

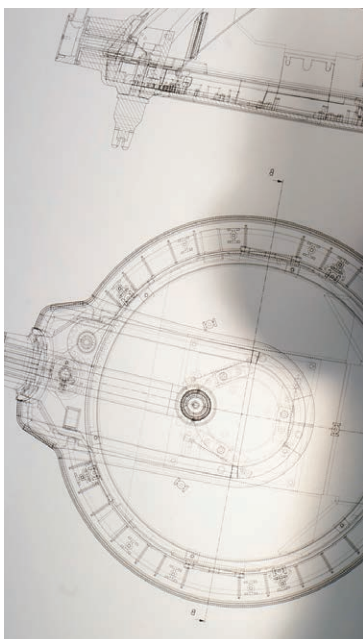
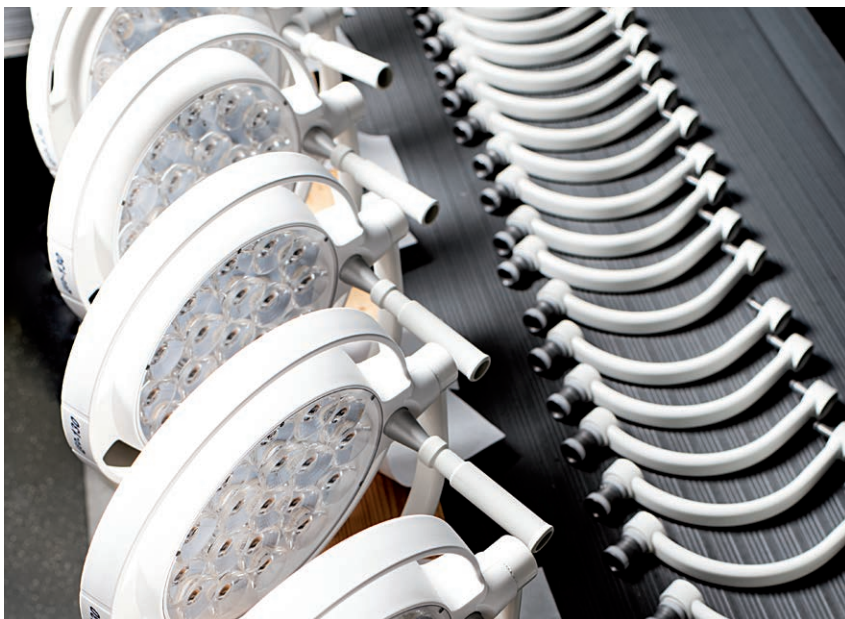


DR.MACH
GERMAN MED-LIGHT SOLUTIONS



**Veterinary
medicine in the
best light.**

Veterinary lights
from Dr. Mach



FIRST CLASS MEDICAL LIGHTS GO BY THE NAME OF – DR. MACH



Doctors worldwide operate, diagnose and treat patients with the aid of medical lights from Dr. Mach. For a very good reason: No other company offers a detailed portfolio of this kind under one roof. No other company has such a wealth of experience in the production and application of medical lights. And no other company offers doctors such quality and reliability. Dr. Mach was founded 75 years ago and today is still what it always has been: A specialised family business with unique know-how. With ultramodern machinery and a well-trained and skilled workforce from various specialist fields, we develop and manufacture at our headquarters on the outskirts of Munich. All of our lights are designed and produced in Germany and dispatched from our headquarters. This, along with endeavours to put the best lights at the disposal of doctors, is undoubtedly the reason why our lights are amongst the best in the world. And why they are to be found in operating theatres in Montreal, Berlin, Kuala Lumpur and the Antarctic – right around the world, to be precise.



Quality in numbers

Quality can be expressed in numbers and dates. In 75 years we have created and accomplished a huge amount. We have held hundreds of thousands of talks and equally as many consultations. We have had tens of thousands of meetings in which customer wishes and product improvements were considered. And we have equipped ten thousand doctors, practices and hospitals with modern lights – on all of the earth's continents, including Antarctica.

154.000

lux is the difference between our first light and our latest OT-light, the Mach LED 8MC – an increase from 6,000 to 160,000 lux.

14.560

days is the lifespan of the longest currently still in use medical light from Dr. Mach – in short: it has been in use for 40 years.



139

components are needed to assemble our LED 8MC surgical light in 25 precise work steps.

-32

degrees is the average temperature in winter at a research station in Antarctica where Dr. Mach OT-lights have been working reliably for years.

408.000

metres distant from the earth flies the highest Dr. Mach product in service: a monitor holder that works faultlessly even in the zero gravity of outer space.

25

steps is the distance from the CEO's office to the production hall.





