



*Featured Items
in this Catalog:*



NEW! Luxxor® Portable Video Camera

The new Luxxor® Portable Video Camera quickly and easily attaches to any Hawkeye® Rigid or Flexible Borescope, and most other brands as well. Now, any borescope can instantly become a videoscope!

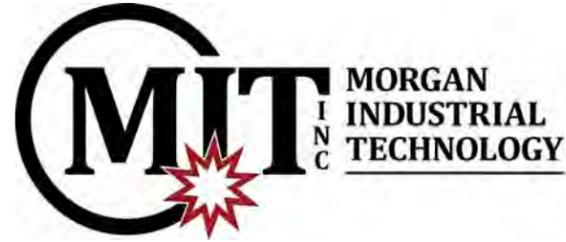
See pages 8 - 9 for details.



NEW! Hawkeye® V2 Video Borescope

Hawkeye® V2 Video Borescopes deliver world-class image quality, 4-way articulation, superior construction, in 4 or 6 mm diameters. Video and still image capture is quick and easy. Made in USA.

See pages 6 - 7 for details.



Morgan Industrial Technology

1702 West Boat St
Ozark, MO 65721

417.485.4575
www.morganitech.com



PRECISION BORESCOPIES



Your Eye Inside™



Gradient Lens Corporation®

Catalog Volume IX

The Finest Borescopes at the Best Prices • Made in USA



What's Inside...

Intro to Borescopes	
President's Message.....	3
Choosing Borescopes.....	4 - 5
Video Borescopes	
Hawkeye® V2 Video Borescopes.....	6 - 7
Luxxor® Portable Video Camera	8 - 9
Hawkeye® Classic Flexible Video	10
Luxxor® Video Microscope.....	11
Luxxor® Video Systems.....	12 - 13
Hawkeye® Rigid Borescopes	
Pro Rigid Borescopes	14 - 17
Classic Rigid Borescopes	18 - 19
Blue Rigid Borescopes	20 - 21
Hawkeye® Flexible Borescopes	
Pro Flexible Borescopes.....	22 - 23
Blue Flexible Borescopes	24 - 25
Classic Flexible Borescopes	26
Pro MicroFlex & Semi-Rigid Borescopes	27
Lighting & Accessories	
Handheld Light Sources	28
Luxxor & UV Light Sources.....	28 - 29
Accessories & Components	
Customer Service.....	29
Hawkeye® Accessories.....	30
Hawkeye® Components.....	30 - 31
Repairs.....	31

Gradient Lens Corporation®

Gradient Lens Corporation is very proud to introduce the latest addition to our line of Hawkeye Precision Borescopes – the new V2 Video Borescope! Our newly redesigned Hawkeye V2 Video Borescopes (pgs. 6 - 7) are leading the industry in high quality, affordable, light weight, portable, visual inspection. We designed and manufacture the Hawkeye V2's to offer the best quality, at the best price, delivering bright, high-resolution video and still images, large range of focus, smooth articulation, and durable tungsten sheathing. The new Hawkeye V2's are the best value of any videoscope on the market today!



We have also launched our new Luxxor® Portable Video Camera (pgs. 8 - 9), which allows any Hawkeye Rigid or Flexible Borescope to instantly become a videoscope. The Luxxor Camera quickly and easily attaches to virtually any borescope so that images can be displayed on a hand-held portable video monitor. Still images and video footage can also be captured on an SD Memory Card.

Hawkeye Precision Borescopes have been known for their world-class optics and great value for over 18 years... those are the business principles we built our company on over 30 years ago. Today, with over 80 different models of rigid, fiberoptic, and video borescopes, all Hawkeye® Precision Borescopes continue to be manufactured according to those same values.

Our Hawkeye Rigid, and fiberoptic Hawkeye Flexible Borescopes, continue to be the foundation of our product lines. Manufactured in our Rochester NY facility, Hawkeye Pro Rigids incorporate our latest, patented, e2 endoGRINs® relay lenses, and are hands down the best quality and value in the industry. Our Hawkeye Pro and Blue Flexible fiberoptic scopes, manufactured in our Southern CA plant are top notch, both optically and mechanically, and designed and manufactured to continue our tradition of quality and value. We invite you to compare our Hawkeye scopes to the competition, and see the difference.

Sincerely,

Douglas S. Kindred

Dr. Douglas S. Kindred
President and Chief Scientist



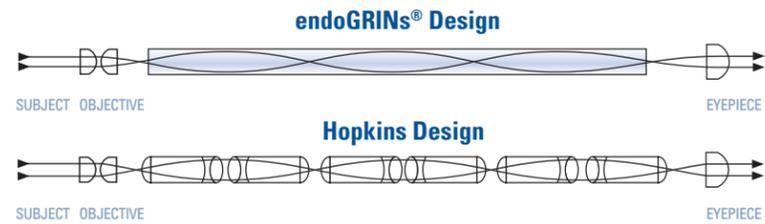
Send Us Your Parts!

For inspection solutions and photographs to prove it!



