

NEURO ENDOSCOPY

ZEPPELIN
MEDICAL TECHNOLOGY

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Neuro Endoscopy

Neuroendoscopy is established with its own different indications and minimally invasive techniques with always new technological demands in adequate instrumentation and in situ visualisation.

The neuroscopes have been designed to assist neurosurgery:

- they complete micro-neurosurgical techniques
- they allow a view of the angles of the central nervous system which cannot be provided by the microscope
- they logically complete neuro-navigation
- they help optimising approaches and minimise retraction
- they provide image information at the standard of surgical microscopes

The Zeppelin neuroscopes and instruments meet the demands and expectations of modern neurosurgery. They offer a new dimension in visualisation and allow a perfect view in areas where the microscope cannot see. They provide image information at the standard of microscopes with an optimum of ergonomic design features and instrumentation in order to facilitate neuro-endoscopic diagnosis and treatment and increase surgical safety.

Zeppelin offers the complete range of endoscopes for neurosurgical applications.



	NEUROSCOPE acc. to F. Duffner	NEUROSCOPE acc. to V. Urban	CRANIOSCOPE
3rd Ventriculostomy	✓	✓	*
Cystoscopy	✓	✓	*
Hypophysectomy	✓	*	*
Ventricular Tumors	✓	✓	*
Endoscope assisted Craniotomy	✓	*	✓
Lumbar Discectomy	*	*	*
Ventral Discectomy	✓	*	*
Diagnostic Endoscopy	*	*	✓
Haematoma Evacuation	*	*	*

HAEMATOSCOPE

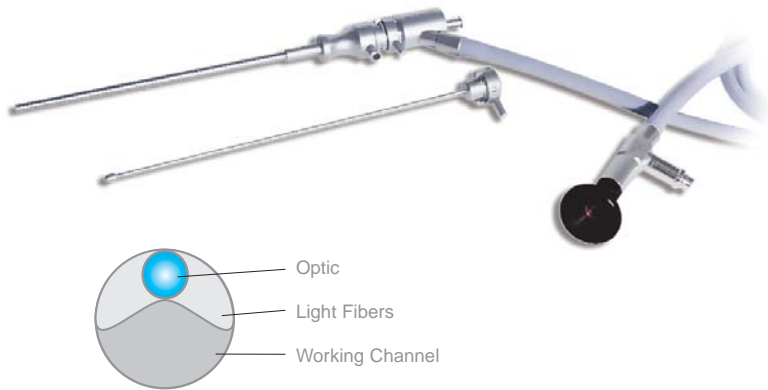
VIEWING DISSECTOR

VERTEBROSCOPE
acc. to V. Urban

FLEXIBLE NEUROSCOPE

✓	*	*	*
✓	*	*	*
✓	*	*	*
✓	*	*	*
*	✓	*	*
*	*	✓	*
*	*	*	*
*	*	*	✓
✓	*	*	*

Indications



NFD 0-120-5 NEUROSCOPE

Features:

- * lightweight, balanced and autoclavable
- * straight working channel
- * ergonomic sterility barrier
- * unsurpassed fiber optic provides 30.000 pixel
- * best and easy instrument access

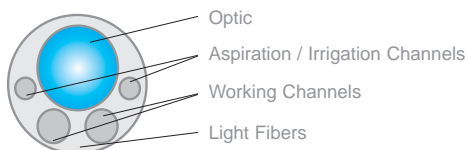
Technical Data:

- * viewing angle 0°
- * viewing width 80°
- * outer shaft diameter 5.0 mm
- * working channel diameter 4.0 x 2.0 mm
- * total working channel length 240 mm
- * working length 170 mm

Neuroscope *acc. to F. Duffner*

This new endoscope has been designed for intracranial endoscopy where a small outer diameter and a large working channel is requested.

It has been designed with a new fiber technology with over 30.000 fibers for outstanding image information. The balance and lightweight design features allow easy handhold control during use. The large working channel offers an excellent access for surgical instruments such as scissors, grasping and biopsy forceps, bipolar and monopolar probes, balloon catheters or others with an outer diameter of < 2.0 mm. It has been designed for its primary use in head diagnosis and surgical treatment, i.e. 3rd ventriculostomy, cystoscopy, ventricular tumors, hypophysectomy etc. The camera and lightsource connections are in a non-sterile distance thus enabling its immediate use without sterile cover sleeves.



