



## **Data sheet**



### **Features**

- User-friendly display and keypad**
- Sterilizable handle - 200 sterilization cycles**
- Electronic focussing (F)**
- Light intensity control**
- Colour temperature adjustment (MC)**
- Endo-mode with green light**
- Depth-light**
- Optionally central spot or camera preparation for Dr. Mach video system**
- Aluminium housing**

### **Optional features**

- Integrated laser pointer**
- Automatic shadow management (S)**
- Additional mechanical light field merging (DF)**
- Wall control (accessory)**

**Technical data**

Type of device	Operating light
Class (according to MDR)	I
Protection class/-type	I
IP protection class (IEC 60529)	IP 54 (Lamp head without camera preparation) IP 53 (Lamp head with camera preparation) IP 20 (Suspension system)
Radio interference suppression	EN 55011 (CISPR 11) EN 60601-1-2 (IEC 60601-1-2)
Temperature (for transport and storage) <sup>1</sup>	-25 °C to +70 °C
Ambient temperature for operation	+5 °C bis +40 °C
Relative humidity (for transport and storage) <sup>1</sup>	5 % RH to 95 % RH
Relative humidity for operation	30 % bis 75 % RH
Air pressure (for transport and storage) <sup>1</sup>	700 hPa to 1060 hPa
Input voltage	24-30 V DC
Power consumption / current consumption	80 W / 3,3 A (without S) 82 W / 3,4 A (with S) 90 W / 3,7 A (without S, with camera) 92 W / 3,8 A (with S, with camera)
Input voltage mains power supply (primary)	100-240 V AC, 50/60 Hz
Current consumption mains power supply (primary)	5.8 A max.
Output voltage mains power supply (secondary)	28 V DC
Output power mains power supply (secondary)	190 W
Operating time	Continuous operation possible
Weight of light body incl. accessories	max. 19.5 kg
Expected life <sup>2</sup>	10 years
Turbulence level (DIN 1946-4)	19 %

<sup>1</sup> Transport and storage conditions for lamp body and power supply unit.

<sup>2</sup> At the end of the expected (designed) service life, the lamp must be serviced more frequently for safe operation.

## Lighting technical data

### Lights without camera preparation



	Mach LED 8MC F	Mach LED 8MC DF	Mach LED 8MC F S	Mach LED 8MC DF S
Central light intensity (Distance 1 m)	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>
Light field diameter d10	188 mm	188 mm	188 mm	188 mm
Light field diameter d50	103 mm	103 mm	103 mm	103 mm
Residual light intensity with one shade	68 %	68 %	68 %	68 %
Residual light intensity with two shades	53 %	53 %	68 %	68 %
Residual light intensity on the ground of a normed tube	100 %	100 %	100 %	100 %
Residual light intensity on the ground of a normed tube with one mask	68 %	68 %	68 %	68 %
Residual light intensity on the ground of a normed tube with two masks	53 %	53 %	68 %	68 %
Illumination depth 20 %	1890 mm	1890 mm	1890 mm	1890 mm
Illumination depth 60 %	900 mm	900 mm	900 mm	900 mm
Colour rendering index R <sub>a</sub> (type)	98	98	98	98
Colour rendering index R <sub>9</sub> (type)	99	99	99	99
Colour rendering index R <sub>13</sub> (type)	99	99	99	99
Radiation strength in the field at a distance of 1 m	576 W/m <sup>2</sup>	576 W/m <sup>2</sup>	576 W/m <sup>2</sup>	576 W/m <sup>2</sup>
Maximum radiation strength at a distance of 0.73 m	694 W/m <sup>2</sup>	694 W/m <sup>2</sup>	694 W/m <sup>2</sup>	694 W/m <sup>2</sup>
Relation E <sub>e</sub> /E <sub>c</sub>	3.6 (mW/m <sup>2</sup> ) /lx	3.6 (mW/m <sup>2</sup> ) /lx	3.6 (mW/m <sup>2</sup> ) /lx	3.6 (mW/m <sup>2</sup> ) /lx
Focusable light field size	19 - 30 cm	19 - 36 cm	19 - 30 cm	19 - 36 cm
Colour temperature (Kelvin)	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>
Temperature increase in the head area	0,5 °C	0,5 °C	0,5 °C	0,5 °C
Luminous efficacy (efficiency)	278 lm/W	278 lm/W	278 lm/W	278 lm/W
Number of LEDs	99	99	99	99
Working distance	70 - 160 cm	70 - 160 cm	70 - 160 cm	70 - 160 cm
Dimming range (%)	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>
Dimming levels	5	5	5	5
Diameter of light body	66 cm	66 cm	66 cm	66 cm
Life-span of LEDs	60,000 h	60,000 h	60,000 h	60,000 h