Rigid Borescopes

The heart of a rigid borescope design is the relay lens system. Gradient Lens Corporation's patented endoGRINs® design makes lens manufacturing and assembly easier and less costly, without sacrificing image quality.

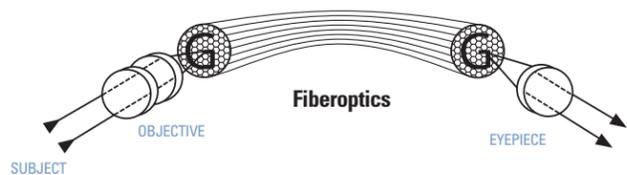


Our patented endoGRINs® gradient index lenses are the core technology of Hawkeye® Pro and Classic Rigid Borescopes. The elegant simplicity of the endoGRINs design gives excellent optical quality at a much lower cost than traditional alternatives, like the Hopkins design, which uses many expensive micro-lenses and optical glass rods.

As described above, rigid borescopes use traditional, glass optics to relay the image. If your entry path is straight, a rigid borescope delivers excellent image quality and can be more cost-efficient than either fiberoptic or video borescopes.

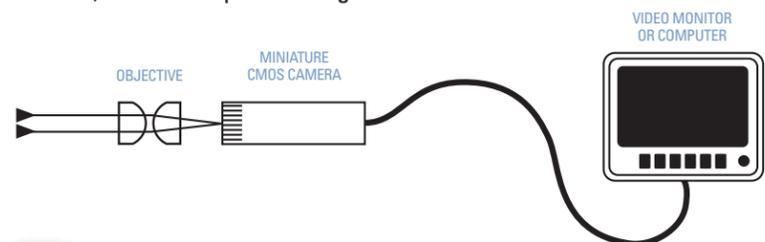
Fiberoptic Borescopes

Fiberoptic borescopes use optical glass fibers to relay the image. Resolution depends on the number of fibers and their diameter. Each fiber forms a pixel in the final image. If your entry path is not straight, fiberoptic borescopes have the advantages of flexibility and articulation.



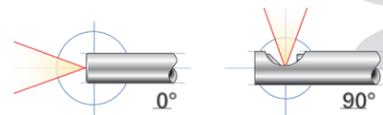
Video Borescopes

When compared with any other type of borescope, video borescopes deliver the best combination of image quality and convenience. Videoscopes transmit light through the objective lens to miniature video cameras, which then convey the image to a portable handheld monitor, or laptop and desktop computers. When portability, still and video image capture, and image storage and documentation are key factors, a videoscope is the right choice.



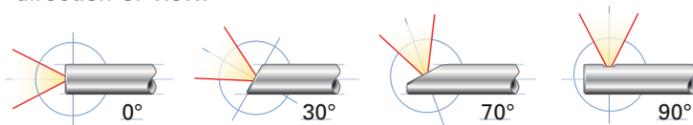
Direction-of-View (DOV)

Hawkeye Pro and Classic Rigid Borescopes see straight-ahead (0°) and sideways (90°) with a mirror tube that slides over the borescope tube, making them two borescopes in one.

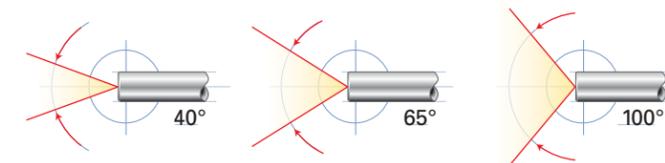


The mirror tube rotates the view over a full 360°, using the knurled knob. Our new mirrors are robust and durable for easy cleaning.

Hawkeye® Blue Rigid Borescopes use prisms to achieve the direction-of-view.



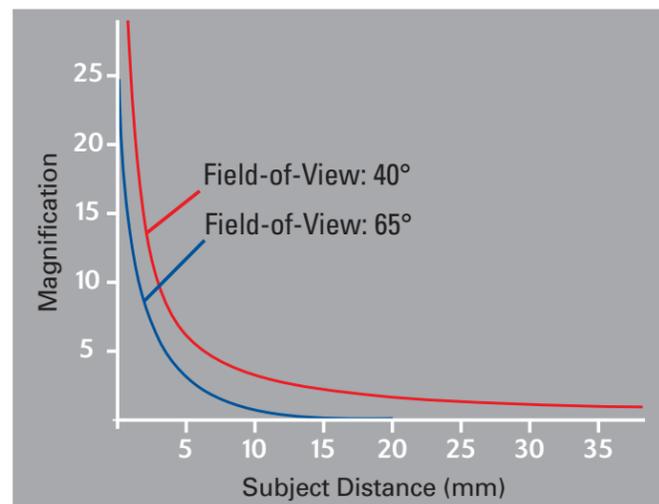
Field-of-View (FOV)



Most inspection situations need a "normal" objective lens (like a typical camera) with an angle of about 40°.

Wider lenses see more, but at a lower magnification, giving less detail. Magnification increases as the borescope approaches the subject, unlike a microscope objective, which gives a fixed magnification at one object distance.

