

# BIPOL



**TECHNICAL ENDOSCOPES  
LIGHTING & VIDEO**

**2024**

# BIPOL

Quality, Service, Expertise since 1971

## About us

Bipol is a family business founded in 1971. Initially specializing in the sector of polishing and finishing products for the anodizing and surface treatment industry, we have specialized in the field of technical endoscopy since 1991, in order to meet growing demand. We are one of the first French companies to distribute industrial video endoscopes.

Our main sectors of activity :

- Aerospace
- Airspace
- Automotive & Transports
- Industrial process
- Infrastructures
- Nuclear & energy production
- Quality control
- R&D
- Security forces



## CUSTOMER SERVICE

Quick products availability. Demo units can be sent for testing before any purchase. Bipol offers on-site repairs and personalized quotes established on a case-by-case basis.



## PARTNERS

Our network is made up of experts selected for their know-how and professionalism. It offers you local product support and customer service.



## QUALITY COMMITMENTS

Bipol strives to deliver the highest level of service, based on regulations and standards.



Qualitas Veritas  
ISO 14001-2015



Qualitas Veritas  
ISO 9001-2015



Qualitas Veritas  
ISO 45001-2018



## AMONG OUR CUSTOMERS

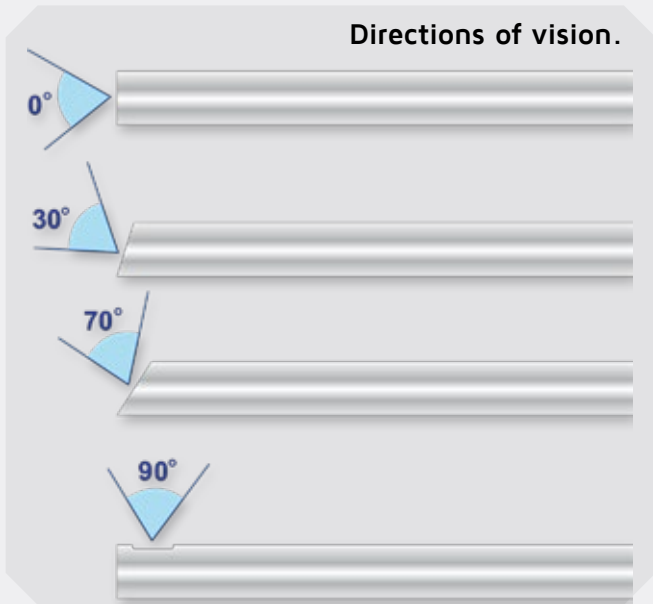
Westinghouse ZF framatome

arianegroup THALES AIRBUS

SAFRAN Dassault Aviation EDF



Range of industrial endoscopes with large field of view offering excellent optical quality both for direct inspection with the naked eye and for video documentation. Standard connection. Adapters of all brands available.