All technical data are subject to certain fluctuations. For production reasons, the actual values have a tolerance of  $\pm 5\%$ . The values for the colour temperature can have deviations of  $\pm 200$  K.

<sup>a</sup> According to IEC 60601-2-41 the max. intensity of illumination must not exceed 160.000 lux. Therefore, the tolerance for this value is -5%.

<sup>b</sup> Individual adjustment of colour temperature values possible on demand (adjustable range 3600-5500K) (4250 K not changeable).

<sup>c</sup> Individual adjustment of dimming range possible on demand (range 20%-100%).

### Lights with camera preparation

	Mach LED 8MC F KV	Mach LED 8MC DF KV	Mach LED 8MC F S KV	Mach LED 8MC DF S KV
Central light intensity (Distance 1 m)	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>	160,000 Lux <sup>a</sup>
Light field diameter d10	190 mm	190 mm	190 mm	190 mm
Light field diameter d50	104 mm	104 mm	104 mm	104 mm
Residual light intensity with one shade	75 %	75 %	75 %	75 %
Residual light intensity with two shades	47 %	47 %	58 %	58 %
Residual light intensity on the ground of a normed tube	100 %	100 %	100 %	100 %
Residual light intensity on the ground of a normed tube with one mask	75 %	75 %	75 %	75 %
Residual light intensity on the ground of a normed tube with two masks	47 %	47 %	58 %	58 %
Illumination depth 20 %	1540 mm	1540 mm	1540 mm	1540 mm
Illumination depth 60 %	870 mm	870 mm	870 mm	870 mm
Colour rendering index R <sub>a</sub> (type)	98	98	98	98
Colour rendering index R <sub>g</sub> (type)	99	99	99	99
Colour rendering index R <sub>13</sub> (type)	99	99	99	99
Radiation strength in the field at a at a distance of 1 m	574 W/m <sup>2</sup>	574 W/m <sup>2</sup>	574 W/m <sup>2</sup>	574 W/m <sup>2</sup>
Maximum radiation strength at a distance of 0.73 m	665 W/m <sup>2</sup>	665 W/m <sup>2</sup>	665 W/m <sup>2</sup>	665 W/m <sup>2</sup>
Relation E <sub>e</sub> /E <sub>c</sub>	3.59 (mW/m <sup>2</sup> ) /lx	3.59 (mW/m <sup>2</sup> ) /lx	3.59 (mW/m <sup>2</sup> ) /lx	3.59 (mW/m <sup>2</sup> ) /lx
Focusable light field size	19 - 30 cm	19 - 36 cm	19 - 30 cm	19 - 36 cm
Colour temperature (Kelvin)	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>	3750, 4000, 4250, 4500, 4750 <sup>b</sup>
Temperature increase in the head area	0.5 °C	0.5 °C	0.5 °C	0.5 °C
Luminous efficacy (efficiency)	279 lm/W	279 lm/W	279 lm/W	279 lm/W
Number of LEDs	96	96	96	96
Working distance	70-160 cm	70-160 cm	70-160 cm	70-160 cm
Dimming range (%)	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>	50 - 100 <sup>c</sup>
Dimming levels	5	5	5	5
Diameter of light body	66 cm	66 cm	66 cm	66 cm
Life-span of LEDs	60,000 h	60,000 h	60,000 h	60,000 h
Height adjustment	118 cm	118 cm	118 cm	118 cm

All technical data are subject to certain fluctuations. For production reasons, the actual values have a tolerance of ± 5%. The values for the colour temperature can have deviations of ± 200 K.