To look after owners and their beloved animals, which are unable to voice their own feelings, is a noble art. It calls for know-how, an intuitive touch and an environment that makes it easy to get along with the "patient": lights from Dr. Mach. They safeguard the opportunity to quickly and reliably deal with household pets of various sizes. For the basis of a sound diagnosis is often a reliable visual examination. The accurate recognition of structure and colour is conditional on having perfect illumination. The ability to distinguish the subtlest colour nuances and recognise detailed structures and changes is primarily a matter of having the right light. Lights from Dr. Mach are particularly suitable for use in veterinary practices: absolutely noiseless and very low heat-radiating, all of our veterinary lights meet the highest human medicine requirements and standards. Our portfolio covers a broad lighting spectrum and offers the optimal lighting solution to veterinary surgeons who appreciate high standards and attach importance to a perfect working environment. In this way, Dr. Mach lights fill animal owners with confidence and ensure that they can concentrate on what is essential: maintaining the health of their beloved animals.





“As a veterinary surgeon, I need to be able to deal with both owners and their animals. Lights which radiate perfect light reliably create trust and help me to quickly provide the right treatment.”

Moussa Alsawas

Specialist in veterinary medicine



1

Cascade system:

Different lens types ensure vertical focusing of the light beam throughout the wound depth. This means that as the depth of the operating field increases, it is no longer necessary to manually re-adjust the light.

2

Shadow management:

Should the movements of the surgeon create shadows in the wound area, this is immediately compensated for by an increase in the light intensity of other LEDs – hence there are no shadows. As a result, the light field is always thoroughly illuminated during all movements.

3

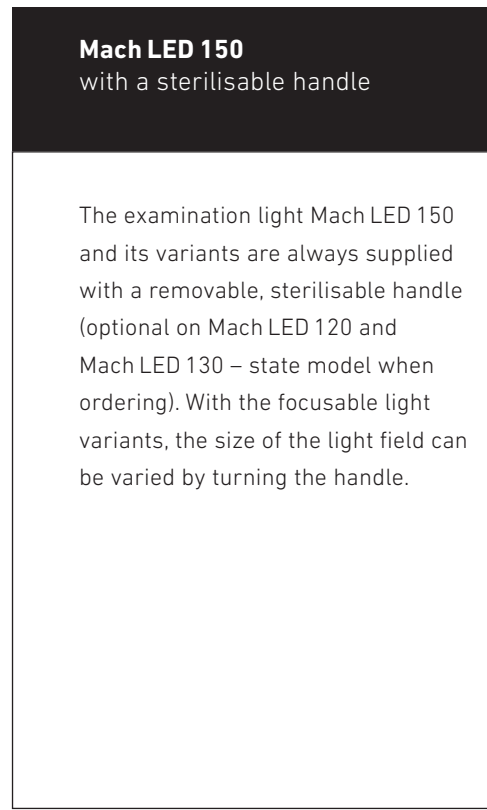
Video management:

An HD or 4K camera which may optionally be integrated enables operations to be filmed. Thanks to high depth of focus and autofocus, razor-sharp images are always possible – ideal for training purposes and documentation.



Mach LED 130
with a standard handle

Standard handle: The examination light Mach LED 130 and its variants come with a non-detachable ergonomically optimised handle. With the focusable light variants, the size of the light field can be varied by turning the handle.



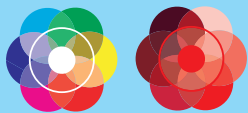
Mach LED 150
with a sterilisable handle

The examination light Mach LED 150 and its variants are always supplied with a removable, sterilisable handle (optional on Mach LED 120 and Mach LED 130 – state model when ordering). With the focusable light variants, the size of the light field can be varied by turning the handle.



Highlights of the Dr. Mach veterinary examination lights: LED 130, 130F, 130 Plus, 150, 150F, 150FP, 150MC

Dr. Mach veterinary lights are amongst the best and most reliable in the world. We offer a suitable light with all of the appropriate features for all requirements and needs.



Almost perfect colour rendition:
With our superior colour rendition values, the doctor is able to easily recognise the subtlest colour nuances in tissue. The colour spectrum of the wound is rendered naturally with rich contrast. The light is also noticeably gentler on the eyes.

Focusing (optional):
The light field can be focused by turning the handle. The focusable light beam allows spot illumination of deepest wound channels with high light intensity and exact matching of the light field diameter to the surgical situation.



Faceted multiple lens system:
The numerous computer-calculated faceted lenses ensure uniformity and keep the shadow in the light field to a minimum. Separately arranged optical systems, each with one LED module, generate their own light field. This increases the contrast and thereby enhances recognition of detail in the wound area.

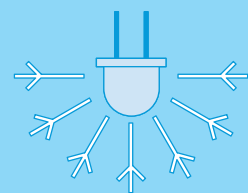
Handling:
During development of the new LED examination lights, great attention was paid to easy handling and easy of maintenance. Furthermore, the flow-enhancing open-ring shape prevents any build-up of heat in the surgeon's head area (and thus create optimal conditions for laminar-flow systems). The light can be positioned exactly to the wound field by means of the handle.



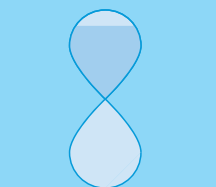
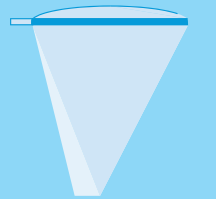
Control panel on light housing:
The following light functions can be controlled electronically:

- Switching on/off
- Electronic brightness control
- Colour temperature adjustment (only with Mach LED 150MC)

Long life-span/Low power consumption:
The life-span of more than 60,000 operating hours reduces many times over the cost of exchanging or replacing the previously used halogen bulbs. By using LED technology, the power consumption can sometimes be reduced by more than 50%.