NEV 0-177-6 NEUROSCOPE

Features:

- * excellent rod lens image quality
- * 2 working channels
- * 2 aspiration / irrigation channels
- * balance point
- * autoclavable

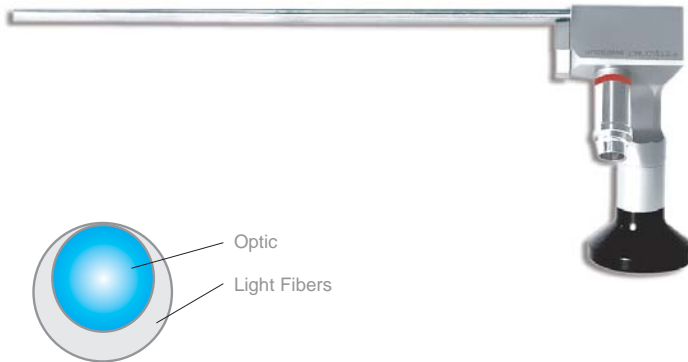
Technical Data:

- * viewing angle 0°
- * viewing width 80°
- * outer shaft diameter 6.0 mm
- * working length 177 mm
- * optical diameter 2.87 mm
- * 1.1 mm working channels

Neuroscope *acc. to V. Urban*

The Neuroscope has been designed for minimal invasive cranial endoscopy, i.e. ventriculostomy, cystoscopy and other neuroendoscopic indications where the very best image information is requested.

The outstanding image illumination with less energy delivers superb tissue structure information and the rod lens system guarantees brilliant image quality and sharpness. With two parallel straight 1.0 mm working channels it is an ideal tool for neuro endoscopic microsurgery. The ergonomic balance point design enables easy endoscope guidance and control in situ.



NEC 30-170-4 CRANIOSCOPE

Features:

- * unsurpassed rod lens image quality
- * hindrance free additional vision
- * low profile design

Technical Data:

- * viewing angle 30°
- * viewing width 80°
- * optical diameter 2.87 mm
- * outer diameter 4.0 mm without irrigation sleeve
- * outer diameter 5.0 mm with irrigation sleeve
- * working length 170 mm

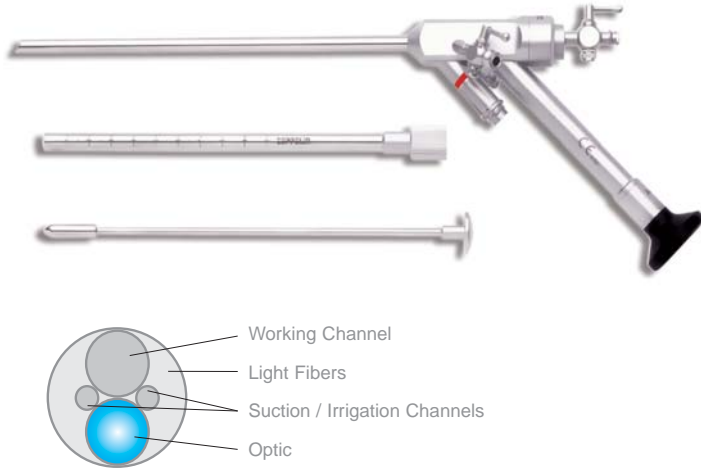
Cranioscope

The Cranioscope has been designed for endoscope assisted craniotomy and spine surgery.

The very unique Zeppelin rod lens technology delivers brilliant and unsurpassed image information and quality in order to improve surgical safety. The 30° viewing angle allows a perfect view of the surgical area where the microscope cannot see. Its design enables free microscopic vision to the surgical field and a hindrance free access for handheld microsurgical instruments. The Cranioscope can be used with or without irrigation sleeve.