<sup>a</sup> According to IEC 60601-2-41 the max. intensity of illumination must not exceed 160,000 lux. Therefore, the tolerance for this value is -5%.

<sup>b</sup> Individual adjustment of colour temperature values possible on demand (adjustable range 3600-5500K) (4250 K not changeable).

<sup>c</sup> Individual adjustment of dimming range possible on demand (range 20%-100%).

**Mechanische Daten**

Joints on cardanic bows rotatable by 430° ( $\pm 215^\circ$ ), on spring arm > 360° without stop

Rotatability on ceiling tube/flange tube of single suspension: > 360° without stop

Rotatability on 2-fold standard axis:

- Lower mounting pin : > 360° without stop
- Upper mounting pin : 300° ( $\pm 150^\circ$ )

Adjustable brakes on horizontal arm and light suspension

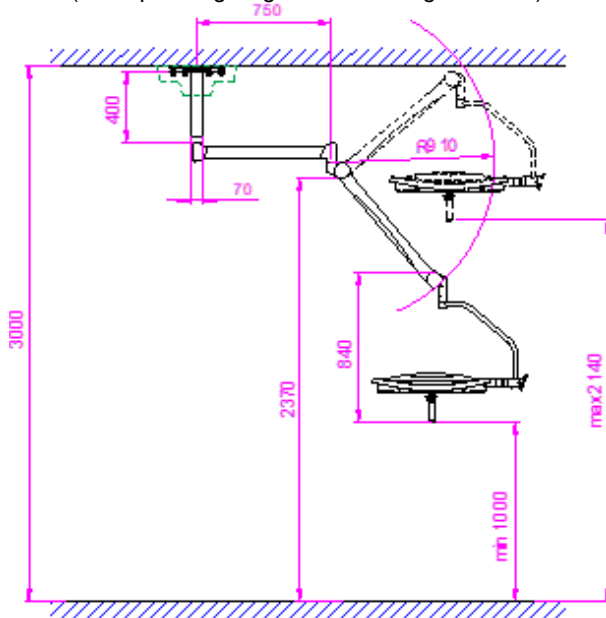
Height adjustment at full cardanic suspension:

- Spring arm Acrobat 2000: 1180 mm
- Spring arm VALiA: 1290 mm

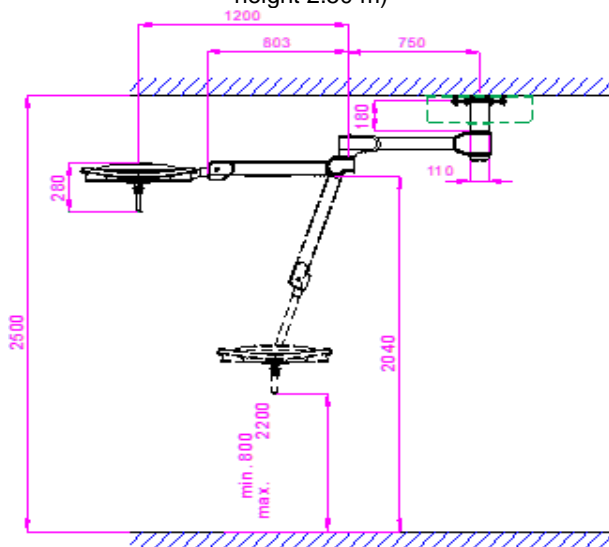
Optional version with single bow for low ceiling heights

**Technical drawings**

**Ceiling version**  
 (Example Single light at room height 3.00 m)



**Ceiling version**  
 (Example Single light with central spring arm at room height 2.50 m)



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Subject to technical modification

