Mach LED 500/300

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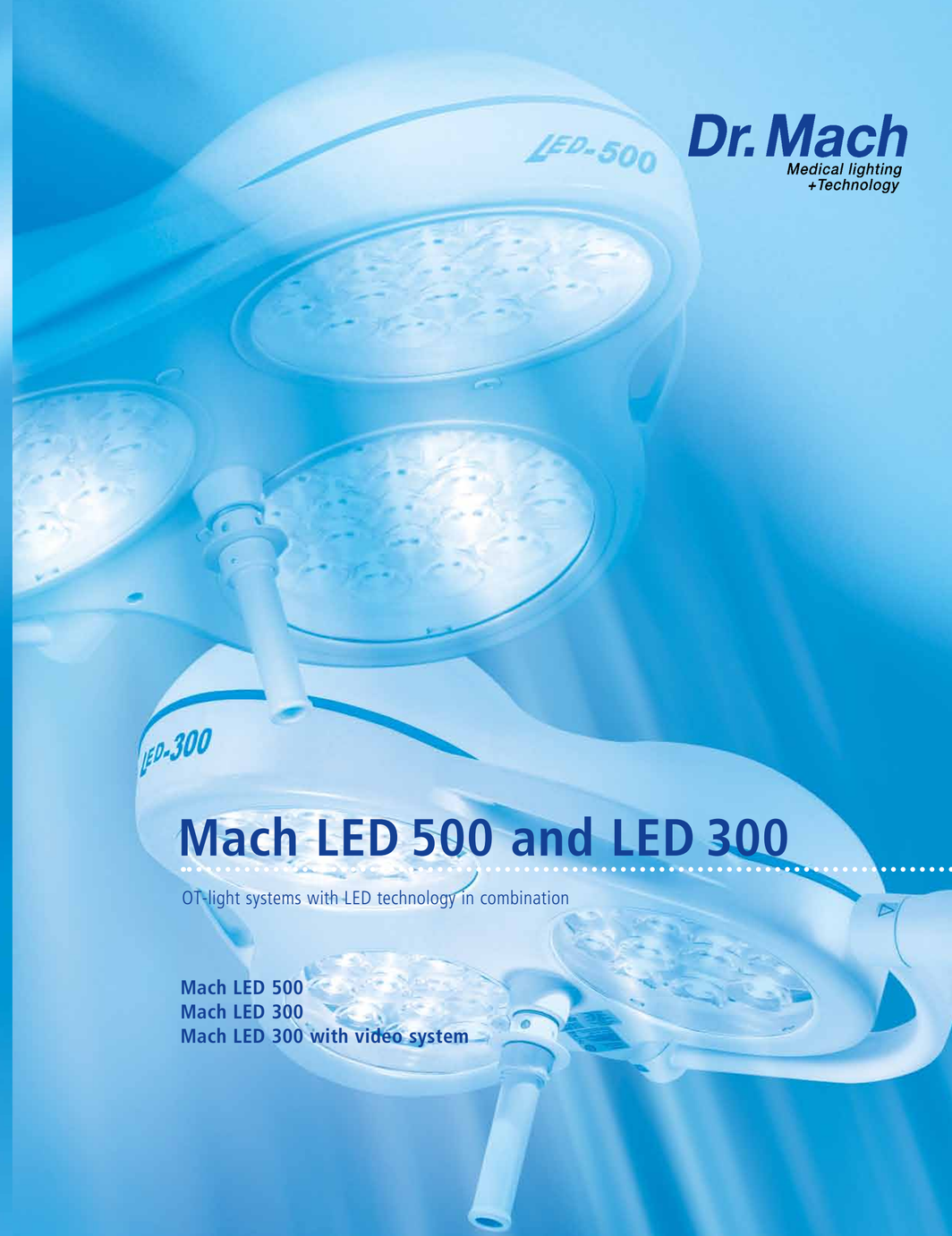
Dr. Mach
Medical lighting
+Technology



Mach LED 500 and LED 300

OT-light systems with LED technology in combination

Mach LED 500
Mach LED 300
Mach LED 300 with video system

LED OT-LIGHTS

Focus on the light!