Cool light:
The LED technology is much more efficient than conventional light sources such as halogen lamps. The heat radiation is reduced to a minimum without using any expensive filter technique. The temperature increase in the surgeon's head area is barely noticeable.



Examination lights Mach LED 130



Options

- Ceiling model
- Wall model with wall fixation
- Mobile model on four castor stand
- Mobile model with short arm on five castor stand

Mach LED 130

Light intensity at 1 metre distance	60,000 lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	96
Light field diameter	14 cm
Diameter of lamp head	33 cm
Number of LEDs	19

Mach LED 130 Plus

Light intensity at 1 metre distance	100,000 lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	96
Light field diameter	12 cm
Diameter of lamp head	33 cm
Number of LEDs	19

Mach LED 130F

Light intensity at 1 metre distance	70,000 lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	96
Light field diameter	13 – 19 cm
Diameter of lamp head	33 cm
Number of LEDs	19



100,000 lux

Light intensity

Computer-calculated, faceted lenses offer maximum uniformity and high contrast effect of the light – with a brightness of up to 100,000 lux



Handle

The iconic Dr. Mach handle not only allows optimal handling and perfect positioning of the light field but can also be rotated to adjust the brightness (optional).



Focus

The stable and clearly defined area of focus facilitates precise work from different angles and perspectives.

Examination lights Mach LED 150



Options

- Ceiling model
- Wall model with wall fixation
- Mobile model on four castor stand

Mach LED 150

Light intensity at 1 metre distance	110,000 Lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	97
Light field diameter	19 cm
Diameter of lamp head	40 cm
Number of LEDs	26

Mach LED 150MC

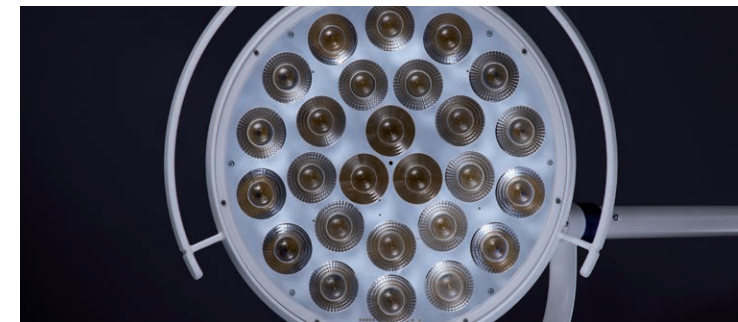
Light intensity at 1 metre distance	110,000 Lux
Colour temperature	3,750, 4,000, 4,250, 4,500, 4,750 Kelvin
Colour rendering index Ra	97
Light field diameter	21 cm
Diameter of lamp head	40 cm
Number of LEDs	26

Mach LED 150F

Light intensity at 1 metre distance	110,000 Lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	97
Light field diameter	16 – 24 cm
Diameter of lamp head	40 cm
Number of LEDs	26

Mach LED 150FP

Light intensity at 1 metre distance	130,000 Lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	97
Light field diameter	16 – 23 cm
Diameter of lamp head	40 cm
Number of LEDs	26



130,000 lux



K°

Light intensity

Computer-calculated faceted lenses offer maximum uniformity and high contrast of the light – with a brightness up to 130,000 lux.