Magnification Versus Subject Distance

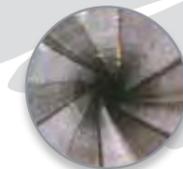


In 1995, Gradient Lens Corporation made only one model of borescope. Now we offer more than 80 rigid, flexible, and video Hawkeye® borescopes, and a complete system of interchangeable accessories.



Hawkeye® Rigid Borescopes

Choose a Hawkeye® Rigid Borescope when the entry path is straight. Rigid borescopes have better image quality, and are more durable and less expensive, than flexible scopes. Hawkeye® Classic and Pro Rigid Borescopes have DOV's of 0°, 30°, and 90°. Hawkeye® Blue Rigid Borescopes offer a wider selection of DOV's and lengths. Pgs. 14 - 21



Button rifled .204 Ruger as seen with a Hawkeye Pro Slim 17"



Diesel injector body taken with a Hawkeye Pro Hardy 7"



Burr in a cross hole in an ABS brake manifold viewed with a Hawkeye Pro Slim 7"

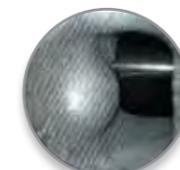


Hawkeye® Flexible Borescopes

When your entry path is curved, you'll need a Hawkeye® Pro, Classic, or Blue Flexible Borescope. With 0-, 2-, or 4-way articulation, up to 25,000 pixel image resolution, and flexible, durable, tungsten sheathing, Hawkeye® Flexible Borescopes are the finest fiberscopes on the market. Pgs. 22 - 26



A complex casting is inspected using a Hawkeye Pro Flexible



Interior of aluminum casting viewed with a Hawkeye Pro Flexible with 90° adapter



Timing chain in Honda 500 cc motorcycle engine using a Hawkeye Pro Flexible

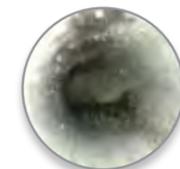


Hawkeye® Semi-Rigid Borescopes

Hawkeye® Pro MicroFlex Semi-Rigid and Flexible Borescopes offer diameters as small as 0.5 mm, and a 10,000 or 30,000 fiber image bundle, all in "bendable," semi-rigid, Nitinol or polyimide sheaths. Pg. 27



A Hawkeye Pro MicroFlex Semi-Rigid borescope inspecting a very small electrical socket



Medical tubing is inspected for flaws or defects with a 0.9 mm Hawkeye Pro MicroFlex Flexible



An electrical circuit board as seen with a 0.9 mm Hawkeye Pro MicroFlex Flexible

Hawkeye® Video Borescopes

The new Hawkeye® Pro V2 Video Borescopes represent our next generation of fully portable, articulating, videoscopes. The V2 has a large focus range, is bright, and delivers high-res images and video. The V2 is available in diameters of 4 and 6 mm and has 4-way articulation. Pgs. 6 - 7 Non-articulating Hawkeye Classic Flexible Video Borescopes are affordable and functional. Pg. 10



Luxxor® Portable Video Camera

The new Luxxor® Portable Video Camera quickly and easily attaches to any Hawkeye® Rigid or Flexible Borescope, and most other brands as well. Now, any borescope can quickly and easily become a videoscope, simply by attaching the borescope to the video coupler of the Luxxor Portable Camera.

The new Luxxor Camera allows users to view internal visual inspection images on portable or benchtop video monitors, or on laptop or desktop computers. Video footage, and photos, can then be viewed "live," and saved, documented, and e-mailed. Pgs. 8 - 9

Luxxor® Video Systems

Connect any Hawkeye® Rigid or Flexible Borescope to a video camera and display the image on a computer or video monitor. Store, document and e-mail images as well. Pgs. 12 - 13





The next generation of fully-portable, articulating video borescopes!

Made in USA

SD Memory Card

Integrated 5" LCD Monitor

Bright, High-Res Video and Still Images

Rugged, Tungsten 4-Layer Sheathing

Detachable Micro LED With intensity adjustment

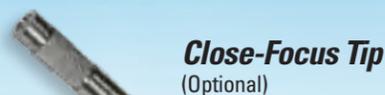
4-Way Articulation Remotely controlled

4 and 6 mm Diameters
.157" and .240"

VIDEO BORESCOPIES

- Bright, High-Res Video and Photos
- Large Range-of-Focus
- Quality Construction
- 4-Way Articulation
- 4 & 6 mm Diameters

We've improved the image quality in the new Hawkeye® V2 with a higher resolution, more light sensitive camera, delivering bright, crisp, clear images! The new 5" LCD Monitor provides comfortable viewing, and intuitive, easy-to-use controls, allow photo and video capture at the touch of a button! We've increased the 4-way articulation range, as well as the field-of-view and depth-of-field. It's still small, lightweight, portable, delivers great image quality. Available in 4 and 6 mm diameters. Optional 90° Prism and Close-Focus adapter tips available.



Close-Focus Tip
(Optional)



90° Prism Tip
(Optional)



Aircraft and Power Generation maintenance teams can quickly and easily inspect turbine blades, combustion chambers, cooling tubes, and much more, all without the need for costly and time consuming engine and system tear-down. Foundries can inspect for flash, sand, and voids inside complex castings.