THE HAEMATOSCOPE

Innovative Medical Technology



NEH 30-177-6.5 HAEMATOSCOPE

Features:

- * brilliant image quality
- * excellent light transmission
- * balance point safety
- * autoclavable

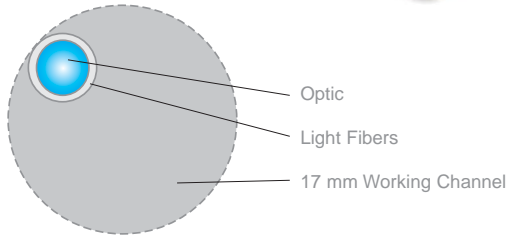
Technical Data:

- * viewing angle 30°
- * viewing width 80°
- * optical diameter 2,87 mm
- * shaft diameter 6.5 mm
- * guide diameter 7.5 mm
- * working channel diameter 2.8 mm
- * suction / irrigation channels 1.0 mm
- * working length 167 mm

Haematoscope

The Haematoscope has been designed for neuro endoscopic surgery where a large working channel and best image information is requested.

The balance point design enables perfect handling and control. The rod lens technology and low energy illumination with a maximum of fibers and a minimum of energy delivers brilliant image information and quality.



VER 30-90-17 VERTEBROSCOPE

Features:

- * variable working direction
- * self retaining - autoclavable
- * 360° dome vision
- * easiest instrument access
- * unsurpassed illumination - brilliant rod lens images

Technical Data:

- * viewing angle 30°
- * viewing width 80°
- * optical diameter 2.87 mm
- * outer shaft diameter 18 / 19 mm
- * working channel diameter 17 mm
- * working channel length variation 112.7 - 131.5 mm
- * disc diameter 120 mm

Vertebroscopy *acc. to V. Urban*

The Vertebroscopy has been designed for minimal invasive lumbar discectomy.

A minimal 2.5 mm skin incision, a rapid and safe access to the spine and excellent mobility in situ enable a less traumatic lumbar discectomy with fast recovery. The rod lens technology provides brilliant image quality and information. Its dome vision from different directions allows an excellent view of the anatomical structures. Its use without rigid fixation during surgery allows utmost mobility and flexibility. An useful set of instruments has been developed to be used together with the Vertebroscopy and improve surgical safety.

THE FLEXIBLE NEUROSCOPE

Innovative Medical Technology



FNS 0-600-3.0 FLEXIBLE NEUROSCOPE

Features:

- * plasma and gas sterilizable
- * more light and better image
- * ultra dense optic fibers
- * flexible and steerable
- * repair advantages

Technical Data:

- * viewing angle 0°
- * viewing width 70°
- * steerable 90°
- * 2 working channels 1.2 and 0.6 mm
- * scope diameter 3.0 mm (9Fr.)
- * working length 600 mm
- * 9.000 real pixel image

Flexible Neuroscope

This flexible neuroscope has an ultra dense fiberoptic technology with 9.000 pixels.

It has been designed flexible with a steering mechanism for its tip movements. Two channels can be used as working channels for instruments, irrigation and aspiration.



VDI 0-180-1 VIEWING DISSECTOR

Features:

- * compatible and autoclavable
- * easy instrument orientation
- * excellent fiber optic images

Technical Data:

- * viewing angle 0°
- * viewing width 60°
- * optical diameter 1.0 mm
- * instrument length 180 mm
- * total length 100 cm

Viewing Dissector

With the Viewing Dissector anatomical locations can be visualized where a microscope cannot see.

It has been designed for endoscope assisted micro-craniotomy. Its new fiber technology with 9.000 pixels delivers an excellent image information. This fiberscope is integrated in the "Zeppelin Micro Dissector" design thus enabling best balance and a precise and relaxed handhold during surgery. The Viewing Dissector is ideal for additional image information during surgery in very narrow anatomical locations. The camera and lightsource connections are in a non-sterile distance thus enabling its immediate use without sterile cover sleeves.

