

Dr. Mach

The new ones: Mach LED 5sc and Mach LED 3sc

LED

Mach LED 3sc

Possible combinations



Mach LED 5sc + Mach LED 5sc



Mach LED 3sc + Mach LED 3sc

Advantages

Ergonomics

Modulated video- and control signals

The video- and control signals are not transmitted in the conventional way by separate cables – but via the electric lines and sliding contacts of the operating light.

Advantages:

The operating light permits continuous rotary movement. The upgrading with a camera is significantly cheaper and easier. The camera doesn't need readjustment depending on the distance between lamphead and wound area as it is positioned almost centrally in the lamphead.



Flow properties

During development high attention was paid to the performance of the new LED OR lights in laminar-flow ceiling systems. The open ring form and the minimal surface avoid any heat increase in the surgeon's head area and create a perfect laminar flow performance, being a basic hygienic requirement in surgery.



Key pad on the lamp housing

Several light functions can be adjusted electronically, such as:

- Switching ON and OFF
- Illumination in depth
- Laser pointer
- Merging of light fields (focussing)
- Electronic light intensity control



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 temperature increase in the surgeon's head area is almost nonexistent.

Long life-span

The life-span of more than 25.000 operating hours reduces the costs for exchanging and replacing the illuminants considerably, compared with the conventional halogen technology used with former OT-lights.

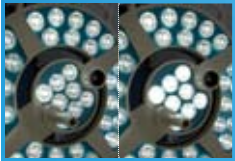
Advantages LED technology

Facetted multi-lens system



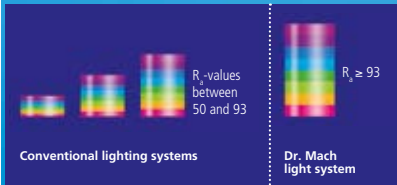
A multitude of computer-calculated facetted lenses guarantees homogeneity and lowest shadiness in the light field. Separately arranged optical systems, each with one LED module, generate their own light field, which increases the contrast effect of the OR light. The maximum light intensity is 160.000 Lux.

Illumination in depth



You have the possibility to increase the light intensity of the central segment of the OT-light. This enables an optimum illumination of the wound field according to its texture and the shadowing effects. This is very important in case of small and deep wound channels.

Superiour colour rendition



With a previously unattainable colour rendition $R_9 \geq 93$ you easily see the tiniest nuances of colour in tissue. For recognizing the exact colour spectrum of the wound the exact rendition of the red colour

range is essential. The colour spectrum of the wound is rendered naturally with rich contrast. The OT-light clearly provides welcome relief for your eyes.

Integrated OT-laser pointer



The built-in laser pointer always indicates the middle of the light field and helps the surgeon to find the optimal position of the OT-light to the wound field. The laser pointer can be activated either at the key pad on the lamp housing or by a right-turn of the ring at the sterilisable handle. After a short time the laser pointer turns off automatically.

Camera remote control

- 36-fold optical zoom
- focus-control (automatic/manual)
- iris-control (automatic/manual)
- colour-control
- frozen image
- optional with image rotation



Integrated video system

A Sony camera with 36-fold optical zoom, autofocus, autoiris and image rotation is used. Via remote control panel it can be controlled at the same time from an auditorium or other rooms.

Digital video system

NEW

By a new digital camera remote control you can now receive digital video signals for the computer or network. Analog camera images are converted in MPEG4-video signals. These are available through a RJ45 interface at the remote control and a network cable.

Advantages:

You don't need a video card any longer. The images can be directly saved on the computer if sufficient capacity is available. Nevertheless you can further record the signals on video or DVD-recorders. For this the remote control panel is equipped with two S-video (Y/C) connectors.

Available digital video systems (option against surcharge)

Video system DIGITAL ECO

Every computer in the network has access to the video images and they can be saved on a hard disc drive of sufficient capacity.

