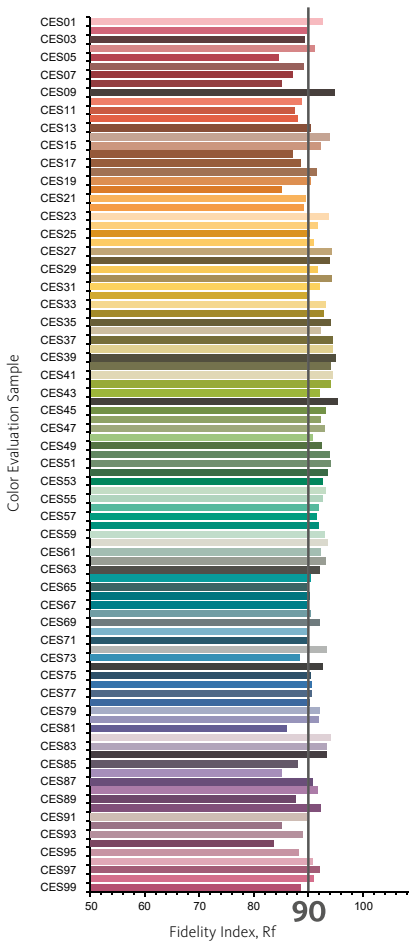
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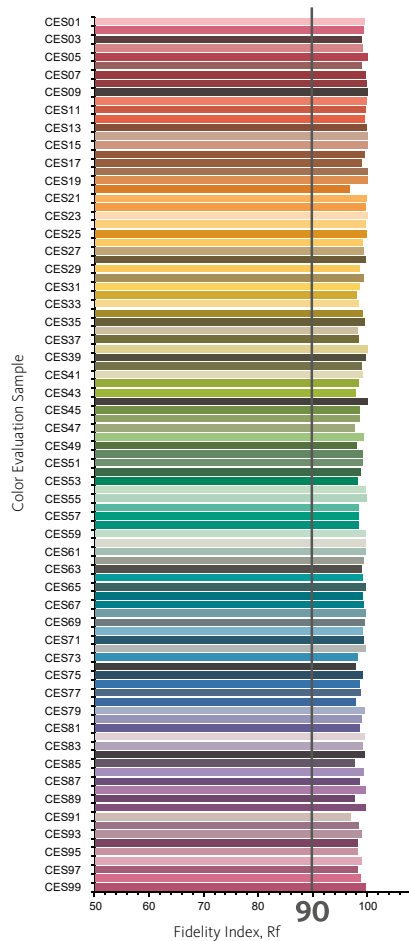
maximum value of 100. As a rule, the fidelity value is lower than the classic CRI since a calculated mean value is formed from 99 colours and not only from 8 or 14.

\* CES = Colour Evaluation Sample

Oktalite Standard LED 2700 K  
 $R_f = 83$



Oktalite BRILLIANT FOOD  
 $R_f = 96$





# COLOUR SATURATION TM-30-15

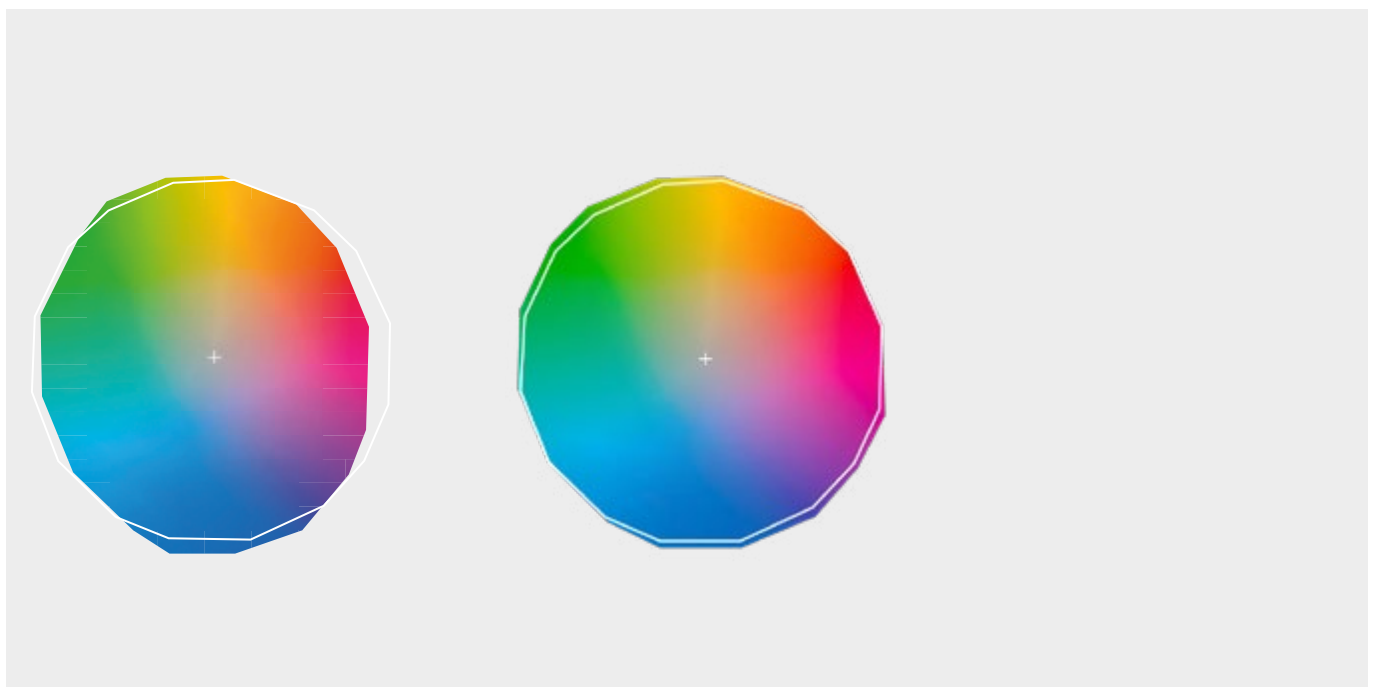
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Oktalite Standard LED 2700 K  
 $R_g = 96$