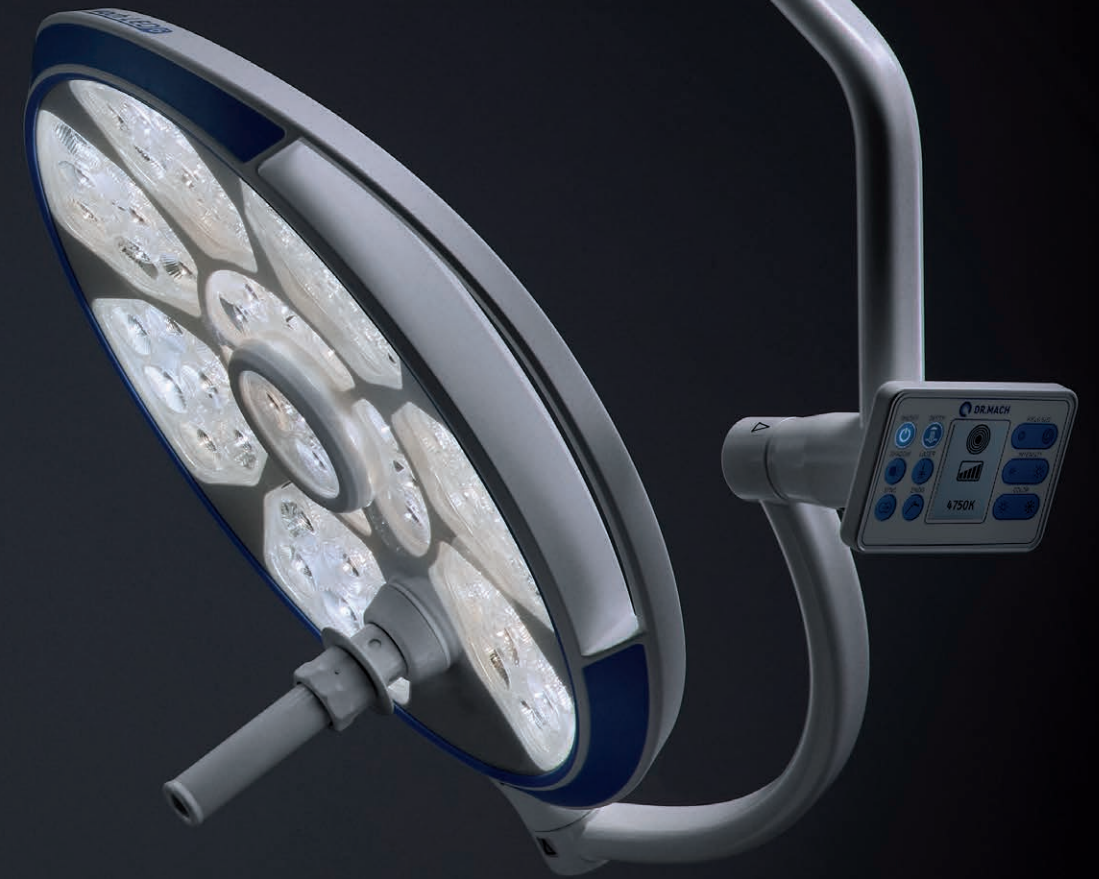
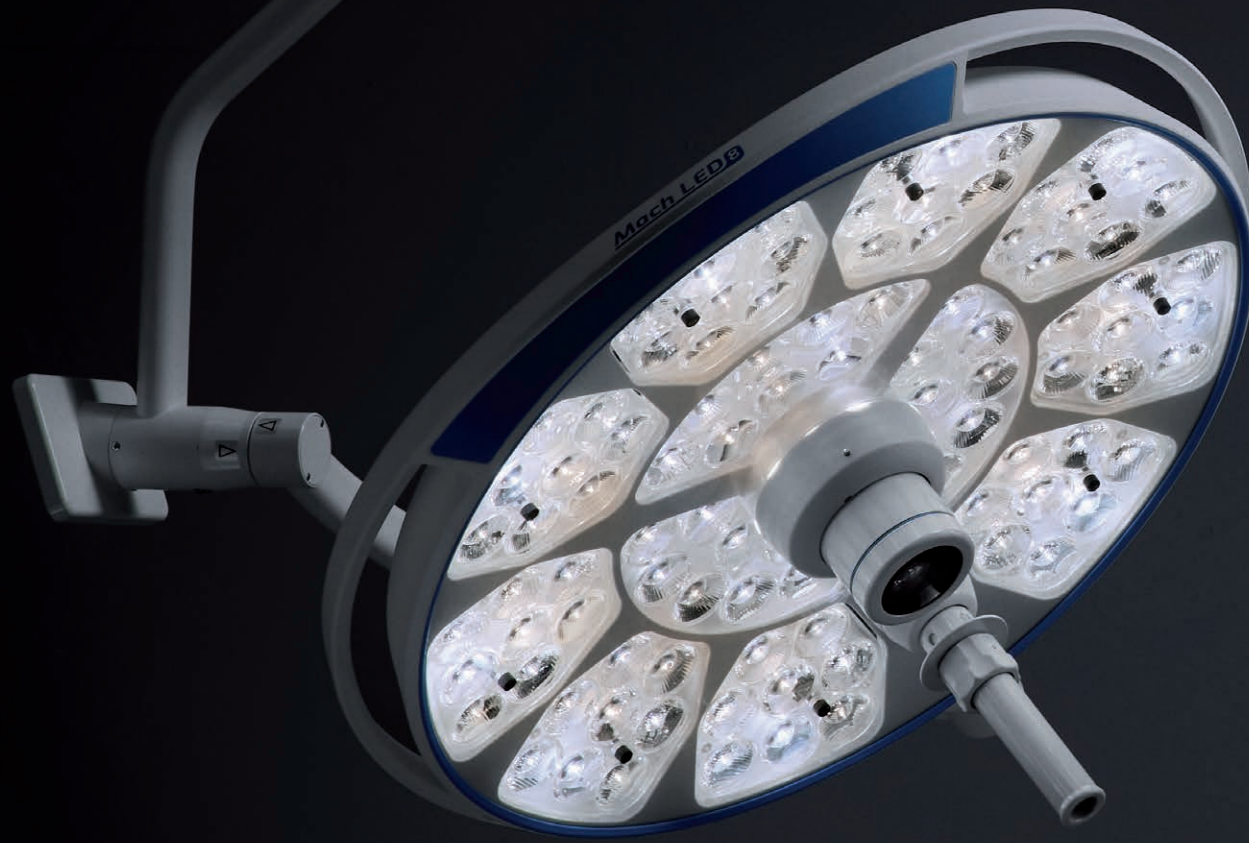
Handle

The iconic Dr. Mach handle not only allows optimal handling and perfect positioning of the light field but can also be rotated to adjust the focus (optional).