Dr. Mach sets standards in the medical illumination technology for decades.

The new OT-light generation with LED technology supports your professionality by innovative technology and design.
The advantages of the LED technology: a life-span of minimum 40.000 hours and an almost nonexistent heat development in the surgeon's head area and in the wound field.

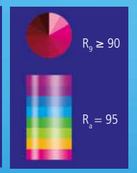
The advantages already provided by Dr. Mach's light technology with halogen and gas discharge lamps have been maintained: natural colour reproduction, exact illumination of the wound field and easy positioning of the light head.

Your Dr. Mach *Medical lighting +Technology* **Team**

Advantages
of the Mach LED 500 and LED 300

Light quality and optics

Conventional lighting systems



Dr. Mach
light system

Superiour colour rendition

With colour rendering indexes $R_a = 95$ and R_9(red) ≥ 90 the surgeon recognizes clearly the tiniest nuances of colour in tissue. For recognizing the exact colour spectrum of the wound the exact renditi-on of the red colour range is essential. R_9(red) ≥ 90 means for the surgeon a visibly better recognition of details. The colour spectrum of the wound is rendered naturally with rich contrast. The OT-light clearly provides wel-come relief for your eyes.

Facetted multi-lens system

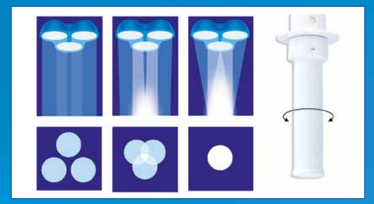
A multitude of computer-calculated facetted lenses guarantees homogeneity and lowest shadiness in the light field. Separately arranged optical systems, with one LED module, generate their own light field, which increases the contrast effect of the OT-light. Light intensities of 160.000 and 130.000 Lux can be attained without difficulty.

Duo-Focus-Technology:

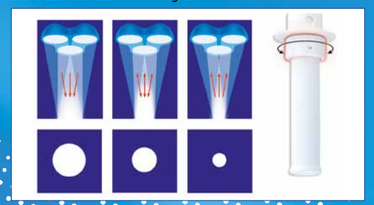
Merging of the individual luminous fields

By turning of the sterilizable handle the three LED-clusters swivel. The single light fields are joined and overlap to one field with increased light intensity.

Mach LED 500 / LED 300 OT-lights



Mach LED 500 / LED 300 OT-lights



Focussing

By turning of the adjustment ring at the sterilizable handle the bulbs are moved inside the reflector up and down. The focus-sable light beam allows a punctual illumination of deepest wound channels with hight intensity and an exact matching of the light field diameter with the size of the wound field.

Additional comfort

Cool light

The LED technology is much more effective than conventional light sources such as halogen bulbs. The heat radiation is reduced to a minimum without using any expensive filter technique. The tempe-rature increase in the surgeon's head area is almost nonexistent.

Flow properties

During development high attention was paid to the performance of the new LED OT-lights in laminar-flow ceiling systems.

Easy maintenance

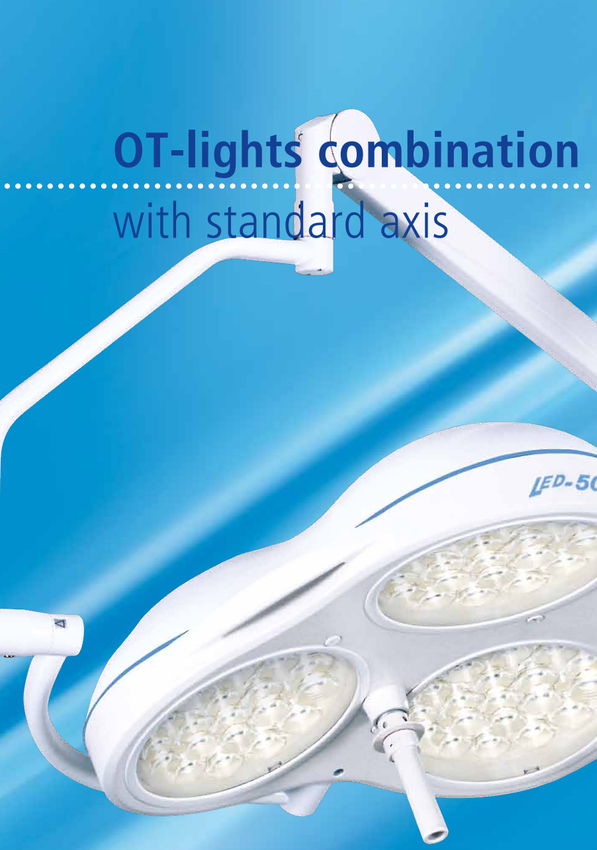
With only a few steps the lamp housings can be opened to have access to all system components. Due to the module technology all components can be easily exchanged. Within 30 seconds you exchange the bulb. The housings are easy to clean.