Rigid instruments for endoscopy. Diameter 1.0 mm:

ZNE-118 S	Biopsy Forceps with irrigation channel working length 290 mm
ZNE-130 S	Grasping Forceps with irrigation channel working length 290 mm
ZNE-121 S	Micro Scissors with irrigation channel working length 290 mm
ZNE-141 BIP	Bipolar Ring Coagulation Probe working length 305 mm
ZNE-142 BIP	Bipolar Tip Coagulation Probe working length 305 mm
ZNE-150 MON	Monopolar Coagulation Probe working length 305 mm
ZNE-120602 FG	Balloon Catheter working length 305 mm
ZNE-101	Cleaning Probe / Perforator 350 mm

Flexible instruments for endoscopy. Diameter 1.0 mm:

ZNF-118	Biopsy Forceps 1355 mm
ZNF-130	Grasping Forceps 1355 mm
ZNF-141 BIP	Bipolar Ring Coagulation Probe
ZNF-142 BIP	Bipolar Tip Coagulation Probe
ZNF-250 MON	Monopolar Coagulation Probe

Rigid instruments for endoscopy. Diameter 2.0 mm:

ZNE-218 S	Biopsy Forceps with irrigation channel working length 290 mm
ZNE-230 S	Grasping Forceps with irrigation channel working length 290 mm
ZNE-221 S	Micro Scissors with irrigation channel working length 290 mm
ZNE-241 BIP	Bipolar Ring Coagulation Probe working length 305 mm
ZNE-242 BIP	Bipolar Tip Coagulation Probe working length 305 mm
ZNE-250 MON	Monopolar Coagulation Probe working length 305 mm

The Zeppelin Endoscopic Instruments are made for Zeppelin Endoscopes with working channels.

Endoscopic Instruments

DSS-001	Trocar and Sleeve Set	VER-KA3	Zeppelin Kerrison, 40° angled, 3.0 mm jaw, total shaft length 200 mm
BDL-001	Blunt Dilator	VER-KA4	Zeppelin Kerrison, 90° angled, 2.0 mm jaw, total shaft length 200 mm
BDR-001	Muscle Retractor	VER-KA5	Zeppelin Kerrison, 90° angled, 3.0 mm jaw, total shaft length 200 mm
VER-BF1	HF Bipolar Forceps, bayonet, 1.2 mm jaw, straight tip, total length 160 mm	VER-KA6	Zeppelin Kerrison, 40° angled, 4.0 mm jaw, total shaft length 200 mm
VER-BF2	HF Bipolar Forceps, bayonet, 1.2 mm jaw, angled tip, total length 160 mm	VER-KA7	Zeppelin Kerrison, 90° angled, 4.0 mm jaw, total shaft length 200 mm
VER-BTL	Balltip Dissector, 90° angled, 1.5 mm long ball tip, total length 270 mm	VER-KA8	Zeppelin Kerrison, 40° angled, 5.0 mm jaw, total shaft length 200 mm
VER-BTS	Balltip Dissector, 90° angled, 1.5 mm short ball tip, total length 270 mm	VER-MPA	Micro Pituitary, upbiting, 2.0 mm jaw, total shaft length 180 mm
VER-CA3	Zeppelin Ring Curette, 3.0 x 7.0 mm jaw, 45° upwards angled, total length 270 mm	VER-MPS	Micro Pituitary, straight, 2.0 mm jaw, total shaft length 180 mm
VER-CA4	Zeppelin Ring Curette, 45° upwards angled, 4.2 mm, total length 270 mm	VER-NHL	Nerve Hook Dissector, handle 8.0 mm, 90° angled, 9.0 mm, total length 270 mm
VER-CR3	Zeppelin Ring Curette, 45° angled, 3.0 x 7.0 mm jaw, 90° downwards angled, total length 270 mm	VER-NHS	Nerve Hook Dissector, handle 8.0 mm, 90° angled, 6.0 mm, total length 270 mm
VER-CR4	Zeppelin Ring Curette, 90° downwards angled, 4.2 mm, total length 270 mm	VER-NRR	Nerve Root Retractor, 5.0 mm tip, total length 270 mm
VER-CS3	Zeppelin Ring Curette, straight, 3.0 x 7.0 mm jaw, total length 270 mm	VER-PA1	Zeppelin Pituitary, upbiting, 2.2 mm jaw, upwards angled, total shaft length 180 mm
VER-CS4	Zeppelin Ring Curette, straight, 4.2 mm, total length 270 mm	VER-PA2	Zeppelin Pituitary, 3.0 mm jaw, upwards angled, total shaft length 180 mm
VER-KA2	Zeppelin Kerrison, 40° angled, 2.0 mm jaw, total shaft length 200 mm	VER-PF1	Zeppelin Penfield, 2.5 mm, curved tip, total length 270 mm

A selection of instruments has been designed with the expertise of surgeons who have performed hundreds of cases with “The Vertebroscop System.”