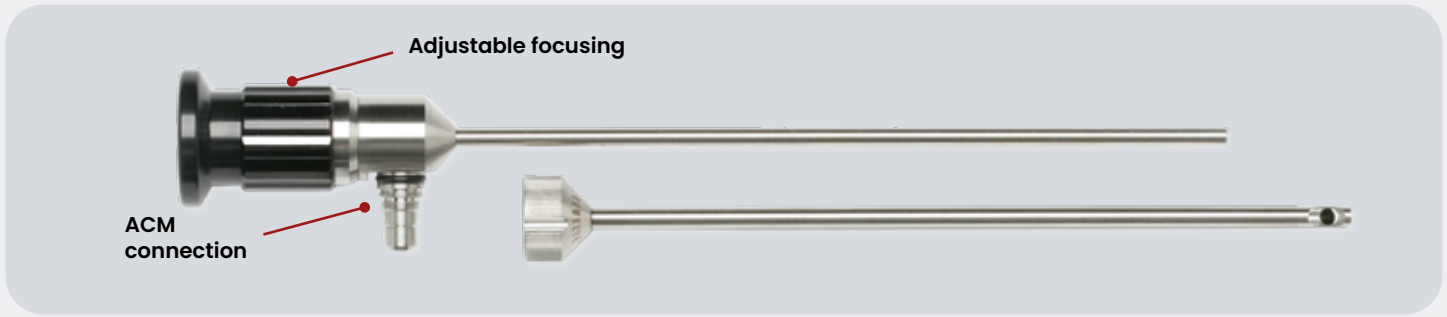


- Recommended for endoscopy video applications.
- Outer tube, body and light guide connector in stainless steel.
- Standard ISO 32mm ocular.
- Bending resistance thanks to the construction system.
- Very important depth of field.
- Clear image from 1mm to infinity.
- Large field of view that allows forward and side vision.
- Resistance to fuels, oils, water and most industrial solvents.
- Working temperatures: - 40°/121°C.
- Resist to 3bar pressure.
- Light connector compatible with various global standards.

Part No	Diameter mm	WL mm	DoV	Field
<b>Ø 4.0 mm</b>				
606 001 022	4.0	45	0°	75°
606 001 023	4.0	45	70°	75°
606 001 024	4.0	175	0°	85°
606 001 025	4.0	175	30°	85°
606 001 026	4.0	175	70°	85°
606 001 027	4.0	175	90°	65°
606 001 031	4.0	175	0°	105°
606 001 028	4.0	175	30°	105°
606 001 029	4.0	175	70°	105°
606 001 035	4.0	300	0°	85°
606 001 036	4.0	300	30°	85°
606 001 037	4.0	300	70°	85°
606 001 038	4.0	300	90°	65°

Part No	Diameter mm	WL mm	DoV	Field
<b>Ø 2.7 mm</b>				
606 001 011	2.7	40	0°	75°
606 001 012	2.7	40	30°	75°
606 001 013	2.7	40	70°	75°
606 001 014	2.7	110	0°	75°
606 001 015	2.7	110	30°	75°
606 001 016	2.7	110	70°	75°
606 001 017	2.7	175	0°	75°
606 001 018	2.7	175	30°	75°
606 001 019	2.7	175	70°	75°
606 001 020	2.7	175	90°	65°
606 001 050	2.7	300	0°	75°
606 001 051	2.7	300	30°	75°
606 001 052	2.7	300	70°	75°

For the model 2.7mm with 90° Dov, the minimum diameter of holes is 5.5mm



Very large range of rigid industrial endoscopes. Superior optical quality. Integrates a light concentrator for better illumination.

They all accept 90° removable and rotative mirror tubes and stainless steel protection sleeves for shock protection. Our line of Ecofix Pro is available on stock. The exclusive lens system allows to offer very competitive repair costs. It gives excellent results in video endoscopy.

They can be made to operate up to 300°C on demand and are compatible with UV endoscopy applications.



The Endogrins® optical relay of the Ecofix PRO range allows to offer an excellent and bright image quality. Repairs can be done quickly at a fixed cost



ENDOSCOPES ECOFIX PRO				
Part No	Diameter mm	WL mm	DoV	Field
<b>Ø 1.85mm</b>				
604 000 100	1.85	80	0°	40°
604 000 268	1.85	127	0°	40°
604 000 290	1.85	180	0°	40°
<b>Ø 2.40 - 2.80mm</b>				
604 000 500	2.40	100	0°	40°
604 000 501	2.40	185	0°	40°
604 000 510	2.80	265	0°	40°
604 000 515	2.80	350	0°	40°
604 000 520	2.80	435	0°	40°
<b>Ø 4.20mm **</b>				
604 000 490	4.20	50	0°	40°
604 000 502	4.20	180	0°	40°
604 000 503	4.20	305	0°	40°
604 000 504	4.20	435	0°	40°
604 000 505	4.20	560	0°	40°
<b>Ø 6.35 - 7.20mm **</b>				
604 000 506	6.35	180	0°	40°
604 000 507	6.35	305	0°	40°
604 000 540	6.35	435	0°	40°
604 000 541	6.35	559	0°	40°
604 000 542	7.20	730	0°	40°
604 000 543	7.20	940	0°	40°