Housing of die-casted aluminium

The material guarantees shock resistance and long life.

OT-lights combination

with standard axis



Mach LED 500
160.000 Lux

Mach LED 300
130.000 Lux

The light beams of the three LED-clusters can be merged by the sterilizable handle and – optionally – also focussed.

Performance description

Mach LED 500 DF / LED 300 DF

Merging of light fields

Focussing

- punctual illumination of deepest wound channels
- exact adjustment of the light field to the size of the wound area

ON-/OFF switch on the light housing

Electronic light intensity control

Superior colour rendition

Facetted multi-lens system

Cool light

Flow properties

Easy maintenance

Housing of die-casted aluminium

Combination versions

with heavy central axis

Mach LED 500

Mach LED 300
with camera

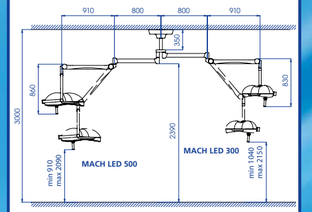
Mach LED 300
with camera

Two possible alternatives:

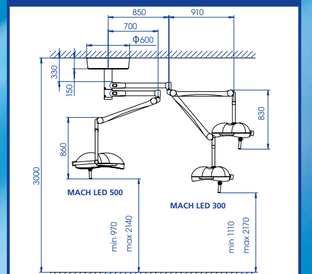
Mach LED 500 or Mach LED 300 as the main light with the satellite Mach LED 300.

Mach LED 500 and LED 300 combinations

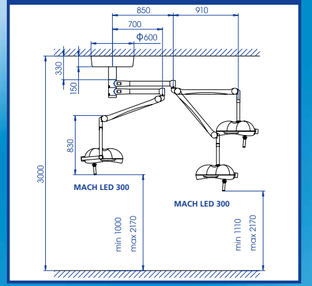
LED 500 / LED 300 with standard axis



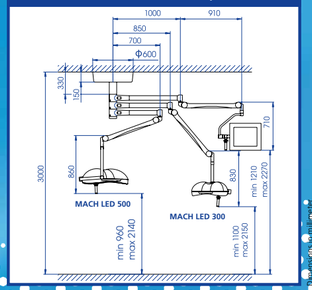
LED 500 / LED 300 with heavy central axis



LED 300 / LED 300 with heavy central axis



LED 500 / LED 300 / TFT with heavy central axis



Combination versions

with heavy central axis

Mach LED 500

Mach LED 300
with camera

Mach LED 300
with camera

Mach LED 300

Two possible alternatives:

Mach LED 500 or Mach LED 300 as the main light with the satellite Mach LED 300.