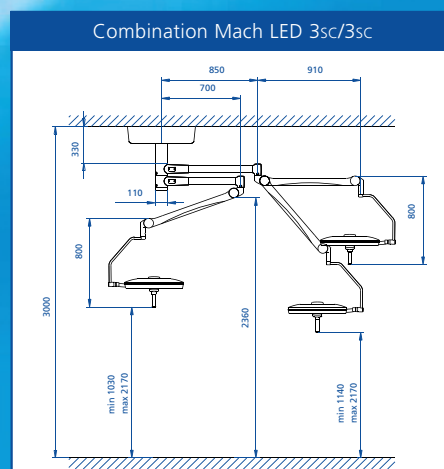
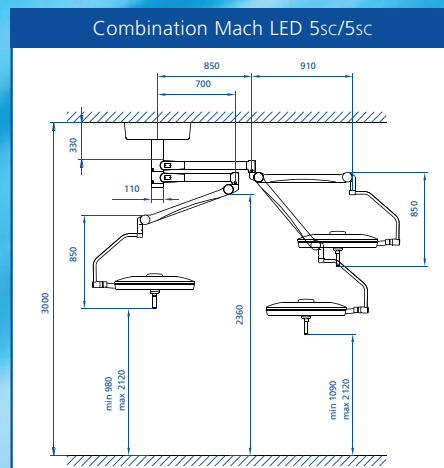
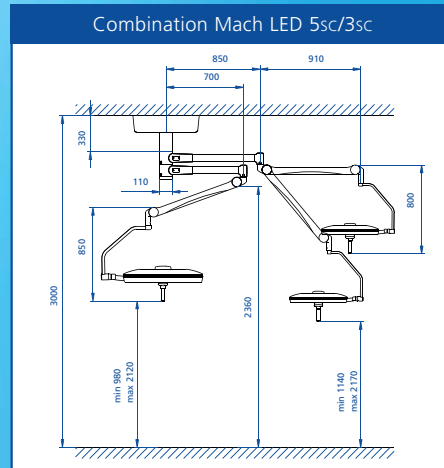
Video system DIGITAL PC-CONTROL

As with the video system Digital Eco every computer in the network has access to the video images and they can be saved on a hard disc drive of sufficient capacity. Additionally the camera can be controlled by a specially designed software through the PC-screen. This is done by an IP-address designated for the camera remote control.

Dr. Mach

LED

The LED revolution



Dimensions in millimeter

Technical data	Mach LED 5sc	Mach LED 3sc
Light intensity Lux at 1 meter distance	160.000	130.000
Colour rendering index $R_a^{(1)}$	≥ 93	≥ 93
Focussable size of the light field (in cm)	20-32	17-28
Colour temperature (Kelvin)	4500	4500
Electronic light intensity control at the lamphead	standard	standard
Dimming range	5 - 100 %	5 - 100 %
Temperature increase in head area	0,5° C	0,5° C
Total power consumption	40 W	30 W
Number of LED's	40	28
Life-span of the LED's	> 25.000 h	> 25.000 h
Working distance (in cm)	60 - 150	60 - 150
Height adjustment (in cm)	118	118

(1) 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.

Technical data	MFB-MO ⁽¹⁾	OFB-ST ⁽²⁾
Colour image camera for visual communication (PAL/NTSC)		
Objectiv systems	NEW 36-fold optical zoom 12-fold digital zoom f = 3.4 to 122.4 mm F1.6-4.5 Auto Focus (integr. focussing system)	72-fold zoom Auto Focus (integr. focussing system)
Video exit 75 Ohm	VBS: 1.0 Vp-p. Sync. Negative Y/C Output	VS1.0 Vp-p. Sync. Negative C: Burst 0.300 Vp-p VBS: 1.0 Vp-p Composite
Image points	752 (H) x 582 (V)	752 (H) x 582 (V)
Horizontal resolution	NEW Over 530 lines	Over 460 lines
Humidity	20 - 85%	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

(1) with remote control, with image rotation

(2) without remote control, without image rotation

No additional cables are needed for the camera.
By a special electronic design the power supply of the operating light is used for the transmission of the control- and video signals.

For detailed informations please ask for our special catalogue for single lights.