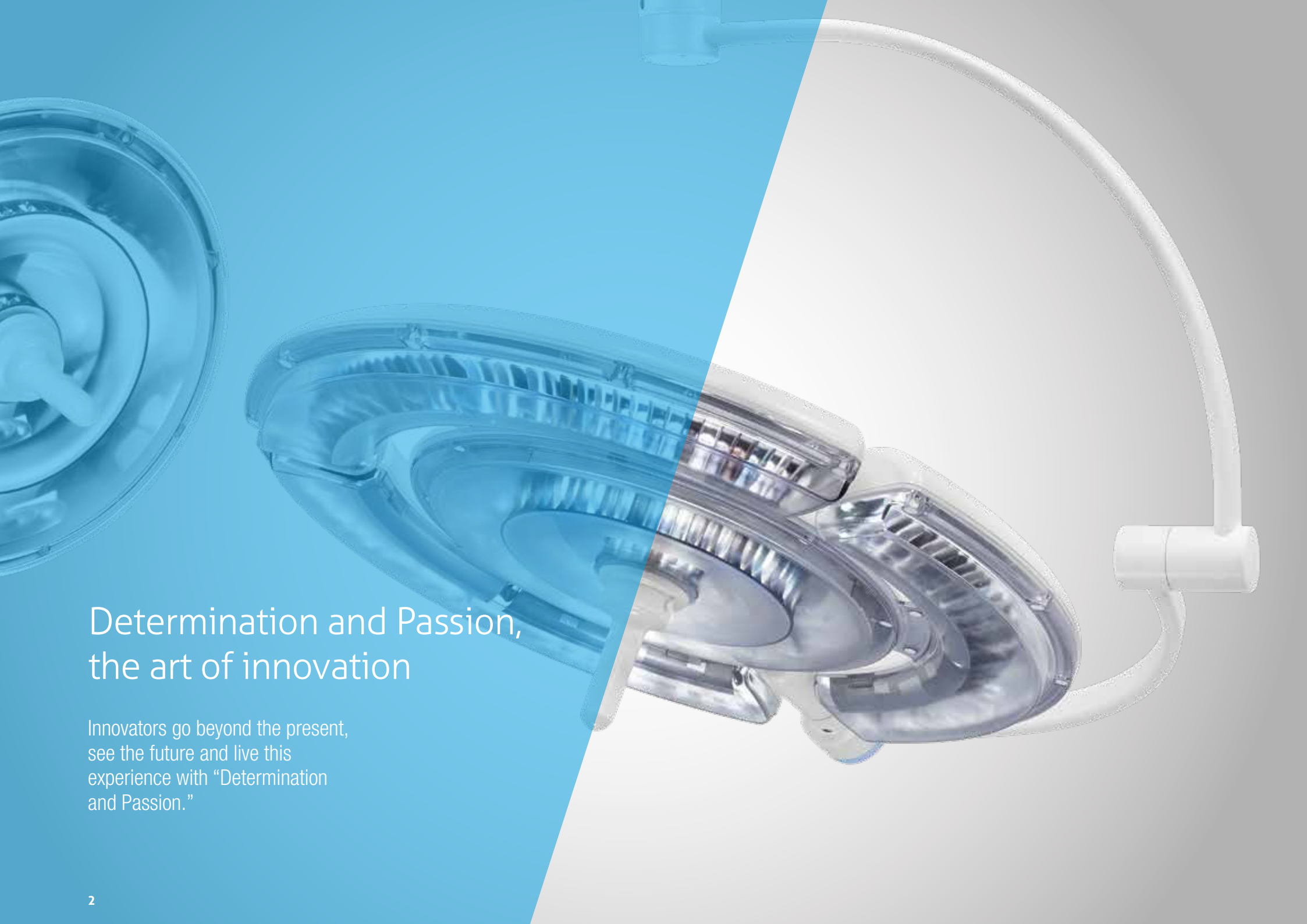
# DETERMINATION AND PASSION, THE ART OF INNOVATION

520

860

UNICA™

RIMSA



# Determination and Passion, the art of innovation

Innovators go beyond the present, see the future and live this experience with “Determination and Passion.”

# Having now reached its eightieth anniversary, RIMSA again asserts its uniqueness

RIMSA, backed by a world record - the design of the first LED surgical light (9/2002 patent), has again become a trailblazer with **UNICA**, a lamp designed to enhance operating theatre lighting.
The concepts "White Light without colour shadows" and "Indirect Light", already established in the previous series, are now enhanced by **innovative 2R, double reflection,** technology which permits light propagation without glare.

