




## HEINE Headlights

	MicroLight 2	ML4 LED HeadLight	MD 1000 Headlight
			
Technical Data			
Type of Light	LED	LED	F.O.
Light Intensity	typ. 55,000 Lux	typ. 65,000 Lux	typ. 35,000 Lux with HK 7000 Projector
Colour Temperature (Kelvin)	typ. 4,000K	typ. 4,500K	typ. 3,300K with HK7000 Projector
Spot Size (at 420mm working distance)	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 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			
Adjustable Spot Size	--	<input type="checkbox"/>	<input type="checkbox"/>
Waterproof	<input type="checkbox"/>	--	--
Optional Yellow Filter	<input type="checkbox"/>	<input type="checkbox"/>	--
Polarisation Filter	--	<input type="checkbox"/>	--
Expandable with HR and HRP Loupes	--	<input type="checkbox"/>	<input type="checkbox"/>
Optional Video Version	--	<input type="checkbox"/>	--
Head-worn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spectacle-worn	<input type="checkbox"/>	--	--
Page	132 – 133	134 – 137	138

## HEINE® MicroLight 2

Compact LED<sup>HQ</sup> Headlight – now even brighter

**LED<sup>HQ</sup>**  
LED NOW IN HEINE QUALITY.

**EXCLUSIVELY AT HEINE**

- Compact and Lightweight
- Coaxial Illumination
- Typ. 55,000 Lux

- ✦ 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.

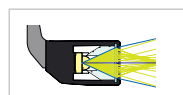
**That's what we call LED in HEINE Quality – or LED<sup>HQ</sup>.**

- ✦ **Compact and lightweight.** Ensures perfect comfort.
- ✦ **Aluminium Housing.** Exclusive aluminium housing protects the optics against dust and moisture to ensure an extraordinary long lifespan and optimal thermal management.
- ✦ **Coaxial illumination:** Compact coaxial design ensures a completely shadow-free image and allows for excellent illumination of difficult to see areas.
- ✦ **Homogeneity:** An absolutely bright light spot that is uniform from edge-to-edge for the perfect illumination in all examination situations.
- ✦ **Replaceable connecting cord** with high-quality splashproof threaded connector with a length of 1.5m. Connects the MicroLight 2 with the mPack mini.
- ✦ **Incl. coloured attachment clips for personalisation.** To fixate the cable on the S-FRAME and to identify your headlight.

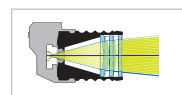
## Technical Specification

Illumination	<b>Typ. 55 000 Lux</b>
Colour Temperature	<b>Typ. 4 000 Kelvin</b>
LED Operating Life	<b>Typ. 50 000 hours</b>
Weight	80g together with S-FRAME, 190g together with Lightweight Headband
Angle of Declination	Stepless and individually adjustable for every examination
Operating Time	<b>Typ. 9h with mPack mini</b> (in continuous operation at full power typ. 4 hours)

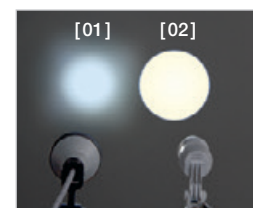
- ✦ **Precision multiple lens optical system** consisting of four high-quality lenses. Completely homogeneous illumination of the whole field of view, and a clearly defined light spot.



Conventional System [01]



HEINE Precision 4-Lens System [02]



Comparison of homogeneity

## Mounting Options:

## ✦ HEINE S-FRAME

- ✦ **Maximum comfort** with a modern, ergonomic design.
- ✦ **Malleable temples and nose pad.** Can be customized to fit any face perfectly.
- ✦ **Innovative materials** – Carbon-Kynetium reduces weight (80g together with MicroLight 2).
- ✦ **Tough polycarbonate protective lenses.**

## ✦ HEINE® Lightweight Headband

- ✦ **Lightweight** (190g together with MicroLight 2.) Ideal for spectacle wearers.
- ✦ **Fully-adjustable for width to fit any head.**
- ✦ **Hygienic and comfortable leather cushions.**



## HEINE® mPack mini

### Compact and lightweight power source for LoupeLight 2 / MicroLight 2



#### EXCLUSIVELY AT HEINE

- Operating time typ. 9 hours
- Stepless light intensity control
- Compact and lightweight