Colour temperature

The adjustment of the colour temperature in five steps 3,750, 4,000, 4,250, 4,500 and 4,750 Kelvin allows individual setting of the colour temperatures (only with LED 150MC).

OT-lights Mach LED 6MC and LED 8MC



Options

- Shadow management
- Laser pointer
- Communication
- Mechanical adjustment (larger light field diameter)
- Wall-mounted control
- Individual calibration of the colour temperatures and light intensities
- Diverse optional external interfaces and connections (e.g. Storz, Bender etc.)
- Camera preparation for HD or 4K camera (for details, please refer to our separate documentation)

Can also be combined with

Mach LED 150MC P

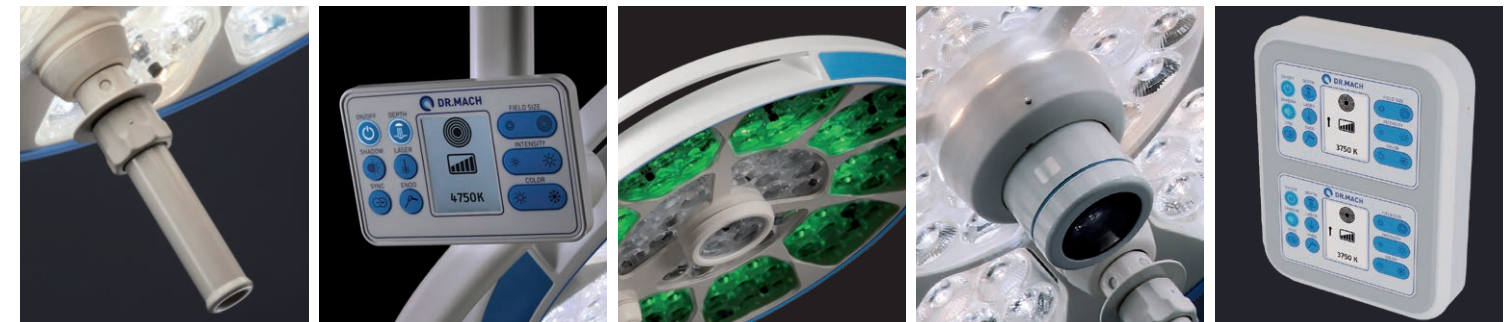
Light intensity at 1 metre distance	130,000 Lux
Colour temperature	3,750 – 4,750 Kelvin
Colour rendering index Ra	97
Colour rendering index R9	93
Light field diameter	21 cm
Diameter of lamp head	40 cm
Number of LEDs on the lamp head	26
Life of the lights	60,000 h

Mach LED 8MC

Light intensity at 1 metre distance	160,000 Lux
Colour temperature	3,750 – 4,750 Kelvin
Colour rendering index Ra	98
Colour rendering index R9	99
Light field diameter	19 – 30 cm
Diameter of lamp head	66 cm
Number of LEDs on the lamp head	99
Life of the lights	60,000 h

Mach LED 6MC

Light intensity at 1 metre distance	140,000 Lux
Colour temperature	3,750 – 4,750 Kelvin
Colour rendering index Ra	98
Colour rendering index R9	99
Light field diameter	18 – 30 cm
Diameter of lamp head	58 cm
Number of LEDs on the lamp head	69
Life of the lights	60,000 h



Design

Aesthetics meets ergonomics meets high tech. Our OT-lights are designed to be optimally functional, handle with maximum convenience and radiate minimal heat.



Handle

Due to its asymmetric position, the Dr. Mach handle allows optimal illumination of the wound area. Besides the focusing, another setting of choice can be controlled with the sterile area of the handle.



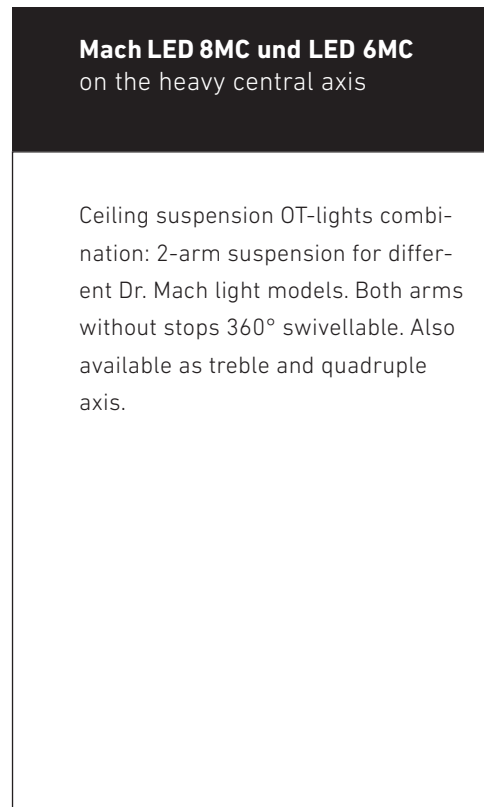
Laser pointer

When activated, the optional laser pointer defines the centre of the light field and thereby aids optimal alignment to the wound area.



