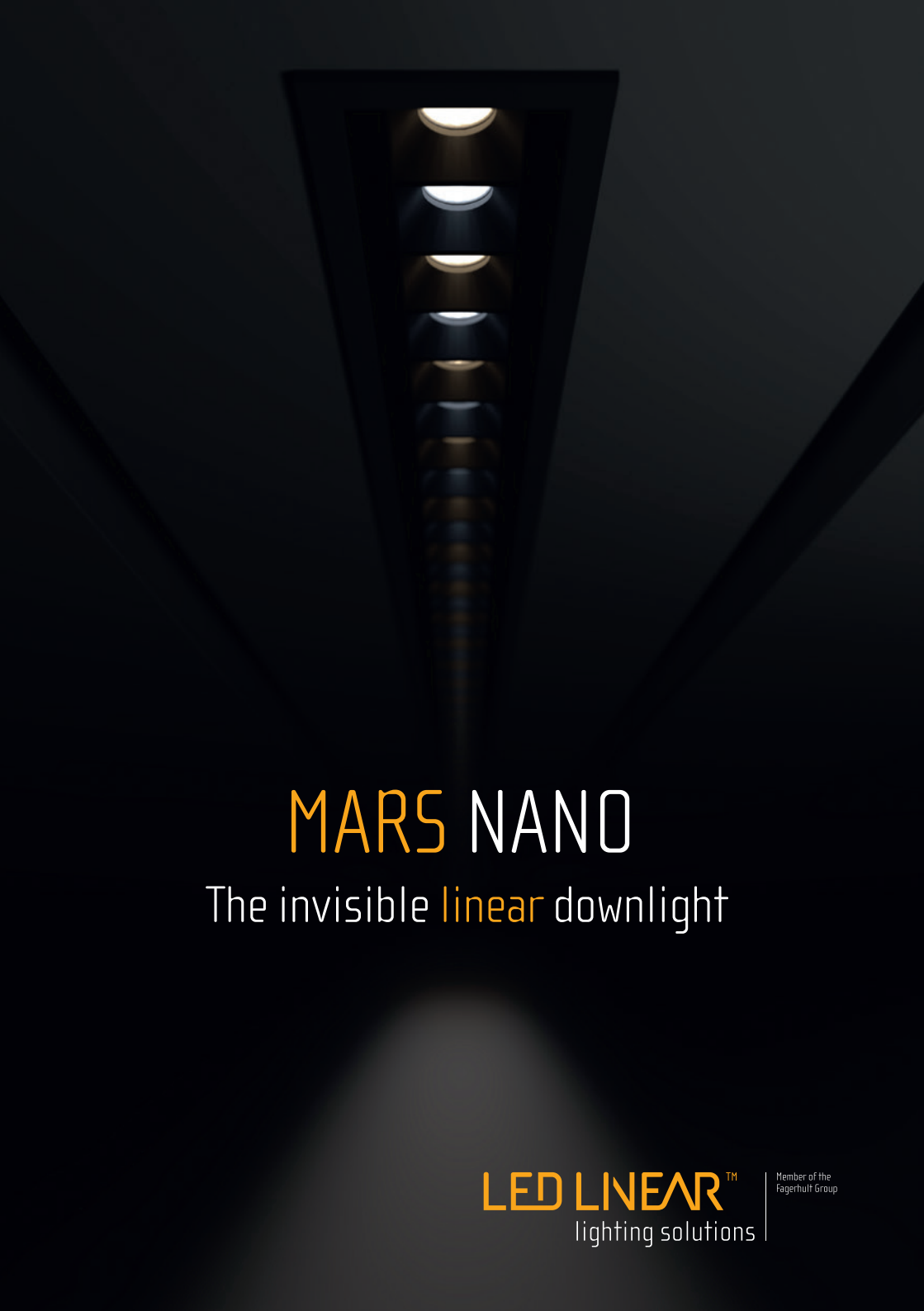
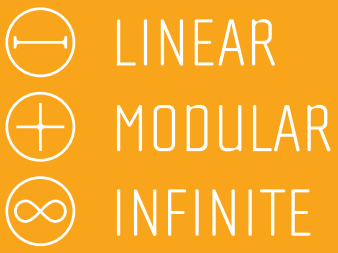


MARS NANO

The invisible linear downlight

LED LINEAR™
lighting solutions

Member of the
Fagerhult Group


LINEAR
MODULAR
INFINITE

MARS NANO

INVISIBLY BRIGHT!