NEW

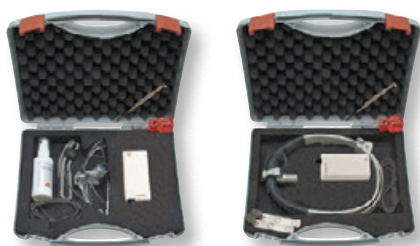


[01]

- ✦ **Freedom from cables** that tie the user to desk, wall or static power supplies.
- ✦ **Operating time typ. 9 hours.** In continuous operation at full power typ. 4 hours.
- ✦ **Charging time typ. 4 hours.**
- ✦ **Charge status indicator.** Display of remaining battery power with three LEDs. The flashing of the last LED indicates that immediate charging is required. During charging the LEDs light up one after the other.
- ✦ **Stepless light intensity control.** Optimum brightness setting between 100% and 3% reduces reflexes.
- ✦ **USB cord** with E4-USB Medical approved plug-in power supply.
- ✦ **The integrated galvanic separation module** protects the battery and the user against the consequences of defective power supplies, thus preventing the possibility of the full mains voltage flowing directly to the housing. We recommend the use of a medical approved plug-in power supply.
- ✦ **Simple cleaning.** Closed housing, no seams at the sides, few edges.
- ✦ **Compact and lightweight.** With a weight of just 95g and dimensions of 44 x 23 x 101mm the power source can be easily stowed.
- ✦ **NEW: Optimised mPack mini belt clip** for easy attachment of the power source to the belt or coat pocket. The mPack mini can also be charged in the belt clip [01].
- ✦ **Li-ion technology.** No "memory effect", without worrying about charge level or battery condition.
- ✦ **Integrated rechargeable battery.** Can be exchanged at authorised specialist dealers.

## HEINE® MicroLight 2

### Ordering Information



[01]

[02]

[03]

[04]

[05]

#### MicroLight 2

on S-FRAME with mPack mini, mPack mini Belt Clip, E4-USB plug-in transformer with USB cord, connecting cord, retaining cord and cleaning fluid in case [01]

J-008.31.276

on Lightweight Headband with mPack mini, mPack mini Belt Clip, E4-USB plug-in transformer with USB cord, connecting cord, in case [02]

J-008.31.277

Detachable Yellow Filter [03]

C-000.32.241

Connecting cord SC 1 (1,5m/Ø 2,4mm) for MicroLight 2 / mPack mini [04]

C-000.32.240

Connecting cord SC 2 (1,5m/Ø 3,2mm) for MicroLight 2 / mPack mini [05]

C-000.32.243

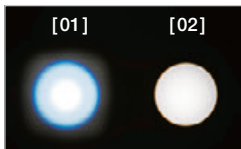
## HEINE® ML 4 LED HeadLight

Ultra bright coaxial LED<sup>HQ</sup> illumination
**LED<sup>HQ</sup>**  
 LED NOW IN HEINE QUALITY.


✦ Comfortable and secure fit

✦ Adjustable spot size

✦ Flexible power source options



**Comparison of homogeneity**  
 [01] Competitor product  
 [02] HEINE ML 4 LED HeadLight

- ✦ 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 LED<sup>HQ</sup>.**

- ✦ **Adjustable illumination spot size:** 30 mm to 80 mm spot size range (at 420 mm 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 blue light.

## Technical Specification

Illumination	Typ. 65,000 Lux*
Colour Temperature	Typ. 4,500 Kelvin
LED Operating Life	Typ. 50,000 hours
Spot Adjustment	30 mm to 80 mm at 420 mm 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

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

## 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:** EN50 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 EN50 table/wall unit please see page 149.



## ✦ 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.

## HEINE® ML4 LED HeadLight

## Ordering Information

LED

LED NOW IN HEINE QUALITY.



[01]



[02]



[03]



[04]



[05]



[06]



[07]



[08]



[09]

## ML4 LED HeadLight with Headband Professional L and Power Sources

ML4 LED HeadLight without power source [01]	J-008.31.410
ML4 LED HeadLight with plug-in transformer [01] + [02]	J-008.31.411
ML4 LED HeadLight with mPack and plug-in transformer [01] + [03]	J-008.31.413
ML4 LED HeadLight with mPack UNPLUGGED and plug-in transformer UNPLUGGED [01] + [04]	J-008.31.415
ML4 LED HeadLight with wall mounted EN50 UNPLUGGED Charger and 2x mPack UNPLUGGED [01] + [05]	J-008.31.416

Power supplies may deviate in size and shape.