Mach LED 6MC und LED 6MC
on the standard axis

Ceiling suspension OT-lights combination: 2-arm suspension for different Dr. Mach light models. One arm without stops 360° swivellable, other arm swivellable with stop at 330°.



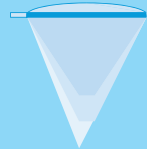
Mach LED 8MC und LED 6MC
on the heavy central axis

Ceiling suspension OT-lights combination: 2-arm suspension for different Dr. Mach light models. Both arms without stops 360° swivellable. Also available as treble and quadruple axis.



**Highlights of veterinary OT-lights:
Mach LED 6MC and LED 8MC**

By virtue of their diverse features, the Mach LED 6MC and Mach LED 8MC are among the best and most modern operating lights on the market. All of the characteristics and functionalities are geared towards offering veterinary surgeons worldwide the best possible conditions for a successful operation.



Outstanding depth illumination

One of the highlights of the new Mach LED 6MC and Mach LED 8MC is the cascade system. Different lens types are used in this system. These lenses have their focus at 70, 100 and 130 cm respectively. As a result, a vertical focusing of the light beam throughout the depth of the wound canal can be achieved. Thus the surgeon no longer needs to manually re-adjust the light when the depth of the operating field increases.



Large focusing range

The size of the light field can be varied by turning the sterilisable handle. The focusable light beam allows spot illumination of deepest wound channels with high light intensity and exact matching of the light field diameter to the surgical situation. The focusing is achieved by means of mechanical (optional) and electronic light field adjustment. The brightness of the light field remains constant.

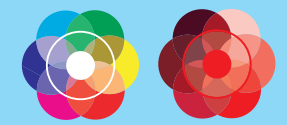


Automatic shadow management

A further innovation is the shadow management, which is rendered possible by numerous sensors in the light. Any cluster that has its light disturbed by the surgeon is turned off. At the same time, the other light clusters increase in intensity in order to compensate for the shadow. Even if the surgeon changes position, the light field remains evenly illuminated without the need to move the light manually. The lux remains constant at all times.

Almost perfect colour rendition

With almost perfect colour rendition values of Ra = 98 and R9 (red) = 99, you can easily discern the finest colour nuances in tissue. To also recognise the different red tones of the wound area, an exact rendition of the red colour range is essential. Rendering index R9 (red) = 99 means the surgeon recognises details much more easily. The colour spectrum of the wound area appears natural with rich contrast. The OT-light is also noticeably more comfortable for the eye.



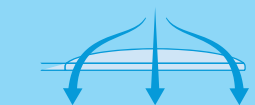
Antibacterial coating

For maximum hygiene in the operating theatre, the new generation of surgical lights have a closed, easy-to-clean surface. In addition, they have an antimicrobial coating that prevents the growth of microorganisms and thus helps to avoid infections.



Optimal flow properties

The shapes of the housings are aerodynamic and thus ideally suitable for laminar-flow systems (climatic ceilings).



OT-lights Mach LED 300



Options

Central spotlight for improved depth illumination
 Integrated HD camera (also can be retrofitted)
 Wireless remote control

Please refer to our separate documentation for details of the optional HD camera

Can also be combined with OT-light Mach LED 150MC P; for technical details see page 18

Mach LED 300DF SC

Light intensity at 1 metre distance	160,000 Lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	96
Colour rendering index R9	96
Light field diameter	19 – 26 cm
Lamp head diameter	55 cm
Number of LEDs on the lamp head	36
Life of the lights	60,000 h

Mach LED 300DF SC Spot

Light intensity at 1 metre distance	160,000 Lux
Colour temperature	4,500 Kelvin
Colour rendering index Ra	96
Colour rendering index R9	96
Light field diameter	19 – 26 cm
Lamp head diameter	55 cm
Number of LEDs on the lamp head	37
Life of the lights	60,000 h

Mach LED 300MC

Light intensity at 1 metre distance	160,000 Lux
Colour temperature	3,750, 4,000, 4,250, 4,500, 4,750 Kelvin
Colour rendering index Ra	97
Colour rendering index R9	97
Light field diameter	18 – 26 cm
Lamp head diameter	55 cm
Number of LEDs on the lamp head	36
Life of the lights	60,000 h



Design

Aesthetics meets ergonomics meets high tech. Our OT-lights are designed to be optimally functional, handle with maximum convenience and radiate minimal heat.