THE VERTEBROSCOPE INSTRUMENTS

Innovative Medical Technology

VER-PF2 Zeppelin Penfield, 2.5 mm, 90° angled tip, total length 270 mm

VER-PF3 Zeppelin Penfield, handle 8.0 mm, slightly curved tip, width 6.0 mm, total length 270 mm

VER-PF4 Zeppelin Penfield, handle 8.0 mm, 90° angled, 7.5 mm, width 6.0 mm, total length 270 mm

VER-PS1 Zeppelin Pituitary, straight, 2.1 mm jaw, total shaft length 180 mm

VER-PS2 Zeppelin Pituitary, straight, 3.0 mm jaw, total shaft length 180 mm

VER-PS3 Zeppelin Pituitary, straight, 4.0 mm jaw, total shaft length 180 mm

VER-PS5 Zeppelin Pituitary, straight, 5.0 mm jaw, total shaft length 180 mm

VER-SCL Zeppelin Scalpel, sharp, total length 270 mm

VER-SR1 Zeppelin Suction Retractor, 3.6 mm, with 2.0 mm hook end, total length 245 mm

VER-SR2 Zeppelin Suction Retractor, 3.0 mm, with 1.5 mm hook end, total length 245 mm

RECOMMENDED ORIGINAL ZEPPELIN EQUIPMENT:

CSR-001 Circular Spine Retractor acc. to Tresserras

BIP 8007 HF Bipolar Precision Generator

BIP 845 Bipolar Cable 3 m



Vertebroscopy Instruments

CF 18/2 NEUROCAM

Features:

- * color CCD camera - microprocessed
- * c-mount adaption - compatible with most current endoscopes

Technical Data:

- * **CCD Sensor** 752 x 582 pixel 480 TV Lines - PAL / Composite
- * **Safety Standard** IEC 601
- * **Shutter** 1/50...1/15600 sec
- * **Illumination** min. 2 LUX (F1.2)
- * **Environment Temperature** -10°C...+50°C
- * **A/C** 110...240 V, 50...60 Hz
- * **Power** ~30 W 2 x 0.4 AT (250 VAC)
- * **Box Dimension / Weight** 25.5 x 9.5 x 31.5 cm / 3.15 kg
- * **Camera Head Dimension / Weight** 27 x 27 x 86 mm / 150 g



Other One and Three-Chip Cameras on demand.

Neurocam

LS 9400 NEUROLIGHT

Features:

- * coldest XENON Light
- * beautiful true colors - highly intensive illumination

Technical Data:

- * Voltage 115 / 230 V
- * Power 100...300 W
- * Humidity 10...80 %
- * Temperature < 40°C
- * Frequency 50...60 Hz



Other Lightsources with different power output on demand.

Neurolight



TROLLY 1000.05 ENDOSCOPY TROLLY

Features:

- * stable storage
- * adjustment of directions and inclinations
- * integrated accessories storage
- * quick release roller wheels
- * removable rear wall

Endoscopy Trolley

The Trolley-Tower has been designed for stable storage during and after surgery.

The top-plate for the monitor allows an adjustment in various directions and inclinations. There is a drawer integrated for accessories storage. The Trolley-Tower does not include any of the equipment shown in the picture. Trolley 1000.05 without monitor, camera, lightsour-
ce, bipolar unit and cables, only. Removable rear wall, inclinable monitor surface, quick release roller wheels.

Lightcable / Lightsource:

E.8000.01 STORZ

E.8002.03 HSW

E.8003.05 ACM

E.8006.11 OLYMPUS

E.8005.15 VOLPI



All adapters are available.

Fiber Optic Light Cable with universal adapters:

FLC 1800



Endoscopic Accessories

NEURO ENDOSCOPY

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MEDICAL TECHNOLOGY

Please contact us for detailed information and support.

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We are looking forward to assist.

The Zeppelin Medical Technology Team.