Mirror Tubes				SS Sheath
Part No	Diameter mm	WL mm	DoV	Part No
<b>For Ecofix Ø 1.85mm</b>				
604 000 101	2.2	80	90°	604 000 267
604 000 269	2.2	127	90°	604 000 270
604 000 291	2.2	180	90°	604 000 292
<b>For Ecofix Ø 2.4-2.8mm</b>				
604 000 112	2.8	100	90°	604 000 220
604 000 113	2.8	185	90°	604 000 221
604 000 525	3.4	265	90°	604 000 526
604 000 530	3.4	350	90°	604 000 531
604 000 535	3.4	435	90°	604 000 536
<b>For Ecofix Ø 4.2mm</b>				
604 000 491	4.8	50	90°	604 000 492
604 000 123	4.8	180	90°	604 000 264
604 000 124	4.8	305	90°	604 000 265
604 000 125	4.8	435	90°	604 000 266
604 000 272	4.8	560	90°	604 000 273
<b>For Ecofix Ø 6.35-7.20mm</b>				
604 000 545	8.0	180	90°	604 000 555
604 000 546	8.0	305	90°	604 000 556
604 000 547	8.0	435	90°	604 000 557
604 000 548	8.0	559	90°	604 000 558
604 000 549	8.0	730	90°	-
604 000 550	8.0	940	90°	-

\*\* Compatible UV



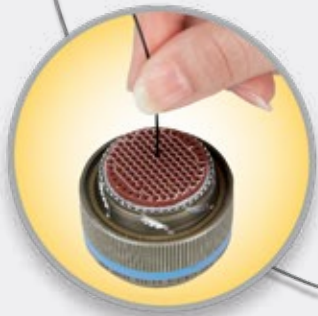
**Microflex PRO flexible**

Our Microflex range offers a resolution range of 3,000 to 50,000, depending on the diameters, allowing excellent quality of vision.

As standard, we deliver models with a standard detachable 32mm ISO eyepiece with adjustable focus and optionally, 1 C-Mount ring, allowing a direct C-mount camera connection.

We can also study specific models according to your applications.

**Quickly and easily inspect cooling holes inside turbine blades, cannulas, catheters, needles, trocars, valves in medical devices, and many other micro manufactured parts. Use it with our Endo-Lux-T light (80 Watts) source for optimal results.**



Standard Line

Detachable ocular with adjustable focusing



Description	Diameter	Working length	Amount of pixels	Field of view	Direction of vision	Depth of field	Bending radius	Tube construction	Working temperatures
<b>MF-037-20</b>	0.37 mm	200 mm	<b>3 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-037-100</b>	0.37 mm	1000 mm	<b>3 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-05-60</b>	0.50 mm	600 mm	<b>3 500</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-05-100</b>	0.50 mm	1000 mm	<b>3 500</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-10-100</b>	1.00 mm	1000 mm	<b>10 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-10-150</b>	1.00 mm	1500 mm	<b>10 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-10-200</b>	1.00 mm	2000 mm	<b>10 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-12-80</b>	1.20 mm	800 mm	<b>30 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-12-120</b>	1.20 mm	1200 mm	<b>30 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C
<b>MF-20-100</b>	2.00 mm	1000 mm	<b>50 000</b>	55°	0°	3 - 25 mm	25 mm	Polyamide	0 - 65°C

To order

Part No	Description
MF-037-20	Microflex flexible Ø 0,37 mm x 200 mm - 0°
MF-037-100	Microflex flexible Ø 0,37 mm x 1.000 mm - 0°
MF-05-60	Microflex flexible Ø 0,5mm x 600 mm - 0°
MF-05-100	Microflex flexible Ø 0,5mm x 1.000 mm - 0°
MF-10-100	Microflex flexible Ø 1,0mm x 1.000 mm - 0°
MF-10-150	Microflex flexible Ø 1,0mm x 1.500 mm - 0°
MF-10-200	Microflex flexible Ø 1,0mm x 2.000 mm - 0°
MF-12-80	Microflex flexible Ø 1,2mm x 800 mm - 0°
MF-12-120	Microflex flexible Ø 1,2mm x 1.200 mm - 0°
MF-20-100	Microflex flexible Ø 2,0mm x 1.000 mm - 0°
MF-VAL	Waterproof case for microflex



MF-37-20 shown with P1 monitor, FV35HQ camera & LED handle LED-RA



We offer on demand Microflex semi rigid with DoV 0° & 90°. Contact us for further details



## LED-R BIPOL light handle

Portable high intensity source with white LED lamp. LED life is approximately 50,000 hours under normal use. Supplied with its charger with battery level indicator and rechargeable. Li-ion battery (approximately 500 charge cycles).