Hawkeye V2 Video Borescopes deliver the same image quality, portability, and articulation of scopes costing three times as much.



Using the Close-Focus tip, fine cracks are detected inside a combustion chamber.



Each Hawkeye® V2 Video Borescope Kit Contains:

- Hawkeye® V2 Video Borescope
- Video Borescope Charger
- LED Light Source, Batteries and Charger
- USB and Video Output Cables
- SD Memory Card
- Luxxor® 24 Light Source, Power Supply, and Power Cord (all optional)
- Optional Tips



Made in USA

Hawkeye® V2 Video Borescope Specifications

Diameter	4.0 or 6.0 mm
Lengths	1.5, 3.0, and 6.0 meters
Articulation	150° up/down, 150° right/left
Field-of-View	70° diagonal
Depth-of-Field	15 mm - ∞
Depth-of-Field with Close-Focus Tip, 0°	4 mm - 22 mm
Direction-of-View	0°, 90° with optional Prism Tip
Sheath	2 mil tungsten braid, durable 4-layer construction
Illumination	Detachable micro LED with intensity adjustment
Display	5" TFT LCD
Interfaces	Mini USB 1.1 and AV/out
Power	DC 5V
Battery	2.5 hr. run time, rechargeable lithium
Recording Media	SD card (up to 2GB)
Digital Photo Format	JPEG (640 X 480)
Video Format	ASF (640 X 480), Playback with Windows Media Player

Hawkeye® V2 Video Borescopes

Diameter	Length	Articulation	Model #
4 mm	1.5 m (4'11")	2-way	V2 040 1500 2
4 mm	1.5 m (4'11")	4-way	V2 040 1500 4
4 mm	3.0 m (9'10")	4-way	V2 040 3000 4
4 mm	90° Prism Tip	NA	V2 PTIP 4 90
4 mm	Close-Focus Tip	NA	V2 TIP 4CF
6 mm	1.5 m (4'11")	4-way	V2 060 1500 4
6 mm	3.0 m (9'10")	4-way	V2 060 3000 4
6 mm	6.0 m (19'8")	4-way	V2 060 6000 4
6 mm	90° Prism Tip	NA	V2 PTIP 6 90
6 mm	Close-Focus Tip	NA	V2 TIP 6CF

All models are usually in stock. However, occasionally due to overwhelming demand, stock levels fluctuate. Please call our sales team for delivery estimates.



Look inside...with video! Turn ANY borescope into a portable videoscope in just seconds!

Made in USA

Connects to ANY Hawkeye® Rigid or Flexible Borescope



Each Luxxor® Portable Video Camera Kit contains:

- Luxxor® Portable Camera
- Portable Video Monitor
- Video Cables
- SD Memory Card
- Tripod
- AC Power Adaptor
- Rugged Hawkeye® Pro Carrying Case



Completely Portable Visual Inspection Inside...



Machined Parts



Castings



Welded Parts

When connected to any Hawkeye® Rigid or Flexible Borescope, and most other brands, the new Luxxor® Portable Video Camera delivers sharp, bright video and still images. Inspection images can be viewed "live," and captured, stored, and documented. You can view video on our Portable Video Monitor, or any computer or benchtop video monitor.

Luxxor Portable Video Camera

Product	Model#
Luxxor Portable Video Camera*	LPC
Luxxor Portable Video Camera Kit**	LPC-PVM

Viewing Options

Portable Video Monitor***	PVM-DV
USB2 Image Capture Device & Software	VC-USB2
Sony® Professional Video Monitor	SVM-15

Accessories

Video Cable (LPC to PVM)	DV-MCBL
Video Cable (LPC to ext. monitor, VC-USB2, or, RCA)	DV-YCBL
Hawkeye® LED Light	HAWKEYE LED
Tripod (Attaches to PVM)	DV-Tripod
BNC Adaptor (BNC input to RCA output from DV-YCBL adaptor)	DV-BNC
Aluminum Carrying Case (w/die cut foam insert)	PCC

* Includes Luxxor Portable Camera & Video Cable DV-YCBL (RCA output)

** Includes Luxxor Portable Camera, Portable Video Monitor, Hawkeye® LED Light, PVM Video Cable, #DV-MCBL Video Cable, Video Cable for Additional Monitor, DV-YCBL, Tripod Stand, SD Memory Card, & PCC Carrying Case

*** Includes Portable Video Monitor, LPC Video Cable #DV-MCBL, Tripod Stand, SD Memory Card

3 Viewing Options:



Portable Video Monitor:
Portable video monitor with image capture



Computer Ready:
USB capture device with software



Sony® Professional Video Monitor:
15" LCD monitor

Luxxor® Portable Video Camera Specifications

Image Sensor.....	1/4" Color CCD
Lens	Built in 25 mm borescope coupler lens
Mount.....	Quick release, ball bearing mount couples 32 mm borescope eyecup securely to the camera
Video Format	NTSC
Resolution	768 x 494 pixels (520 TV lines)
S/N Ratio.....	48DB + Min.
Illumination.....	0.2 Lux at F/1.2 (without borescope)
Shutter Speed	1/50 - 1/100,000
Working Temperature.....	-10 to 45° C
Power Supply.....	5 - 12 V DC, 80 mA
Output.....	Standard cable is RCA composite video, or, 12 PinHi-ROSE with portable video monitor
Length	160 mm
Handle Diameter	32 mm
Coupler Lens Diameter	44.5 mm



Made in USA



Low-cost, non-articulating, high quality, and fully portable!