Oktalite Brilliant Food  
 $R_g = 103$





TAKE ONE  
OF FIVE



## 3D-FACETTED REFLECTOR

### **MORE BRILLIANCE ON THE GOODS.**

Thanks to patented reflector technology, we use light in its spectrum in a new quality. In the interplay with our natural light colours, an excellent mixing of light and the new brilliance in the lighting at the POS are obtained.

- ✔ Homogeneous light mixing, already in the reflector system
- ✔ Patented 3D reflector technology
- ✔ Highly reflective surface
- ✔ Same design principle for all beam angles
- ✔ Complex light guiding structure specially developed for LED modules (COB)

## CLEAR LIGHT IMAGING

### **OPTIMISED GOODS ACCENTUATION FOR THE POS.**

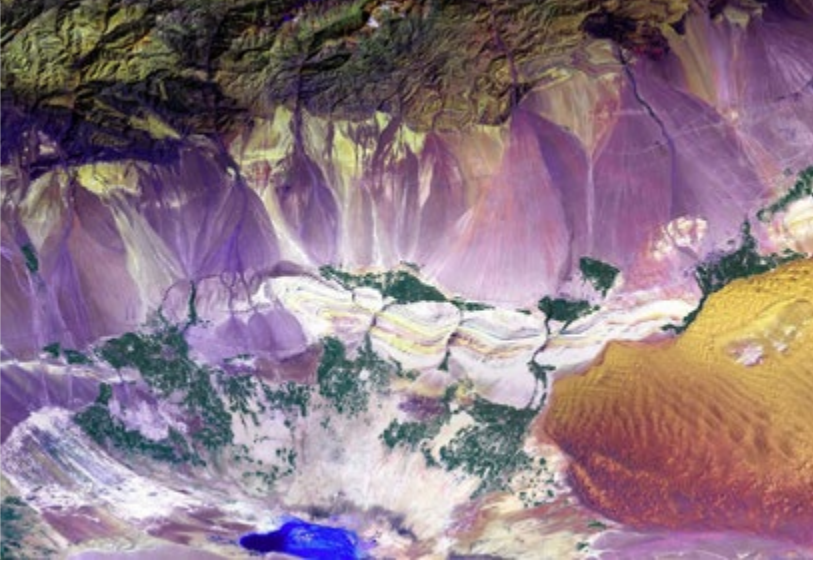
- ✔ Precise projection of the colour temperatures in all ranges
- ✔ Directed light steering
- ✔ Optimum visual comfort

## PATENT ON THAT!

### **OUR NEW 3D-FACETTED REFLECTORS.**

That is new: in the case of an LED luminaire the lamp does not project into the reflector like a rod, but is located flat on a circuit board at the light emission aperture of the reflector. The light shines only in one direction upwards instead of all around. We are the first to take that into account. Our approach is innovative: we have looked at the LED from the viewpoint of the reflector with the question: how can I guide the light emitted in a perfect way?





## THE EFFECT

### **EXCELLENTLY CLEAR.**

Creating a clear core light with only little scattered light – that is always our aim. The art of the generation of quality light consists in controlling and combining these two different kinds of light in keeping with requirements.

And that is exactly what we have succeeded in with our new reflectors. With this innovation we are moving ahead in the market. And we provide you with a significant plus point in lighting.

## THE FINE STRUCTURE

### **ESPECIALLY FOR THE MODERN LED.**

We have developed our reflector precisely for what is special about the LED. And that is exactly how our facets are made: close to the LED they have a ring structure, further away they show a grooved structure. In the middle of the reflector there is a progression from a ring to a groove structure: in that way we achieve a better and, above all, controlled guidance of the light onto goods, products and surfaces.

## TAKE ONE OF FIVE

### **THE CORRECT BEAM ANGLE FOR CUSTOMIZED REQUIREMENTS.**

Very Wide Flood  
60°

Wide Flood  
48°

Flood  
36°

Medium Flood  
24°

Spot  
12°





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## HIGH COLOUR SATURATION – UNNATURAL EFFECT?

### **THE PLUS IN COLOUR PERFORMANCE.**

The LED module BRILLIANT COLOUR shows in all colour ranges not only a homogeneous colour saturation but achieves a higher saturation in all colours. Especially in the case of red shades, BRILLIANT COLOUR achieves best results: it is this extra colour performance of the LED module that creates that radiant brilliance on the illuminated goods, that people experience as attractive and at the same time as natural.

## GOOD COLOUR RENDITION VS. SERVICE LIFE

### **OUR NEW LEDS: SIMPLY BETTER ALL ROUND.**

The service life of an LED depends on factors like a good driver and the thermal management. The improved colour rendition of the new Oktalite LEDs has no effects on their service life.

## GOOD COLOUR RENDITION VS. ENERGY EFFICIENCY

### **SCENE-SETTING AND THE EXPERIENCE COUNT.**

The energy efficiency of modern LEDs is largely exhausted. The staging of the goods and hence the optimization of the colour rendition is focused on today. The buying experience that appeals to the senses strengthens brick and mortar retail stores as compared to online retail trading.



# oktalite



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