1.P. Šviesos šaltinio tipas-LED

HEINE ML4 LED HeadLight

Ultra bright coaxial LEDᴴᵠ illumination

LED HQ
LED NOW IN HEINE QUALITY.

6.P. Galvinis laikiklis

:> **There's LED. And there's LEDᴴᵠ.** HEINE has set a new standard which maintains that only the best is good enough, from the selection of materials to processing, from light intensity to dimmability, and from thermal management to a colour rendering index as high as possible. **That's what we call LED in HEINE Quality – or LEDᴴᵠ.**

:> **Adjustable illumination spot size:** 30mm to 80mm spot size range (at 420mm working distance) to fit any examination situation.

:> **Bright and homogenous illumination.** Absolutely bright light spot that is uniform from edge-to-edge for the perfect illumination in all examination situations.

:> **Stepless light intensity control.** Optimal brightness setting prevents reflexes.

:> **Flexibility.** Flexible Power Source Options: 100% mobility with a choice of cable-free mPack UNPLUGGED head-worn battery or mPack belt-worn battery pack.

:> **Coaxial illumination.** Coaxial design ensures a completely shadow-free image and allows for excellent illumination of difficult to see areas.

:> **Comfortable and secure fit.** The Professional L headband has multiple adjustment points and soft padding for comfort and stability – even during long examinations.

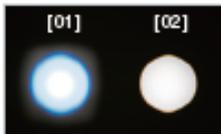:> **Optional filters.** Polarisation Filter P2 improves contrast and yellow filter reduces

9.P. Priekinės, galinės ir viršutinės dalies vidinis paminkštinimas dengtas natūralia oda

[01] [02]

Comparison of homogeneity
[01] Competitor product
[02] HEINE ML4 LED Headlight

Technical Specification	
Illumination	Typ. 90,000 Lux*
Colour Temperature	Typ. 5,500 Kelvin
LED Operating Life	Typ. 50,000 hours
Spot Adjustment	30mm to 80mm at 420mm working distance
Angle of Declination	Stepless and individually adjustable for every examination
Rheostat	Headband-mounted
Operating Time	Typ. 8.5 hours with mPack and typ. 3.5 hours with mPack UNPLUGGED of continuous ON time at full power

3.P. Šviesos ryškumas 90000 Lux
2.P. Spalvos temperatūra 5500 K
4.P. LED veikimas 50 000 valandų

12.P. Darbo laikas pilnai įkrautu akumuliatoriumi, pilnu ryškumu 3,5 val.

Power Options:

:> HEINE mPack

:> **Portable power pack.** Does not tie the user to desk, wall or static power supplies.

:> **Li-ion technology.** Triple capacity compared with current NiCd systems. No memory effect, autonomy for typ. 8.5 hours of continuous ON time at full power.

:> **Fast charge.** Charges to full capacity in typ. 2 hours.

:> **Charge status indicator.** Always lets you know how much operating charge you have left.

:> **Brightness control.** Optimal adjustment of light intensity.

:> **Flexible charging options:** EN 50 Desk and wall charger, or plug-in transformer.

:> **Intelligent.** Can be used as mains power supply even while in "charge" mode.

:> **100 – 240V compatible transformer** incl. 4 plugs for world wide compatibility.

For the optional EN 50 table/wall unit please see page 152.

10.P. Įkraunamas akumuliatorius su krovikliu   14.P. Akumuliatorius tvirtinamas prie galvinio šviestuvo galinės dalies

:> HEINE mPack UNPLUGGED. Headband-mounted rechargeable battery.

:> **Wireless.** 100% mobility for absolute freedom of movement.

:> **Rechargeable battery integrated on the headband.**

:> **Lightweight** with balanced weight distribution. High level of comfort.

:> **Charge status indicator** indicates remaining operating time.

:> **Intelligent.** Can be used as mains power supply even in "charge" mode.

:> **Fast charge.** Charges to full capacity in typ. 2 hours. Operating time typ. 3.5 hours of continuous ON time at full power.

:> **Top safety standards.** Integrated charge and performance checks during operation. Lithium polymer technology. UL compliant.

13.P. Greito įkrovimo laikas 2 val.

11.P. Akumuliatoriaus tipas-Li-ion

1

HEINE® ML4 LED HeadLight

Please read and follow these instructions for use and keep them for future reference.

Intended Use

Supplied internally with electrical power, the headlight is designed for short-term local illumination of the body, with the exception of the eyes, to support diagnosis during a therapeutic or surgical intervention.