Made in USA

PRECISION BORESCOPIES

Hawkeye® Classic Flexible Video Borescopes are the perfect choice when portability, and easy image capture, are key factors. These high quality, affordably priced video borescopes are much more durable than fiberoptic borescopes, low cost, and completely portable. Hawkeye Classic Flexible Video Borescopes come complete with video monitor, LED light source, and image capture capability, all in one, easy-to-use device.

Classic models are 8 mm in diameter, non-articulating, and come with plastic coated stainless steel gooseneck sheathing which takes a set before insertion into a cavity. Hawkeye Classic Flexible Video Borescopes are available in standard lengths of 1.5, 3.0, 6.0, and 12.0 meters. Custom length scopes are available by special order.

Hawkeye® Classic Flexible Video Borescope Specifications

Diameter	8.0 mm
Lengths	1.5, 3.0, 6.0, and 12.0 meters
Articulation	None
Field-of-View	50°
Direction-of-View	0°, or use 90° tip
Sheath	Stainless steel gooseneck covered with PVC
Illumination	Micro LED with intensity adjustment
Display	3.5" TFT LCD
Interfaces	Mini USB 1.1 and AV/out
Power	DC 5V
Battery	2.5 hr. run time, rechargeable lithium
Recording Media	SD card (up to 2GB)
Digital Photo Format	JPEG (640 X 480)
Video Format	ASF (320 X 240), playback with Windows Media Player



Plastic Coated, Stainless Steel Gooseneck Sheath

Bright, Clear Images
5x higher definition than fiberscopes

Lengths of 1.5 - 12 m

Outside Diameter
.315 inches (8 mm)

Still Image Capture
Video Capture



90° Tip (Optional)



Hawkeye® Classic Flexible Video Borescopes

Diameter	Length	Articulation	Sheath	Model #
8.0 mm	1.5 m	None	Gooseneck	CVS 080 1500
8.0 mm	3.0 m	None	Gooseneck	CVS 080 3000
8.0 mm	6.0 m	None	Gooseneck	CVS 080 6000
8.0 mm	12.0 m	None	Gooseneck	CVS 080 12000

Microscope / Borescope Inspection Station

Easily converts from microscope to borescope, for external or internal inspections