Technical data	
LED output	10 Watts (80,000 lux)
Intensity adjustment	Adjustable to 5 levels
Dimensions	Ø 24 mm x 140 mm
Weight with battery	130 gr
Battery	Li-Ion 2400 mHa 3.7V - type 18650
Average runtime	3-4 hours
Durée de vie LED	50 000 heures

To order	
Part No	Description
LED-R	Bipol LED-R battery handle with rechargeable battery
LED-R-BAT	Spare battery LED-R
LED-R-BAT-CH	LED-R Spare battery charger



## Mini LED light handle

Portable light source with ACMI connection and LED light. 2 AA batteries (supplied). Adjustable illumination.

Technical data	
Illumination	10,000 to 55,000 lux (Min-max)
Dimensions	Ø 25 mm x 170 mm
Weight with batteries	120 gr
Average runtime	2-7 hours depending on the use

To order	
Part No	Description
605 000 565	Mini LED light handle with 2 AA batteries



## LED-RA rechargeable light handle

Ultra-high-performance portable source with white LED lamp and continuously adjustable lighting. Bulb life is 50,000 hours. Rechargeable battery and wall/table support included. Compatible with portable video applications.

Technical data	
Illumination	15,000 to 180,000 lux (Min-max)
Dimensions	Ø 31mm x 150mm
Weight with batteries	148 gr
Battery	Rechargeable 3.7V, 220mAh Li-Ion
Average runtime	2-7 hours depending on the use

To order	
Part No	Description
605 000 570	Rechargeable RA LED handle & adjustable lighting. Comes with charging wall bracket.
605 000 571	Original streamlight battery for LED-RA



## Endolux T LED table lightsource



Our Endo-lux T is a compact and powerful (80 watts) table light source with LED technology.

It comes with a continuous light adjustment (20 levels) and a standard RIWO output. It is compatible with video and photo applications and can be connected to our rigid endoscopes, fiberscopes.

#### Technical data

LED output	80 Watts
Illumination	800,000 lux
Light intensity	20 levels adjustable
Color temperature	5,000 - 7,000 k
Cable connection	RIWO
Power	110V-220V / 50 Hz-60Hz
Dimensions	355x315x120mm
Weight	5,2 kgs (11,46 lbs)
LED Lamp runtime	50,000 hours

#### To order

Part No	Description
Endo-Lux-T	Bipol table light source Endo-lux T - 80 Watts - RIWO - bi tension 110/220 VA
Endo-Lux-C	Light cable SUPERFLEX Ø 4 x 1900mm Steel sheathing with outer PVC sheathing connection RIWO-STORZ/ACMI.
614 000 056	Y adapter for 2 cables

#### Main features:

- High intensity low consumption LED
- Integrated memory function.
- Sleep modus.
- Light intensity adjustable on 20 levels

Light cable  
Endo-Lux-C



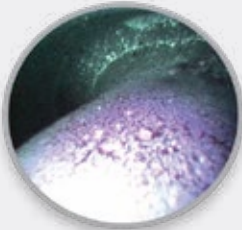
Y adapter (for 2 cables or 1 cable and 1 probe)



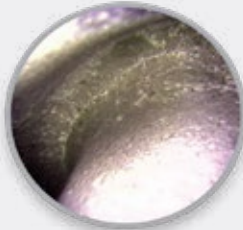
## S-UV table light source

Compact, quiet, very powerful and engineered to achieve excellent results, the S-UV is your first choice for FPI (fluorescent penetrant inspection). This instrument's high-quality filters provide pure UV light without any white so even the smallest inclusions and flaws are clearly visible.

Switching from white light to UV and back is very easy using the front-panel button or footswitch. We built an automatic anti-glare function into the device to spare you any discomfort from the white light's glare.