Technical data Mach LED 500 OT-lights system[1]	DF
Light intensity Lux at 1 meter distance	160.000
Colour rendering index R_a[2]	95
Colour rendering index R_9[3]	≥ 90
Focussable size of the light field (in cm)	17 - 28
Colour temperature (Kelvin)	4500
Electronic light intensity control at the lamp head	50 - 100 %
Temperature increase in head area	0,5° C
Total power consumption	70 W
Number of LEDs	57
Working distance (in cm)	70 - 140
Height adjustment (in cm)	118

Technical data Mach LED 300 OT-lights system[1]	DF
Light intensity Lux at 1 meter distance	130.000
Colour rendering index R_a[2]	95
Colour rendering index R_9[3]	≥ 90
Focussable size of the light field (in cm)	17 - 28
Colour temperature (Kelvin)	4500
Electronic light intensity control at the lamp head	50 - 100 %
Temperature increase in head area	0,5° C
Total power consumption	58 W
Number of LEDs	36
Working distance (in cm)	70 - 140
Height adjustment (in cm)	118

(1) External power supply
(2) R_a is an average of R_1 = burnt pink, R_2 = mustard yellow, R_3 = yellow green, R_4 = light green, R_5 = turquoise blue, R_6 = skyviolet, R_7 = violet, R_8 = lilac. Maximum value = 100.
(3) R_9 is the value for the rendering of the colour red. This is not used in calculating the general colour rendering index R_a. Maximum value = 100. Values of more than 90 allow the surgeon to recognize details better in the wound area.

OT-lights Mach LED 500 and LED 300
with integrated video system NEW

Mach LED 500

Monitor

Mach LED 300
with camera

The Dr. Mach video system offers
flexible rotation and a perfect picture.

Technical data Dr. Mach camera	HD	MFB-MO (SD)
	High Definition camera with digital transmission for visual communication	Colour image camera for visual communication (PAL)
Objectiv system	30-fold optical zoom, 12-fold digital zoom f = 4.3 to 129 mm F1.6-4.7 auto-focus	36-fold optical zoom, 12-fold digital zoom f = 3.4 to 122.4 mm F1.6-4.5 auto-focus
Video signal	HD: 1080i/50; 720p/50 or 1080i/59.94; 720p/59.94	–
Video Output	HD-component	Y/C
Image points	approx. 2.000.000 pixels	752 (H) x 582 (V)
Horizontal resolution	–	Over 530 lines
Humidity	20 - 80%	20 - 85%
Dimensions (Ø, length)	80 x 150 mm	80 x 150 mm
Weight	900 g	900 g
Interference radiation in acc. with	FCC class A	FCC class A

Technical data

The Dr. Mach HD- and SD-video systems offer highest picture quality with a maximum movability of the light.

Advantages of the new Dr. Mach video system

- uniform preparation for HD- and SD-camera
- 360° continuous rotation in all major joints
- easy-mounting due to video signal transmission through the supply cables
- camera control with a serial interface or a second control unit
- easy fixation of the camera in another OT
- streaming, conversion or storage solution available on request

HD resolution

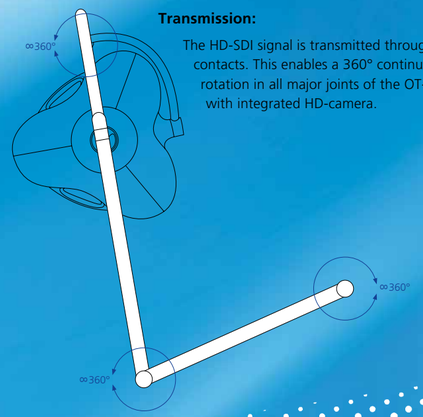
With the transmission of high-resolution pictures of the surgeries and the medical interventions we fulfill your visual requirements.

Advantages:
A brilliant picture quality with high depth of field and increased detail reproduction means a better recognition of the details in the woundfield by the surgeon or the physician.

Camera technology

The HD-camera with 30-fold optical zoom and the SD-camera with 36-fold optical zoom are equipped with auto-focus, auto-iris and picture rotation. The cameras are operated with a control unit.

Several camera functions can be adjusted on the control unit, such as:
- Switching ON and OFF
- Switching between 1080i and 720p – Dr. Mach HD-camera only
- Focus (automatic/manual)
- Iris (automatic/manual)
- Zoom
- Picture rotation
- Frozen image



Transmission:

The HD-SDI signal is transmitted through sliding contacts. This enables a 360° continuous rotation in all major joints of the OT-light with integrated HD-camera.