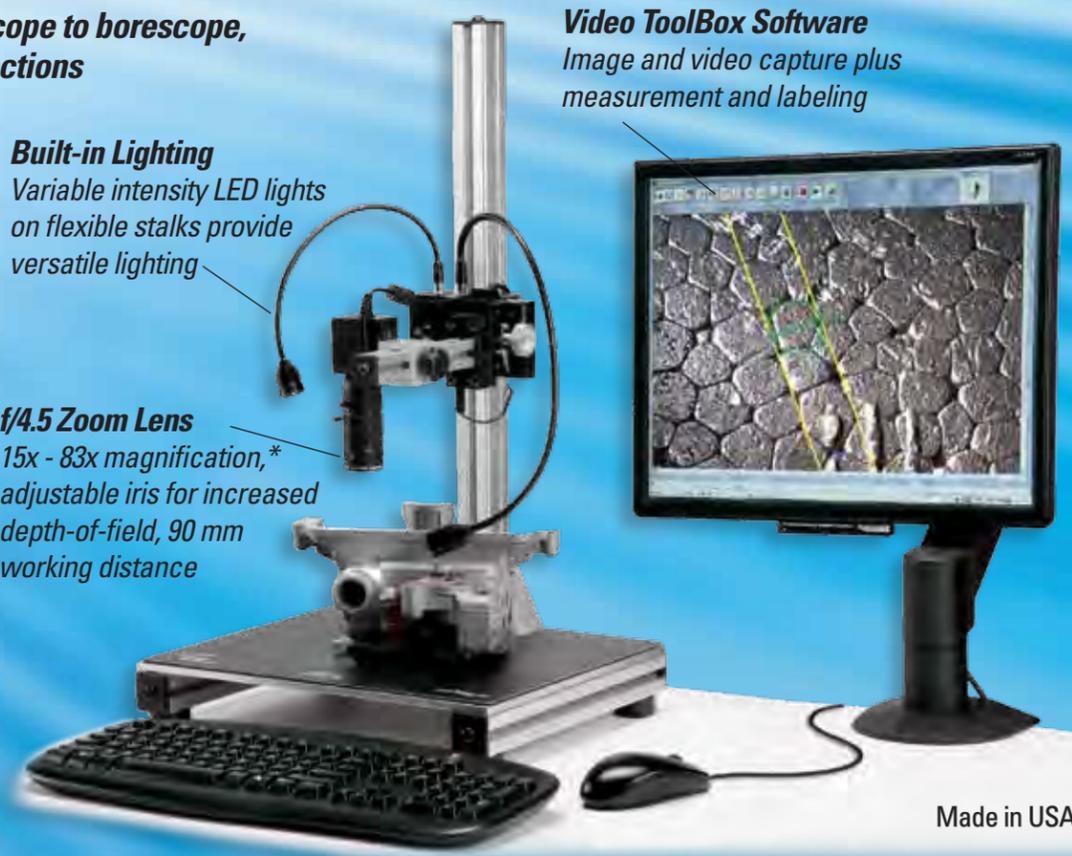


VIDEO MICROSCOPE

The Luxxor® Video Microscope can be used both as a microscope or with a borescope. The high quality, f/4.5 zoom lens delivers sharp, close-up views of the exterior of any object placed on the microscope's 15" x 10" table. Built-in, flexible gooseneck, LED illumination provides ample, versatile, convenient illumination. Generous column height allows viewing of objects up to 16 inches high. Additionally, any Hawkeye® Precision Borescope, and most other borescopes, can be quickly and easily mounted with an optional adapter, allowing high-quality, close-up, internal inspection.

Built-in Lighting
Variable intensity LED lights on flexible stalks provide versatile lighting

f/4.5 Zoom Lens
15x - 83x magnification,* adjustable iris for increased depth-of-field, 90 mm working distance



Video ToolBox Software
Image and video capture plus measurement and labeling

Made in USA

Key Benefits:

- Conduct internal and external inspection
- Capture video or still images
- Metrology feature allows accurate measurement
- Document, store, and e-mail results
- A more comfortable, ergonomic alternative to stereo microscopes

Luxxor® Video Microscope Specifications:

System Magnification	15x - 200x**
F/#	4.5
Working Distance	90 mm
Field-of-View	24 mm - 4.0 mm
Resolution in Object Space	5 microns
Camera	1.3 MP (1280 x 1024 pixels), 1/2" CMOS
Stage	2-axis with rack and pinion focusing
Measurement Accuracy	+/- 0.001" at 15x
Illumination Unit	2 adjustable, LED Goosenecks
Video Output	USB 2.0
Power Supply	110 VAC
Table Size	15" x 10"
Maximum Object Height	16"

Computer requirements: Windows 2000/XP/VISTA computer, Pentium 1.8 GHz processor or better, Minimum 512KB RAM, Free USB 2.0 high speed port.

**With 2.5x Converter.



As a microscope



With a borescope
(with optional VC-35 Video Coupler)

Luxxor® Video Microscope & Accessories

Product	Model #
Luxxor® Video Microscope	LVM-1
Borescope Adapter (optional)	VC-35
25 mm Lens (~ 7x magnification)	LVML-25
12 mm Lens (~ 3.5x magnification)	LVML-12
1.5x Converter	1.5X CVTR
2.5x Converter	2.5X CVTR

Borescopes and video coupler sold separately. Computer and monitor not included.
*Based on 19" monitor.



Connect any Hawkeye® Borescope to a Luxxor® Video System!



The Luxxor® Video System can be used with any laptop or desktop computer, or video monitor. Video and still images can be captured, stored, documented, and e-mailed.

Video Slide sold separately. Computer not included.

We'll help you put together the right system for your specific inspection needs!

Luxxor® Video System

The Luxxor® Video System connects to **any** rigid or flexible Hawkeye® Precision Borescope, as well as most other borescope brands. The benefits of using the Luxxor Video System include the ability to:

- Easily document inspections and store video or still images
- Share inspection images via e-mail or hard copy
- Hold group reviews of inspection images displayed on a video monitor
- Easily and quickly conduct repetitive inspections by relieving the physical and mental fatigue of inspectors

Made in USA



Live video using any Hawkeye® Borescope!



Sony® Video Camera
1/3-type Super HAD II CCD – High resolution and true color

Luxxor® Video Coupler Lens
Clamps to borescope eyecup and fits video camera C-Mount

The Hawkeye® Video Borescope Slide makes inspections faster, and the resulting video images much more stable. The video slide was expressly designed for repetitive inspections and capturing borescope images. The Hawkeye Video Borescope Slide features:

- Three axis adjustments providing flexibility and easy setup
- An adjustable stop that sets the inspection depth to easily locate a point of interest and prevents damage to the borescope tip
- Locking mechanisms on all three axes that ensure repeatable results and allow users to slide either the borescope, or the part being inspected
- A standard, aluminum V-Block that can handle mounting most parts. (Users can modify the V-Block or replace it with a custom mount for oddly shaped parts.)