**Only those with a great history dare make major changes**.

1936-2016
80
YEARS

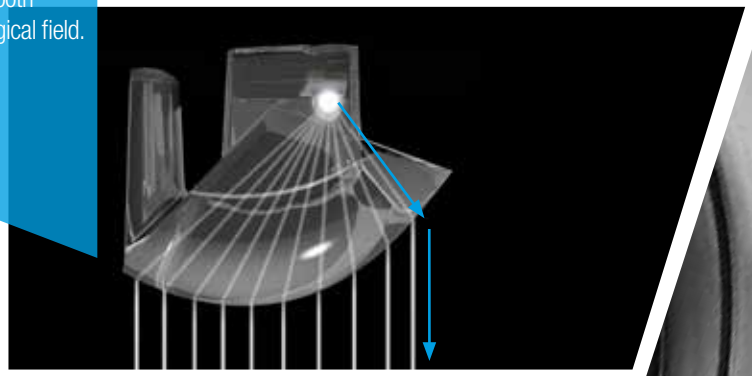
# 2R double reflection system

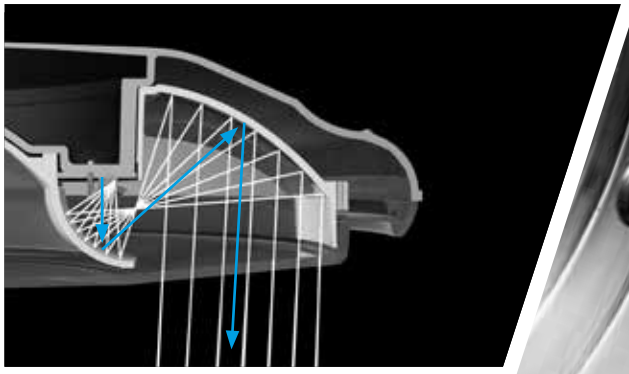
The 2R system eliminates annoying glare, also side glare, in case of inadvertent vision of the light source by the operating theatre staff.

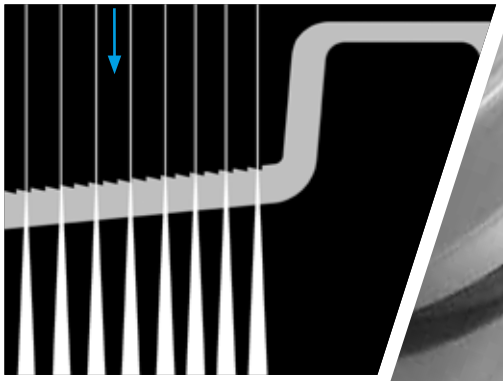
Indirect light, the cornerstone of the PENTALED series, is also applied to “2R”, double reflection optical collimation technology. The LED light beams are conveyed into an aspherical lens and projected on the first elliptical segmented mirror, which in turn reflect them onto the second mirror with smooth surface and convey them into the surgical field. The latter reflection passes through the screen made with a roughness index such as to stratify and collimate the light beam. The large light emission area and the circular shape of the interruption-free mirrors produce a shadowless effect.
The two continuous double-reflection circular modules light with different focal distances to optimize the shadowless effect, ensuring an ample light depth and maintaining constant lighting.

2R DOUBLE REFLECTION = ZERO GLARE

The LED light beams are conveyed into an aspherical lens and projected on the first elliptical segmented mirror, which in turn reflect them onto the second mirror with smooth surface and convey them into the surgical field.







**2R Optical collimation lens system with double reflection:**

- White and uniform light across the entire lit surface even in the case of objects interposed between light source and lit point
- Thin and easy-to-adjust reflector
- Glare-free light
- Excellent shadowless effect thanks to the large light emission surface and uninterrupted round shape.
- The shadowless effect is present throughout the entire working distance
- Excellent light distribution across the entire lit area
- Electronic variation of the lit field diameter in two positions
- Collimated light beams for a working distance of 70 to 160mm
- High colour rendering index (CRI) 96
- 7 colour temperatures
- Optimization of the LED thermal management to avoid illuminance reductions during surgery
- Anti-glare light, PMMA optical lenses and high-reflection specular mirrors
- Progressive visual adaptation to avoid glare from the central to the peripheral areas.
- Reduced consumption, high efficiency