UV light



White light



Technical data	
Lamp life	Mercury vapor 150W Up to 2,500 hours (digital counter)
Dimensions (LxHxP)	340 x 310 x 160mm
Weight	7.5 kg
Automatic power	90/250 VA-50/60 Hz
Delivered with foot switch UV/WL	

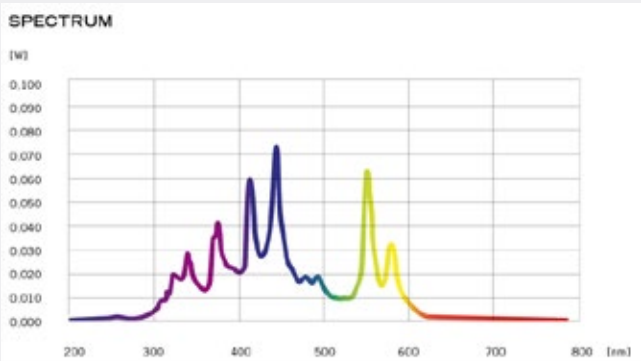
To order	
Code art	Description
613 000 006	Light source Endolux SUV-DC
613 000 016	Liquid light cable UV 5x1500mm



Liquid light cable

Position	Wavelength	Power*
UVA	320-400nm	1300mW
WL (white light)	400-700nm	400mW

(\* ) The radiation density (mW/cm<sup>2</sup>) depends on the distance between the radiation source and the observed area. Multiply by 5 the given values above to obtain the power in mW/cm<sup>2</sup> at the output of the standard cable Active diameter 5mm. Divide by the illuminated surface in cm<sup>2</sup> to have power in mW/cm<sup>2</sup> at other distances.



OPTICAL OUTPUT			
	Spectrum	Power	Power Density
	UVC	220-280 nm	500 mW 2,500 mW/cm <sup>2</sup>
	UVB	280-320 nm	2,000 mW 10,000 mW/cm <sup>2</sup>
	UVA	320-400 nm	3,500 mW 17,500 mW/cm <sup>2</sup>
	Violet	400-420 nm	1,300 mW 6,500 mW/cm <sup>2</sup>
	Blue	400-500 nm	5,000 mW 25,000 mW/cm <sup>2</sup>
	UVC-UVA	220-400 nm	6,000 mW 30,000 mW/cm <sup>2</sup>
	UVC-Blue	220-500 nm	11,000 mW 55,000 mW/cm <sup>2</sup>

## CCD - FV35HQ Camera

Compact high-resolution video camera specially developed for endoscopy video applications.

Equipped with a 1/2" sensor and an automatic electronic shutter, it allows the inspection of places with changing brightness.

Very light (about 160 gr) with its shockproof housing, it will be ideal in workshop application, Research & Development or even in external maintenance intervention.

The video coupler (option) is compatible with all our rigid and flexible endoscopes.

Our FV35-HQ endocamera is compatible with our Rugged (3.5") and P1 (7") videoscopes.

The TVSCOPE adapter allows it to be connected to an external monitor.

Resistant to dust



F:35mm coupler in option

Technical data	
CCD sensor	1/2" SONY
Resolution	800 TVL
White balance	Automatic
Video signal	PAL / NTSC
Power	12 DVC - unique cable
Connection	Integrated Video coupler
Dimensions	Ø 50 mm x 90 mm
Weight	160 gr (without cable)
Working temperatures	0°C to + 40°C

Part No	Description
618 000 184	Bipol FV35 HQ endocamera C-MOUNT
618 000 181	Bipol FV35 HQ endocamera C-MOUNT ( with video coupler F:35) - P1 Rugged connection.
Compatible accessories	
P1	P1 videoscope - 7" screen.
B-Rugged	Rugged videoscope - 3.5" screen.
TV-SCOPE	External Monitor Connection Kit (livré avec alimentation 12V secteur)



External monitor

19"

P1 videoscope



7"

Rugged videoscope



3.5"

Our FV35 HQ camera can be used with either our portable videoscopes P1 & Rugged or with a workbench monitor.

### C-Mount video coupler

Our video coupler allow you to connect an endoscope to a C-Mount CCD camera to view live images on a monitor. It offers an extra wide field of view and is available in 35mm focal length.

Description	Focusing	Mount	Part No
<b>Coupler F : 35mm</b>	Adjustable	C-Mount / ISO 32mm	618 000 102



## High resolution USB-HDM camera

High resolution compact video camera (2304x1536 px) specially developed for video endoscopy uses.

The camera can be used with any laptop that has a USB port.

The supplied visualization software is very easy to use and has many adjustable parameters.