- For decades, the common perception of a downlight has remained a single light source confined in a round or square form for accent or general lighting applications. LED Linear™ decided to introduce this concept into linear lighting with precise beam spread while keeping the source invisible.

- The NanoRay technology came to light adding flexibility and accuracy in beam shaping while offering a sleek finish by hiding LEDs from direct view of the LEDs.

- The LED Linear™ Tj Away® technology made it possible to deliver high lumen output within a slim fixture with optimized heat management.

- The result is MARS NANO, an invisible linear downlight scalable up to 4 m (13') with small form factor to minimize ceiling space and an UGR < 13 making it invisible. Moreover, its optical and finish modularity makes it an all-rounder for all common downlight application.

KEY FEATURES

INVISIBLY LIGHT!

MARS NANO offers great light and visual comfort while keeping the actual light source out of sight. The elegant louver minimizes the glare in order to set the accent on the illuminated scene. The light is aimed where desired setting a lighting environment which appears lighting-fixture-free.

Targeted invisible light for museums and art galleries

KEY FEATURES

MODULAR

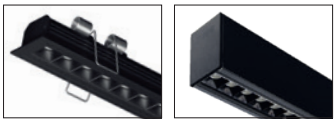
The luminaire is freely scalable up to 4 m (13') with a lumen output ranging from 500 lm/m to 6,816 lm/m (150 lm/ft to 2,078 lm/ft) and a wide range of color temperatures. This allows total freedom of creativity for lighting designers and architects.

	Voltage (V)	CRI	Lumen/W (lm/W)	Watt/m (W/m) Watt/ft (W/ft)	Lumen/m (lm/m)[A] Lumen/ft (lm/ft)[A]	max. serial run length (m / ft)
MARS NANO CV White IP40 (Recessed, Ceiling, Pendant)						
LD5	24	95	104	5 / 1.5	500 / 150	4 / 13.1
LD10	24	95	98	10 / 3	940 / 290	4 / 13.1
LD15	24	95	105	15 / 4.6	1,570 / 480	4 / 13.1
LD25	24	95	104	25 / 7.6	2,600 / 790	3 / 9.8
LD40	24	95	90	40 / 12.2	3,590 / 1,090	2 / 6.6
MARS NANO CV IQ White IP40 (Recessed, Ceiling, Pendant)						
LD40	24	85	110	40 / 12.2	3,630 / 1,100	3 / 9.8
MARS NANO CC LD White IP40 (Recessed, Ceiling, Pendant)						
LD60 CC	CC	95	113	60 / 18.3	6,816 / 2,078	0.8 / 2.6

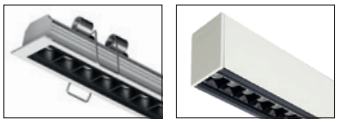
[A] **White** @W850. At warmer light colors the luminous flux is reduced.
IQ White When all channels/colors are at full power. Using single channels/colors reduces the luminous flux.

Colors

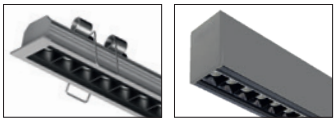
Black profile with black louver reduction



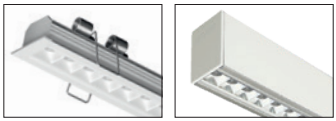
White profile with black louver reduction