UNICA 860

UNICA 520

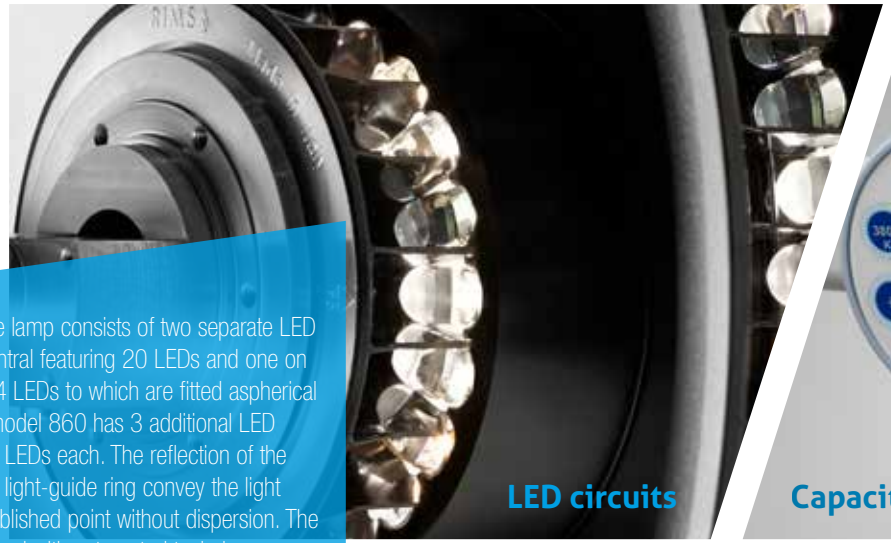
# GLARE FREE

The latter reflection passes through the screen made with a roughness index such as to stratify and collimate the light beam.


The cupola is thin and perfectly balanced to ensure easy and stable adjustment and easy cleaning.

UNICA
RIMSA

The electronics controls the power functions, light adjustment, colour temperature change, change of light diameter in two widths, endoscopy light and courtesy light. Optionally, it is possible to connect up to the integrated management systems of the operating theatre and video signals can be transmitted via Wi-Fi.





The heart of the lamp consists of two separate LED circuits, one central featuring 20 LEDs and one on the side with 64 LEDs to which are fitted aspherical lenses. Lamp model 860 has 3 additional LED circuits with 40 LEDs each. The reflection of the mirrors and the light-guide ring convey the light flow to the established point without dispersion. The LEDs are soldered with automated technique on aluminium circuits to optimize thermal management and ensure luminous efficacy without the need for additional electronic functions.

**UNICA** is the upshot of the engineering imagination of a close-knit team of physicists, engineers and surgeons with the aim of shedding light on the surgical field and suppressing all forms of direct and indirect glare.

The sterilizable handle is equipped with a capacitive system for light adjustment, operated by the surgeon in the sterile area. A longitudinal guide on the handle helps the surgeon to identify sensor allocation without losing sight of the work area.

## Capacitive control and longitudinal guide

## Ergonomic grip

In the aluminium cupola and in the protective screen an ergonomic round grip is obtained to hold and move the lamp. The entire aluminium lamp body optimizes the LED thermal management and luminous efficacy, so as to maintain constant illuminance for the whole time the device is on without the aid of electronic processes.

## White light

7 colour temperatures with white LEDs only to avoid annoying coloured shadows.

# UNICA, simply a masterpiece

Glare-free light creates visual relaxation, reduces fatigue and increases alertness. The quality of artificial lighting is therefore of prime importance for the surgeon and the medical staff.
The light must be free of direct and indirect glare, have an excellent shadowless factor and not create coloured-shadow effects.

## Endoscopy light and for concentrated operating field

A light adjustable in intensity and colour temperature suitable for endoscopic operations and where a surgical field of reduced dimensions is required.


Courtesy light

In the upper part of the cupola, a courtesy light is fitted; a silicone gasket protects the LED crown which, when lit, creates a soft light effect.

Roughness

The internal roughness of the screen is calculated to stratify and collimate the light beam, improving the shadowless effect. The polycarbonate screen is treated on the outside surface to make it resistant to scratches and knocks.

**UNICA** is the result of a sophisticated design which combines excellent lighting features with exceptional mechanical characteristics for extra soft movement.
The careful choice of materials, featuring high structural value as well as top quality, together with the coded assembly of the different construction phases, ends with meticulous thermal, optical, functional and safety testing to make **UNICA** totally reliable.

# With UNICA, light can be personalized in a very simple way

Particular attention has been devoted to visual impact.
To avoid the feeling of blindness experienced when passing from a very well-lit area to a non-illuminated peripheral zone, an intermediate low-lit area has been created so the eye can adapt to light change.