## ML4 LED HeadLight accessories

Detachable Yellow Filter [06]	J-000.31.321
Extension cord from plug-in transformer UNPLUGGED to mPack UNPLUGGED, 2m [07]	X-000.99.668
Polarisation Filter P2 for ML4 LED and HR Loupes [08] + [09]	J-000.31.326
Spare Polarisation Filter P2 for HR Loupes (2 pairs) [09]	C-000.32.536

## HEINE® ML4 LED HeadLight with HR/HRP Optics



The ML4 LED HeadLight is optionally supplied with HR/HRP Binocular Loupes incl. i-View loupe mount and with or without S-GUARD. The binocular loupe is fully adjustable for every examiner and for every examination axis.

- **HEINE S-GUARD:** Rapid and simple symmetric adjustment of binocular loupes with splash protection by protective lenses.
- **HEINE i-View for ML4 LED HeadLight:** Provides any angle of view and flips up the optics independently of the illumination beam.



## ML4 LED HeadLight Kits with S-GUARD and Power Source

The following Kits contain: ML4 LED HeadLight on Professional L headband, HR/HRP optics with i-View and S-GUARD, mPack and plug-in transformer [01], Cleaning Fluid [02]

Kit 1:	with <b>HR</b> Binocular Loupe	2.5x/340mm	<b>J-008.31.440</b>
Kit 2:	with HR Binocular Loupe	2.5x/420mm	<b>J-008.31.441</b>
Kit 11:	with HR Binocular Loupe	2.5x/520mm	<b>J-008.31.450</b>
Kit 3:	with <b>HRP</b> Binocular Loupe	3.5x/420mm	<b>J-008.31.442</b>
Kit 4:	with HRP Binocular Loupe	4x/340mm	<b>J-008.31.443</b>
Kit 5:	with HRP Binocular Loupe	6x/340mm	<b>J-008.31.444</b>



## ML4 LED HeadLight Kits with Power Source without S-GUARD

The following Kits contain: ML4 LED HeadLight on Professional L headband, HR/HRP optics with i-View, mPack and plug-in transformer [01]

Kit 1c:	with <b>HR</b> Binocular Loupe	2.5x/340mm	<b>J-008.31.452</b>
Kit 2c:	with HR Binocular Loupe	2.5x/420mm	<b>J-008.31.453</b>
Kit 11c:	with HR Binocular Loupe	2.5x/520mm	<b>J-008.31.463</b>
Kit 3c:	with <b>HRP</b> Binocular Loupe	3.5x/420mm	<b>J-008.31.454</b>
Kit 4c:	with HRP Binocular Loupe	4x/340mm	<b>J-008.31.456</b>
Kit 5c:	with HRP Binocular Loupe	6x/340mm	<b>J-008.31.457</b>



## ML4 LED HeadLight UNPLUGGED Kits with S-GUARD and Power Source

The following Kits contain: ML4 LED HeadLight on Professional L headband, HR/HRP optics with i-View and S-GUARD, Wall Transformer EN50 UNPLUGGED [03], 2x mPack UNPLUGGED, Cleaning Fluid [02]

Kit 6:	with <b>HR</b> Binocular Loupe	2.5x/340mm	<b>J-008.31.445</b>
Kit 7:	with HR Binocular Loupe	2.5x/420mm	<b>J-008.31.446</b>
Kit 12:	with HR Binocular Loupe	2.5x/520mm	<b>J-008.31.451</b>
Kit 8:	with <b>HRP</b> Binocular Loupe	3.5x/420mm	<b>J-008.31.447</b>
Kit 9:	with HRP Binocular Loupe	4x/340mm	<b>J-008.31.448</b>
Kit 10:	with HRP Binocular Loupe	6x/340mm	<b>J-008.31.449</b>



## ML4 LED HeadLight UNPLUGGED Kits with Power Source without S-GUARD

The following Kits contain: ML4 LED HeadLight on Professional L headband, HR/HRP optics with i-View, Wall Transformer EN50 UNPLUGGED [03], 2x mPack UNPLUGGED

Kit 6c:	with <b>HR</b> Binocular Loupe	2.5x/340mm	<b>J-008.31.458</b>
Kit 7c:	with HR Binocular Loupe	2.5x/420mm	<b>J-008.31.459</b>
Kit 12c:	with HR Binocular Loupe	2.5x/520mm	<b>J-008.31.464</b>
Kit 8c:	with <b>HRP</b> Binocular Loupe	3.5x/420mm	<b>J-008.31.460</b>
Kit 9c:	with HRP Binocular Loupe	4x/340mm	<b>J-008.31.461</b>
Kit 10c:	with HRP Binocular Loupe	6x/340mm	<b>J-008.31.462</b>