Easily attach the Luxxor® Video Camera to any Hawkeye® Borescope

Hawkeye® Video Slide

Luxxor® Video Camera System	LXX-VBSM
Sony® Video Camera	XC-505
Luxxor® Video Coupler Lens	VC-25
Luxxor® 24 Light	LXX24
Luxxor® Light Guide	LXXLG
Hawkeye® SuperKit Carrying Case	HSC
Other Items Sold Separately	Model #
Sony® Professional Video Monitor	SVM-15
USB 2.0 Image Capture Interface	VC-USB2
Hawkeye® Video Slide 24"	HVSLIDE-H24
Hawkeye® Video Slide 48"	HVSLIDE-H48
V-Block for Video Slide	HV-VBSTAGE-XY



Borescope sold separately



PRECISION BORESCOPIES

Independent Focusing Ring
Easy video & still photography

e2 endoGRINs® Optics
Sharper, more detailed images

Multi-Coated Objective Lens
Higher contrast & vivid color

90° Mirror
More durable; easy to clean

Every Hawkeye® Pro Rigid Borescope is designed with professional users in mind. These top-of-the-line rigid borescopes deliver bright, clear, detailed, high-contrast images.

Every Hawkeye Pro Rigid Borescope includes:

- Our latest endoGRINs® image relay lenses
- Multicoated objective lens
- LightConcentrator™ light post
- Independent focusing ring for convenient video and still photography
- Super bright, portable SuperNOVA™ Light, with rechargeable SuperNOVA Lithium-Ion batteries

Hawkeye Pro Precision Borescopes extend the proven Hawkeye virtues of first class quality and superior value.

LightConcentrator™
Brighter, more even light

10x Intensity SuperNOVA™ Light
Brighter, clearer images

Each Hawkeye® Pro Borescope Kit contains:

- Hawkeye® Pro Precision Borescope
- Hawkeye® Mirror Tube
- Hawkeye® SuperNOVA™ Light and Charger
- Rugged Hawkeye® Carrying Case
- Hawkeye® Cleaning Kit



For individual borescopes and kit components see pages 30 - 31.

Pro Slim FOV 42°, DOV 0°

○ Outside Diameter .165 inches (4.20 mm)

Mirror Tube DOV 90°

○ Outside Diameter .188 inches (4.80 mm)

Hawkeye® Pro Slim Borescope Kits

Lengths: 2" 7" 12" 17" and 22" Model #

2"	Pro Slim Kit (50.8 mm)	PS02-NVK
7"	Pro Slim Kit (180 mm)	PS07-NVK
12"	Pro Slim Kit (305 mm)	PS12-NVK
17"	Pro Slim Kit (435 mm)	PS17-NVK
22"	Pro Slim Kit (560 mm)	PS22-NVK

Pro Slim Prism FOV 70°, DOV 30°

○ Outside Diameter .165 inches (4.20 mm)

30° Prism Optics

Hawkeye® Pro Slim Prism Borescope Kits*

Lengths: 7" 12" and 17" Model #

7"	Pro Slim Prism Kit (180 mm)	PS07-30-NVK
12"	Pro Slim Prism Kit (305 mm)	PS12-30-NVK
17"	Pro Slim Prism Kit (435 mm)	PS17-30-NVK

* Mirror tube not available.



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.

Pro Slim™
.165" (4.20 mm)

The clarity and brightness of Hawkeye® Pro Slim Borescopes bring out all the details in your subject. The Pro Slim offers the best combination of small diameter, length, and bright illumination. Most machined metal parts afford ample access for the Hawkeye Pro Slim Borescope and mirror tube. You will clearly see burrs and surface finish in bores and cross-holes.

Pro Slim Prism™
.165" (4.20 mm)

The forward oblique, 30° direction-of-view (DOV) of Hawkeye® Pro Slim Prism Borescopes deliver greater depth perception than either 0° or 90° DOV scopes. Additionally, the wide 70° field-of-view gives the viewer a much broader and more versatile view of the subject. The prism optics in Hawkeye borescopes represent our very latest optical design. Great image quality at hundreds less than comparable scopes!



Made in USA



PRECISION BORESCOPIES

Sharper, brighter images with all the powerful Pro features: e2 endoGRINs® lenses, multi-coated objective lenses, easy-to-clean mirror tubes, LightConcentrator™, and SuperNOVA™ Light. Independent focusing makes video and still photography easy.

Pro MicroSlim™ .073" (1.85 mm)

Hawkeye® Pro MicroSlim Borescopes are just .073 inches in diameter, or .084 inches with a mirror tube. Use them to inspect diesel fuel-injection nozzles miniature hydraulic components and much more.

Pro SuperSlim™ .098" (2.40 mm)*

At .098 inches in diameter, or .109 inches with a mirror tube, the Hawkeye® Pro SuperSlim Borescopes give sharp, clear views of the microscopic holes in spray tips and nozzles. Use them to inspect small bores for burrs, surface finish irregularities, and more.

*The 10, 14, and 17 inch models are .110" (2.80 mm) in diameter.