UNICA uses white LEDs with 7 colour temperatures - 3800°K, 4000°K, 4200°K, 4400°K, 4600°K, 4800°K, 5000°K.
It is also possible to select two diameters of the lit-up surface according to the specificity of the operation to be performed. An electronic system switches-on a group of extra LEDs which, reflected on the elliptical mirrors, creates two different light diameters. For endoscopy and concentrated operating field operations, the Endoled function is active, providing soft light, this too adjustable in intensity and tone, to light up the work area.

# UNICA 860

UNICA 860 ceiling
(code. UNICA860SO)
Minimum height of the room 2480mm

UNICA 860 ceiling with double yoke
(code. UNICA860SO with DY1)
Minimum height of the room 3160mm

UNICA 860 + 520
(code. UNICA860+520)
Minimum height of the room 2600mm

UNICA860+520 with double yoke
(code. UNICA860+520 with DY2)
Minimum height of the room 3280mm

## Performances

| | | |
|---|---|---|
| Light intensity at 1m distance (Ec) | Klx | 160 |
| Color temperature | K | 3.800 – 4.000 – 4.200 – 4.400 – 4.600 – 4.800 – 5.000 |
| Color rendering index (CRI) | Ra | 97 |
| R9 | | 99 |
| d50 light field diameter where illuminance reaches 50% of Ec | mm | 130 |
| d10 light field diameter where illuminance reaches 10% of Ec | mm | 230 |
| Light field diameter adjustable from – to – | mm | 210 - 380 |
| Depth of illumination IEC60601-2-41 (L1+L2) at 60% | cm | 51 |
| Depth of illumination IEC60601-2-41 (L1+L2) at 20% | cm | 85 |
| Total radiated energy Ee where the illuminance reaches max level | $W/m^2$ | 567 |
| Ratio between radiated energy Ee and illuminance Ec | $mW/m^2.lx$ | 3,54 |

## Electrical data

| | | |
|---|---|---|
| Primary alternating voltage (a.c.) | V | 100 - 240 |
| Frequency | Hz | 50 / 60 |
| Absorbed power | W | 120 |
| No. of LED | Led | 204 |
| Average LED life | Hours | >60.000 |

## Standards

| | | |
|---|---|---|
| Directive | | 93/42/EEC* |
| Norm | | IEC 60601-2-41 |

** main directive and further amendments*

All lighting values are subjected to a tolerance of ± 5% due to manufacturing and metrological reasons

UNICA 520 ceiling
(code. UNICA520SO)
Minimum height of the room 2480mm

UNICA 520 + 520
(code. UNICA520+520)
Minimum height of the room 2600mm

UNICA 520 ceiling with double yoke
(code. UNICA520SO with DY1)
Minimum height of the room 3030mm

**UNICA 520 + 520** with double yoke
(code. UNICA520+520 with DY2)
Minimum height of the room 3150mm

UNICA 520 mobile
(code. UNICA520PI)

# UNICA 520

## Performances

| | | |
|---|---|---|
| Light intensity at 1m distance (Ec) | Klx | 160 |
| Color temperature | K | 3.800 – 4.000 – 4.200 – 4.400<br>4.600 – 4.800 – 5.000 |
| Color rendering index (CRI) | Ra | 96 |
| R9 | | 96 |
| d50 light field diameter where illuminance reaches 50% of Ec | mm | 110 |
| d10 light field diameter where illuminance reaches 10% of Ec | mm | 210 |
| Light field diameter adjustable from – to – | mm | 210 - 350 |
| Depth of illumination IEC60601-2-41 (L1+L2) at 60% | cm | 49 |
| Depth of illumination IEC60601-2-41 (L1+L2) at 20% | cm | 103 |
| Total radiated energy Ee where the illuminance reaches max level | $W/m^2$ | 580 |
| Ratio between radiated energy Ee and illuminance Ec | $mW/m^2.lx$ | 3,62 |

## Electrical data

| | | |
|---|---|---|
| Primary alternating voltage (a.c.) | V | 100 - 240 |
| Frequency | Hz | 50 / 60 |
| Absorbed power | W | 55 |
| No. of LED | Led | 84 |
| Average LED life | Hours | >60.000 |

## Standards

| | | |
|---|---|---|
| Directive | | 93/42/EEC* |
| Norm | | IEC 60601-2-41 |

** main directive and further amendments*

All lighting values are subjected to a tolerance of ± 5% due to manufacturing and metrological reasons

RIMSA

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