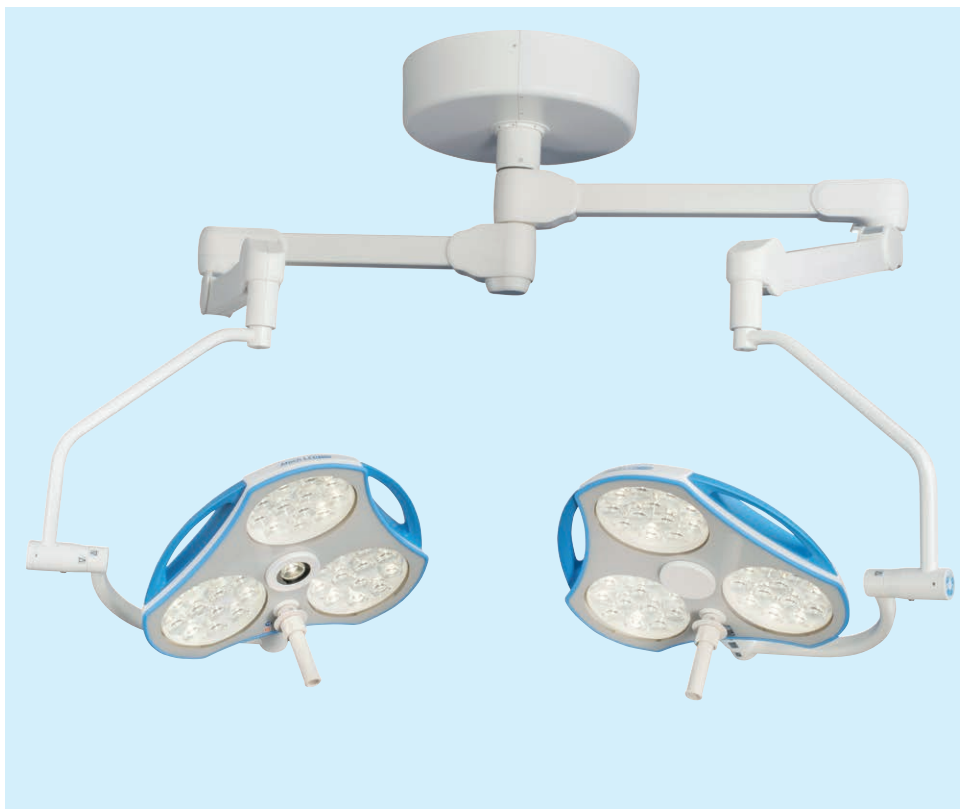
Handle

Due to its asymmetric position, the Dr. Mach handle allows optimal illumination of the wound area. The light fields can be merged by turning the handle. Adjustment of the light field diameter electronically (LED 300DF SC) or the colour temperature (LED 300 MC) is also possible in the sterile area of the handle.



Video

All of the LED 300 series lights come with camera preparation as standard (except the central spotlight option). Thus an HD camera can be retrofitted at any time.



Mach LED 300DF SC with spotlight and Mach LED 300DF SC with camera preparation on heavy central axis

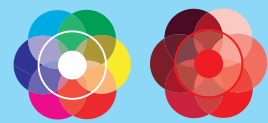
Ceiling suspension OT-lights combination: 2-arm suspension for different Dr. Mach light models. Both arms without stops 360° swivellable. Also available as treble and quadruple axis.



Mach LED 300MC with camera preparation and Mach LED 300MC with integrated HD camera on standard axis

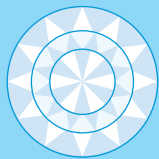
Ceiling suspension OT-lights combination: 2-arm suspension for different Dr. Mach light models. One arm without stops 360° swivellable, other arm swivellable with stop at 330°.

Highlights of OT-light: Mach LED 300



Excellent colour rendition

With excellent colour rendition values of up to $R_a = 97$ and R_9 (red) = 97, you can easily discern the finest colour nuances in tissue. To also recognise the different red tones of the wound area, an exact rendition of the red colour range is essential. Rendering index R_9 (red) = 97 means the surgeon recognises details much more easily. The colour spectrum of the wound area appears natural with rich contrast. The OT-light is also noticeably more comfortable for the eye.



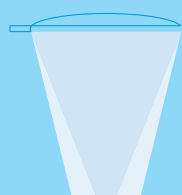
Faceted multi-lens system

A multitude of computer-calculated faceted lenses guarantees homogeneity and lowest shadiness in the light field. Separately arranged optical systems, each with one LED module, generate their own light field and thereby intensify the contrast effect of the OT-light.



Merging of light fields

When the sterilisable handle is turned, the three LED clusters each containing 12 lenses swivel. The separate light fields can be bundled, depending on the working distance, and merged into a single light field.



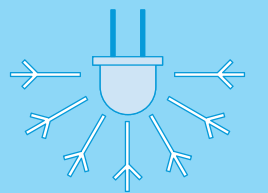
Focusing

The size of the light field can be varied (LED 300DF SC) by turning the adjusting ring on the sterilisable handle. This allows spot illumination of deepest wound channels with high light intensity and exact matching of the light field diameter to the surgical situation.

The OT-light LED 300 is one of the most popular on the market thanks to its ease of operation and high functionality. With its mature, well-engineered design and various options, it offers doctors and surgeons worldwide the reliable prerequisites for a successful operative treatment.

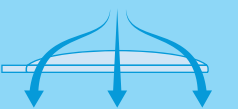
Cool light

The use of LED modules reduces the radiated heat to a minimum. There is no build-up of heat under The OT light. The area around the surgeon's head remains cool.



Aerodynamic design

The shapes of the housings are aerodynamic and thus ideally suitable for laminar-flow systems (climatic ceilings).