Equipped with a 1/3" sensor and an automatic electronic shutter, it allows the inspection of places with changing light.

The camera has a dedicated HDMI output to be connected to an industrial monitor (cable supplied).

In this configuration, the camera is powered on mains.



Technical data	
CCD sensor	1/3.2" 3MP couleur CMOS
Resolution	2304 x 1536 px
White balance	Automatic
Signal Vidéo/Sortie	USB 3.0 / HDMI
Frame rate	HDMI: 1080i 60fps USB: 720p 30fps
HDMI recording	8GB Micro SD card
Power	USB charger - 5V (for HDMI connection) USB use: self-powered
Connection	C-Mount
Dimensions	Ø 40 mm x 100 mm
Weight	75 gr
Working temperature	+4°C to +50°C

Supplied with USB cable / HDMI cable / 8GB Micro SD card and dedicated image processing software (photo & video recording, digital zoom, measurement grid, image annotation)

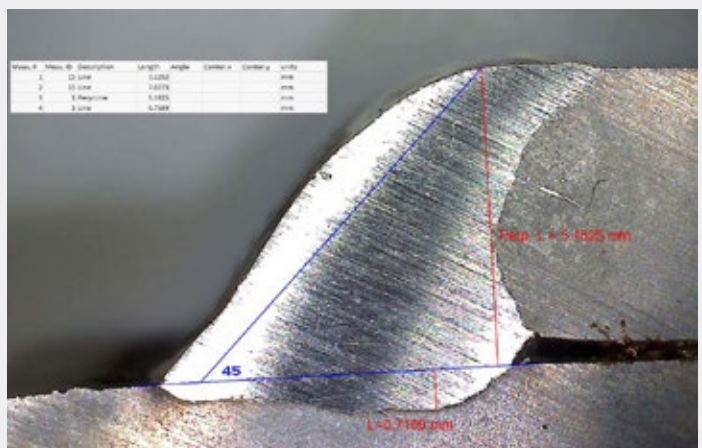


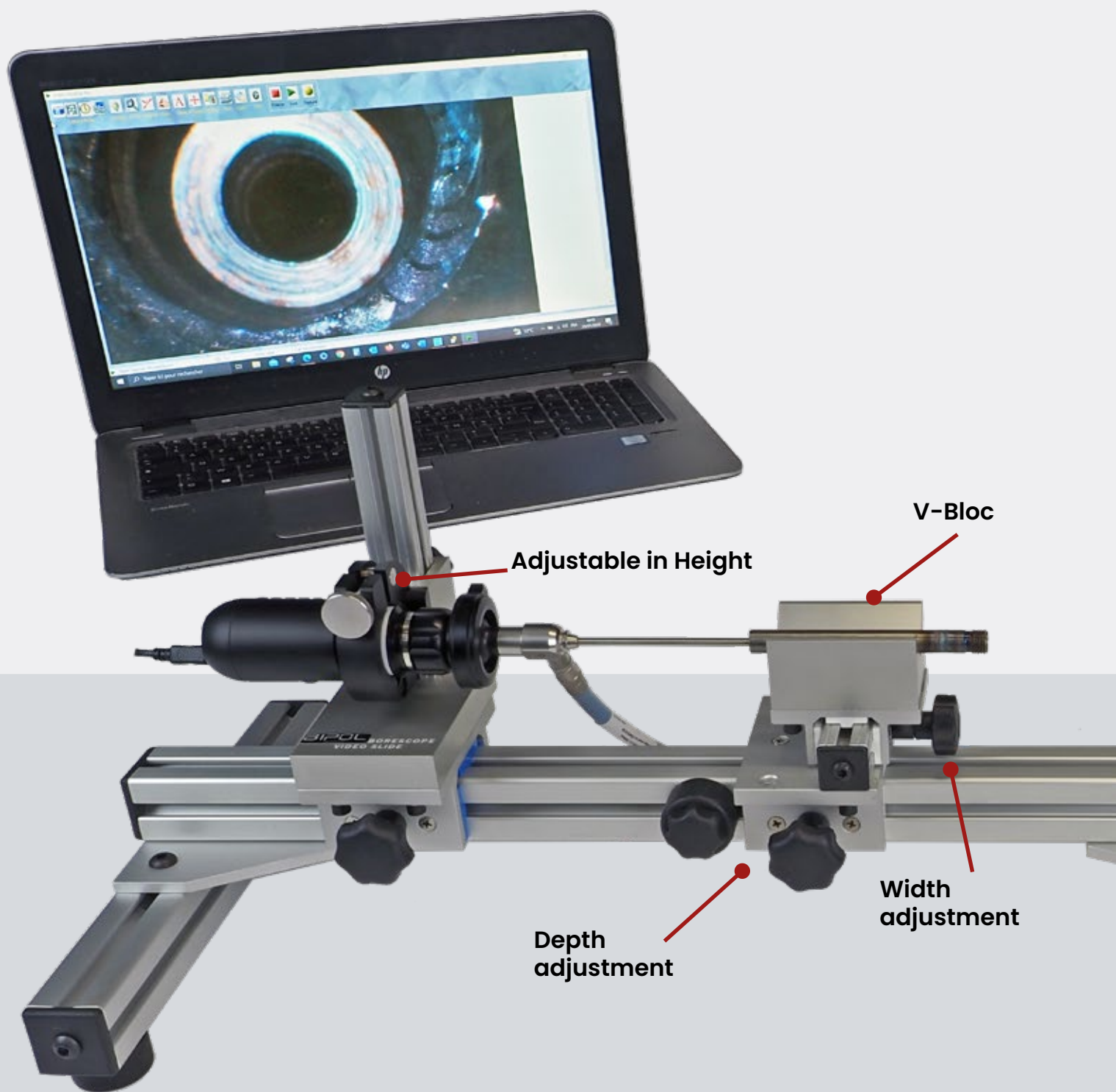
### To order

Part No	Description
618 000 175	3MP USB-HDMI Bipol camera with F:35 video coupler
618 000 176	Bipol USB-HDMI 3MP camera only

## Measurements function

The Pro version of the software has a wide range of measurements available including distance, angle, radius, pixel color and relational measurement – such as the distance between circles or the distance from the center of a circle to the midpoint of a line. The Pro version also allows export to an EXCEL spreadsheet.





**To order**

Part No	Description
VID-SLD60	Video station 60 cm for USB-HDM Camera
VID-SLD120	Video station 120 cm for USB-HDM Camera
VID-VB	Additional V-Bloc