The instrument may be used only by qualified medical personnel in a professional health facility.

For U.S. only:

⚠ Federal law restricts this device to sale by or on the order of a Physician or Practitioner.

Warnings and Safety Information

⚠ **CAUTION!** This symbol indicates potential hazardous situations. Ignoring the corresponding instructions may lead to dangerous situations of mild to moderate extent. (Background color yellow; foreground color black).

NOTE! This symbol indicates valuable advice in terms of set up, operation, maintenance or repair, as applicable. Notes are important, but not related to hazardous situations.

Setting up

Only operate the **ML4 LED** with the HEINE® mPack, the mPack UNPLUGGED or the plug transformer for the headband rheostat (Cat.No. X-095.16.330).

Take care that the cable is fastened tightly to the headband in the provided buckles (see Fig. 1).

Exposure to high mechanical strains and kinking of electrical cables on the headlights must be prevented.

Fig. 1 Safe cable routing headband ML4 LED

8.P. Galvos apimties ir aukščio reguliavimas

Adjustment of the **headband Professional L** (see Fig. 2): To adjust for the head size, the headband can be widened or tightened by turning the turnbuckles at the top (1) and the back. (2).
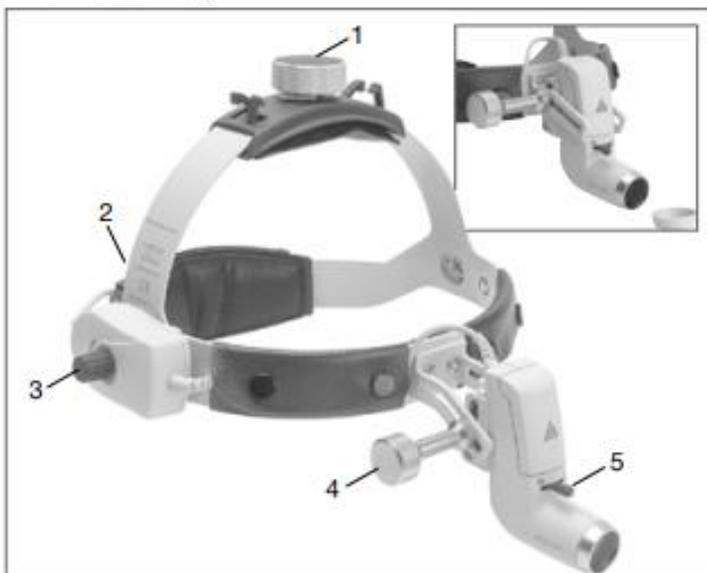

Fig. 2 Headband Professional L (see tall fig.)
optical protection cover (see small fig.)

2

HEINE Headlights

	MicroLight2	ML4 LED HeadLight	MD 1000 Headlight
Illumination	LED HQ	LED HQ	F.O.
Light intensity*	typ. 55,000 Lux	typ. 90,000 Lux	typ. 35,000 Lux with HK 7000 Projector
Colour temperature (Kelvin)	typ. 4,000 K	typ. 5,500 K	typ. 3,300 K with HK 7000 Projector
Spot size*	81 mm	30 – 80 mm	40 – 150 mm
Power sources / operating time	• mPack mini / typ. 9 hours	• mPack UNPLUGGED / typ. 3,5 hours • mPack / typ. 8,5 hours	• F.O. Projector
Weight	• 80 g with S-FRAME Spectacle Frame • 190 g with Lightweight Headband	• 260 g • 460 g with mPack UNPLUGGED	• 435 g
Angle of declination	Fully-adjustable	Fully-adjustable	Fully-adjustable
Brightness control	0 – 100%	0 – 100%	0 – 100%
Features	• Waterproof • Optional Yellow Filter • Head- or Spectacle-worn	• Adjustable Spot Size • Polarisation Filter • Expandable with HR and HRP Loupes • Head-worn	• Expandable with HR and HRP Loupes • Head-worn
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15.P. Galvinio šviestuvo svoris su akumuliatoriumi 460 g.

5.P. Šviesos ryškumo reguliavimas nuo 0 iki 100%

*Measured at a working distance of 180 mm from the light emission to the object.

Loupes & Headlights

LED ^{HQ}
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7.P. Šviesos šaltinio pozicijos/ųviesos krypties reguliavimas ir fiksavimas:

7.P. Į priekį/atgal – 35 mm

35 mm.

13 mm.

180 °

ML 4 LED HeadLight

7.P. Žemyn/aukštyn – 13 mm ir 180º