Easy maintenance

With just a few steps the light housing can be opened to gain access to all of the system components. Due to their modularity all components can be easily exchanged. The housings are easy to clean.



Photobiological safety

The requirements of the photobiological safety standard DIN EN 62471 are met and so there is no risk for the human eye even during very long and intensive use of the OT-light.



Suspensions and configurations

Our examination lights offer various combination and suspension options. Different methods of fixation and support arms allow attachment to almost all ceiling heights and carrier systems.

1 Mach LED 130
5 feet stand

4 Mach LED 6MC
Stand

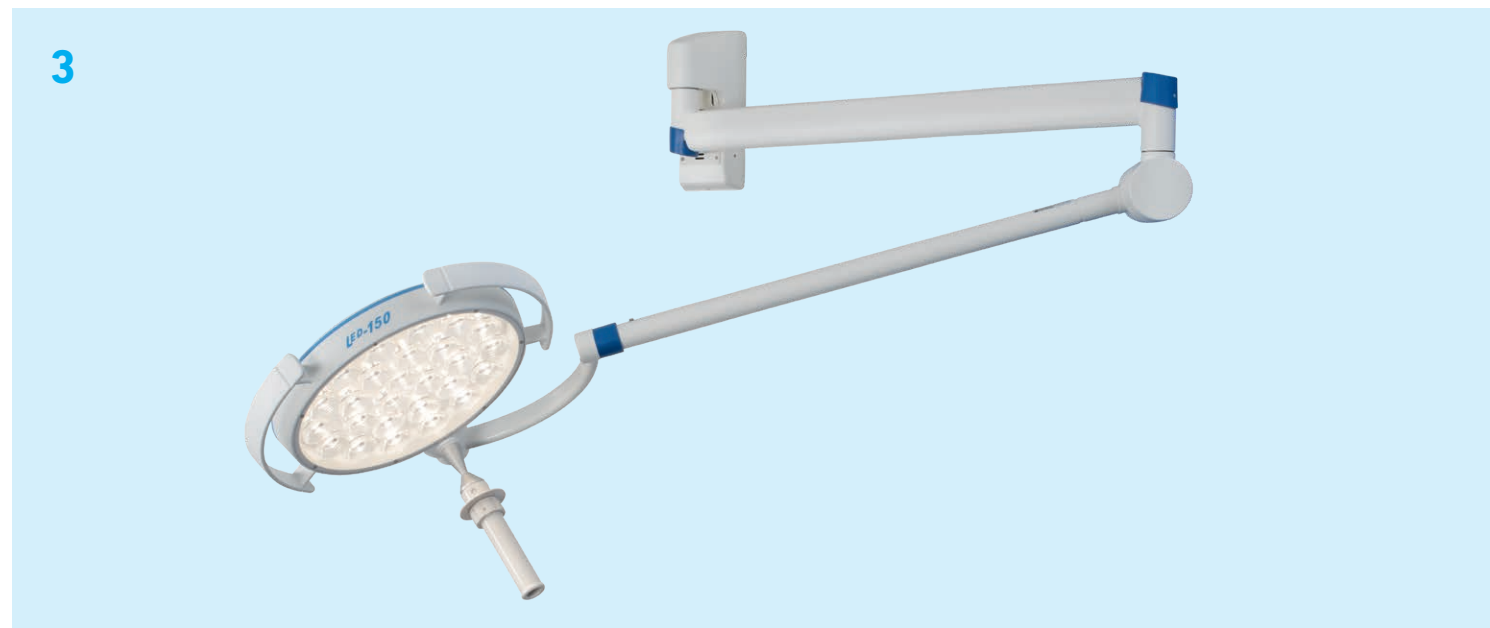
6 Mach LED 6MC
Ceiling fixation

2 Mach LED 130
Ceiling fixation

5 Mach LED 300
Ceiling fixation

7 Mach LED 150
Stand

3 Mach LED 150
Wall fixation





At home all over the world. In over 100 countries and on all continents, Dr. Mach OT-lights are synonymous with exceptional quality, reliability and engineering excellence. Together with our partner distribution networks, we sell and maintain Dr. Mach medical lights for doctors from all spheres. For decades our name has stood for:

Made in Germany – used all over the world.

Your quick link to Dr. Mach. For all queries concerning our medical lights or our company, please contact our **head office: +49 (0)8092 2093 0**

Or send us an **email: info@dr-mach.de**

This way to your contact person



Sustainability for man and the environment. Dr. Mach lights are people-oriented: Light that enables doctors to preserve health and save lives. We absolutely pursue the notion of a people-centric approach: to employees, the environment and commercial responsibility. Our commitment in this regard grows steadily:

The solar-panel system on the roof of our new company headquarters produces just under 100kWh. The waste heat from our manufacturing machinery is used as an energy source and our building insulation meets the strict efficiency standard KfW 55.

We place external preparation and legwork preferentially with establishments in the region that employ people with cognitive and physical limitations. We regularly sponsor local clubs and charitable institutions.

And we continually strive to increase our involvement – for the health of people and the natural world.





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