# Video Station 60

Our video station VID-SLD was developed to offer high quality and stable video inspection. The part to inspect is positioned into a V-Bloc for maximum stability. Adjustments can be made in height, depth and width. Used with our USB-HDM camera, you will be able to perform top quality inspections.



### BIPOL Video Coupler

Our video coupler connects an endoscope to a C-Mount CCD camera to view live images on a monitor. It offers an extra wide field of vision. Compatible with all our CCD cameras.

Part No	Description
618 000 102	C-Mount video coupler with adjustable focus



### Articulating holder Magic arm

Articulated holder with central locking lever to be mounted on a bench thanks to its clamp. Compatible with Rugged & P1 videoscopes.

Part No	Description
618 000 106	Magic arm articulated holder with clamp
618 000 111	Additional clamp (for videoscope holder)



### Industrial video monitor 19"

Our professional industrial video monitors have been specially developed to meet the needs of video control in technical endoscopy and fibroscopy. Excellent contrast and high definition (1280x1024 pixels) will allow you to view on screen the interior of your parts in a great comfort of use without visual fatigue. Numerous inputs allow you to connect a variety of devices to these monitors. In addition to two BNC ports, you also have a VGA input and an HDMI input.

Part No	Description
619 000 012	19" video monitor



### Storage cases

P1-VID. Carrying case specially designed to allow easy and safe transport of our cameras and accessories. Accepts as standard our 3 different video cameras, the LED-R portable lighting stick as well as a P1 or Rugged monitor.

VAL-RIG2X. Aluminum case with footprints for 2 endoscopes (up to 435 mm) & LED-R light source.