## HR/HRP Binocular Loupes – Retrofitting Sets

## For HEINE ML4 LED HeadLight



Pos. 1



[01]



Pos. 2



[02]

## Retrofitting Set HR/HRP Binocular Loupes for ML4 LED HeadLight

The sets enable you to equip your existing ML4 LED HeadLight with a binocular loupe. The set contains HR/HRP optics with i-View, S-GUARD splash protection and cleaning fluid [01]

with <b>HR</b> Binocular Loupe	2.5x/340mm	<b>J-000.31.370</b>
with HR Binocular Loupe	2.5x/420mm	<b>J-000.31.371</b>
with HR Binocular Loupe	2.5x/520mm	<b>J-000.31.365</b>
with <b>HRP</b> Binocular Loupe	3.5x/420mm	<b>J-000.31.372</b>
with HRP Binocular Loupe	4x/340mm	<b>J-000.31.373</b>
with HRP Binocular Loupe	6x/340mm	<b>J-000.31.374</b>

5 Sterilisable Swivel Levers for i-View loupe mount for ML4 LED HeadLight [02]

**C-000.32.399**

## Power Sources



[01]



[02]



[03]

mPack and plug-in transformer [01]	<b>X-007.99.672</b>
Plug-in transformer for ML4 LED HeadLight [02]	<b>X-095.16.330</b>

mPack with EN50 Table/Wall Unit (incl. 90° Angled Adaptor, instrument support for Professional L Headband) [03]

**X-095.17.302**

Power supplies may deviate in size and shape



## HEINE® MD 1000 Fiber Optic (F.O.) Headlight



- ✦ **Compact, high-tech optics** for homogeneous, coaxial, exceptionally-bright illumination.
- ✦ **Ultra-light, highly-flexible fiber optic cable** with gown clips, length 3m.
- ✦ **Height and angle of illumination adjustable by a single control.**
- ✦ **Lightweight, flexible Headband Professional L:** Adjustable for height and width with detachable soft leather forehead cushion.
- ✦ **Adjustable light spot** with sterilizable lever.
- ✦ **Can be combined with HEINE HR and HRP Binocular Loupes** for magnification from 2.5x – 6x.
- ✦ **Can be fitted with a CCD camera.**
- ✦ **Light source: HK 7000 F.O. Projector\*.**

## Technical Specification

Illumination	Typ. 35,000 Lux with HK 7000 F.O. Projector at a working distance of 250 mm
Colour Temperature	Typ. 3,300 Kelvin with HK 7000 F.O. Projector
Light Source	HK 7000 F.O. Projector
Spot Adjustment	Adjustable spot size from <b>20 mm to 70 mm</b> at a distance of 200 mm and <b>45 mm to 180 mm</b> at a distance of 500 mm
Angle of Declination	Individually-adjustable
Brightness control	Stepless light intensity control on Light Source

## MD 1000 F.O. Headlight

with Headband Professional L *	J-003.31.231
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## HEINE® MD 1000 F.O. Headlight with HR/HRP Optics

The MD 1000 is optionally supplied with HR/HRP Binocular Loupes including i-View loupe mount and S-GUARD. The binocular loupe is fully-adjustable for every examiner and for every examination axis.

- ✦ **HEINE S-GUARD:** Rapid and simple symmetric adjustment of binocular loupes with splash protection by protective lenses.
- ✦ **HEINE i-View:** Provides any angle of view and flips up the optics independently of the illumination beam.



## MD 1000 F.O. Headlight with HR/HRP Binocular Loupes

The following order numbers include: MD 1000 F.O. Headlight, HR/HRP optics with i-View and S-GUARD, Cleaning Fluid \*

Kit 1: with <b>HR</b> Binocular Loupe 2.5x / 340mm	J-003.31.245
Kit 2: with HR Binocular Loupe 2.5x / 420mm	J-003.31.246
Kit 3: with <b>HRP</b> Binocular Loupe 3.5x / 420mm	J-003.31.247
Kit 4: with HRP Binocular Loupe 4x / 340 mm	J-003.31.248
Kit 5: with HRP Binocular Loupe 6x / 340 mm	J-003.31.249

5 Sterilisable Swivel Levers for i-View loupe mount	C-000.32.399
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