Silver profile with black louver reduction



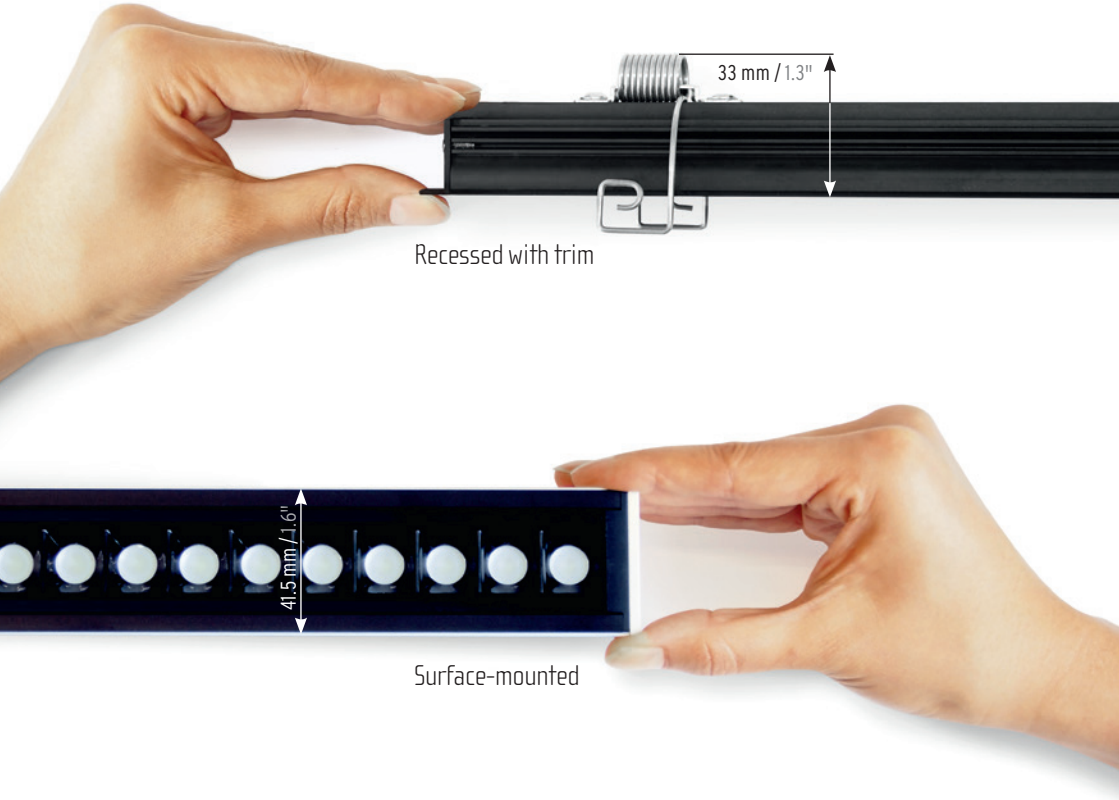
White profile with white louver reduction



KEY FEATURES

SMALL FORM FACTOR

The small form factor of MARS NANO recessed in combination with pre-installed mounting spring enables discrete integration in false ceiling with limited headroom. The ceiling and pendant variants benefit from LED Linear™ LEDs Click technology for an intuitive mounting. Overall MARS NANO has installation options to suit any building setup.



Recessed with trim

Surface-mounted

TECHNICAL DATA

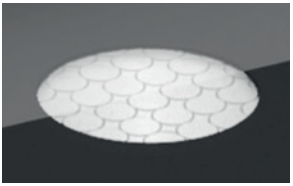
- Lumen output ranging from 630 lm/m – 6,816 lm/m (183 lm/ft – 2,077 lm/ft)
- Color temperatures available in 2,000 K – 5,000 K
- Efficiency up to 134 lm/W
- UGR < 13
- Optics: 15°, 25°, 40°, 65°
- CRI: Up to 95
- Lifetime 60,000 h L80/B10
- IP40
- Available in White & Tunable White

This list of figures reflects LED Linear's core design value: Modularity. MARS NANO offers a high flexibility to lighting designers and architects, making its implementation possible in any architectural concept.

OPTICAL AND THERMAL EXCELLENCE

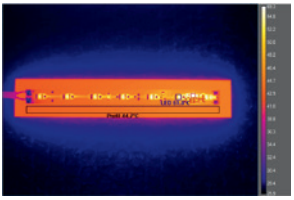
NanoRay
LED LINEAR™ TECHNOLOGY

In order to guarantee homogenous light and limited color over angle, the LED Linear™ NanoRay technology was developed. It enables the desgin of complex optical system with minimal dimensions achieving results only previously possible using large optics. These nanoscale lenses provide an accurate beam control and no direct view to the LEDs.



Tj Away®
LED LINEAR™ TECHNOLOGY

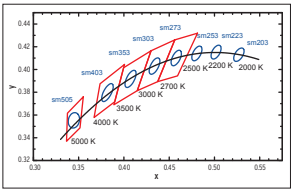
MARS NANO embeds the LED Linear™ Tj Away® technology which provides optimal heat dissipation of the LED to the housing profile. This enables the miniaturization of the luminaire's footprint while ensuring an extended lifetime compared to conventional LED technologies.



Experimental setup: 40 W/m (12 W/ft) LED tape with thin flexible PCB mounted on flat aluminum plate LED temperature does not exceed 60°C (140°F).

ONE BIN ONLY

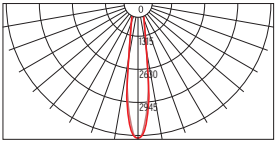
Color consistency plays a key role as much as homogeneity in any linear lighting application. To ensure an outstanding quality of the light, LED Linear™ introduced One Bin Only which ensures that all LEDs used in our luminaires are picked from one bin centered on the target CCT within a 3 step MacAdams Ellipse. They are used to determine visual color deviations and indicate differences in light color of individual LEDs. Three step MacAdam ensures a color variation unnoticeable by the human eye and therefore an optimal lighting quality.