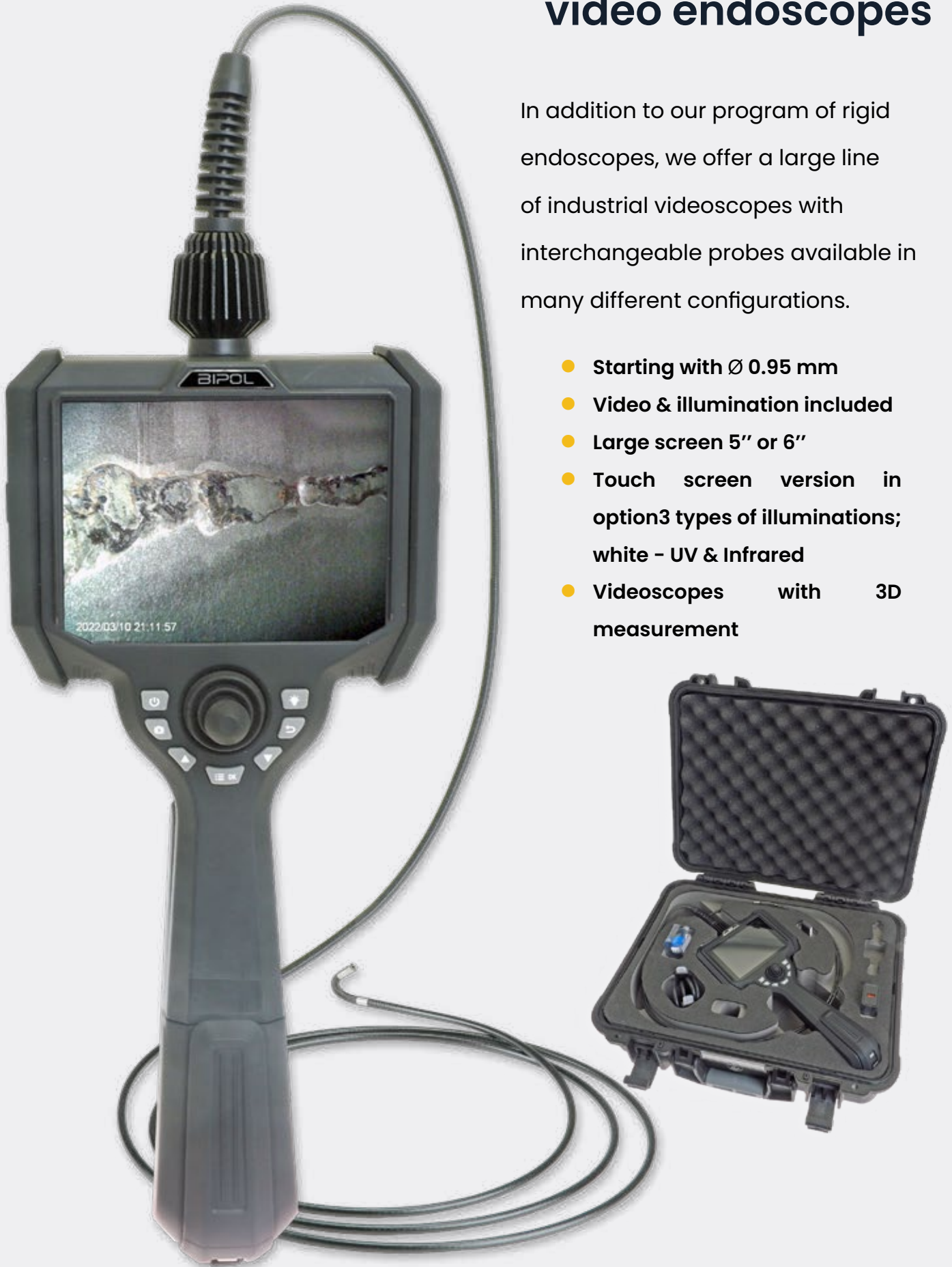
Part No	Description
VAL-RIG2X	Aluminum case with footprint for 2 rigid endoscopes (max length 435mm) & portable LED-R source.
P1-VID	Video carrying case with foam.



# High resolution technical video endoscopes

In addition to our program of rigid endoscopes, we offer a large line of industrial videoscopes with interchangeable probes available in many different configurations.

- Starting with  $\varnothing$  0.95 mm
- Video & illumination included
- Large screen 5" or 6"
- Touch screen version in option3 types of illuminations; white - UV & Infrared
- Videoscopes with 3D measurement



# BIPOL

## Contact Us

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