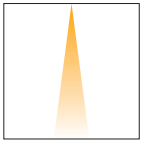


Black Body Curve
LED Linear™ Binning
ANSI Binning

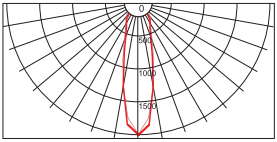
OPTICS

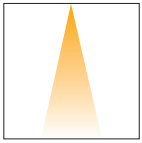
15°



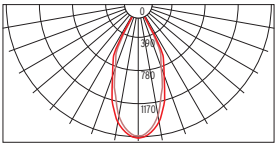


25°

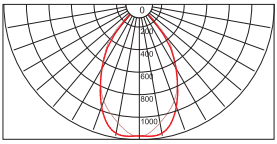




40°

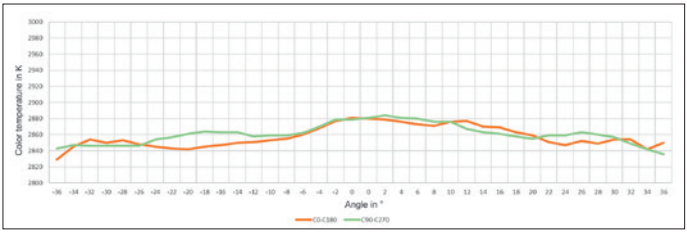


65°



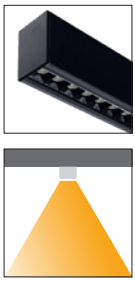
COLOR OVER ANGLE

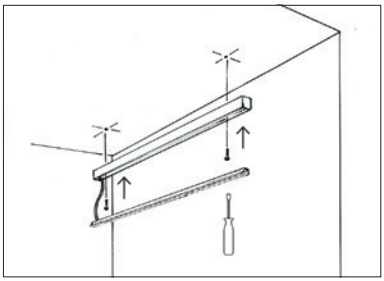
To keep the lighting scene as homogenous and consistent as possible, it is mandatory to keep a minimal change of Correlated Color Temperature (CCT) over all lines of sight. The NanoRay technology enables an accurate control of the light in order to minimize changes of CCT over the entire light scene. As shown in the graph, the consistency of light color is remarkably high over the entire beam spread.



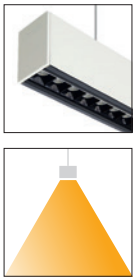
MOUNTING OPTIONS

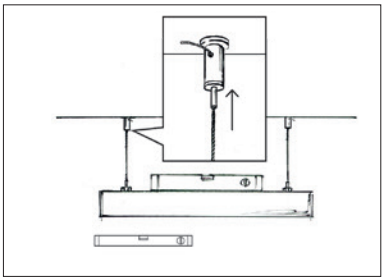
Surface-mounted



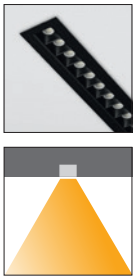


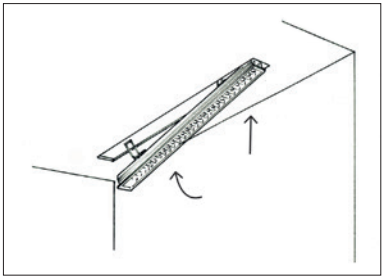
Pendant





Recessed

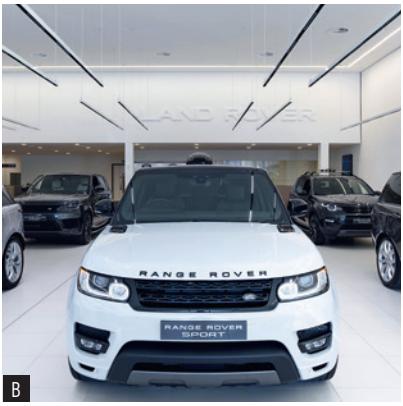




REFERENCES

A

Illumination over the entire surface in offices and conference rooms



B

Precise and invisible light for showrooms and cinemas

A

Accurate and absolutely homogeneous general lighting

Targeted illumination for museums and art galleries

A | Photo: toneteam

B | Photo: Jonathan Taylor, Cloud9 Photos

LED LINEAR™
lighting solutions

Member of the
Fagerhult Group

reddot award 2017
winner

For further information please visit our website **www.led-linear.com**