Made in USA



Pro MicroSlim FOV 40°, DOV 0°

Outside Diameter .073 inches (1.85 mm) ○

Mirror Tube DOV 90°

Outside Diameter .084 inches (2.13 mm) ○



Pro SuperSlim FOV 40°, DOV 0°

Outside Diameter .098 inches (2.49 mm) 4" and 8" models ○

Outside Diameter .110 inches (2.80 mm) 10", 14" and 17" models ○



DOV 90°

Outside Diameter .109 inches (2.77 mm) 4" and 8" models ○

Outside Diameter .150 inches (3.80 mm) 10", 14" and 17" models ○

Hawkeye® Pro MicroSlim Borescope Kits

Lengths: 3" 5" and 7"	Model#
3" Pro MicroSlim Kit (80 mm)	MS03-NVK
5" Pro MicroSlim Kit (120 mm)	MS05-NVK
7" Pro MicroSlim Kit (178 mm)	MS07-NVK

Hawkeye® Pro SuperSlim Borescope Kits

Lengths: 4" 8" 10" 14" and 17"	Model #
4" Pro SuperSlim Kit (102 mm)	PSS04-NVK
8" Pro SuperSlim Kit (185 mm)	PSS08-NVK
*10" Pro SuperSlim Kit (265 mm)	PSS10-NVK
*14" Pro SuperSlim Kit (350 mm)	PSS14-NVK
*17" Pro SuperSlim Kit (435 mm)	PSS17-NVK

*The 10, 14, and 17 inch models are .110" (2.80 mm) in diameter.



Every Hawkeye® Pro MicroSlim and SuperSlim Borescope Kit contains:

- Hawkeye® Pro Precision Borescope
- Hawkeye® Mirror Tube
- Hawkeye® Shipping Sheath
- Hawkeye® SuperNOVA™ Light and Charger
- Rugged Hawkeye® Carrying Case
- Hawkeye® Cleaning Kit



For individual borescopes and kit components see pages 30 - 31.



Pro Hardy FOV 50°, DOV 0°

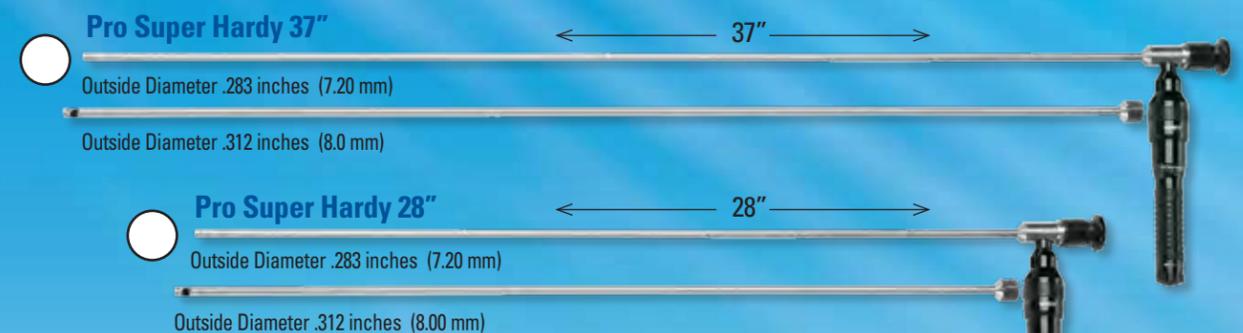
Outside Diameter .250 inches (6.35 mm)

Mirror Tube DOV 90°

Outside Diameter .313 inches (8.00 mm)

Hawkeye® Pro Hardy Borescope Kits

Lengths: 7" 12" 17" and 22"	Model #
7" Pro Hardy Kit (180 mm)	PH07-NVK
12" Pro Hardy Kit (305 mm)	PH12-NVK
17" Pro Hardy Kit (435 mm)	PH17-NVK
22" Pro Hardy Kit (559 mm)	PH22-NVK



Pro Super Hardy 37"

37"

Outside Diameter .283 inches (7.20 mm)

Outside Diameter .312 inches (8.0 mm)

Pro Super Hardy 28"

28"

Outside Diameter .283 inches (7.20 mm)

Outside Diameter .312 inches (8.00 mm)

Hawkeye® Pro Super Hardy Borescope Kits

Lengths: 28" and 37"	Model #
28" Pro Super Hardy Kit (711 mm)	PSH28-NVK
37" Pro Super Hardy Kit (940 mm)	PSH37-NVK



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.



Pro Hardy™ .250" (6.35 mm)

Hawkeye® Pro Hardy Borescopes are rugged and bright. The quarter-inch diameter Pro Hardy gives 3x the illumination of the Pro Slim.

The Hawkeye Pro Hardy Borescope excels at looking into the larger, dark spaces of diesel and aircraft cylinders, tanks, pressure vessels, pipes, and even wall cavities.

Pro Super Hardy™ .283" (7.20 mm)

The slightly larger, 7.2 mm diameter Hawkeye® Pro Super Hardy Borescope, is invaluable when a 28- or 37-inch reach is required. The larger diameter, in combination with our patented e2 endoGRINs® lens relays, deliver an image almost 2.5x larger and 1.5x brighter than a regular Pro Hardy. Now, you can see clearly inside very deep bores, pipes, or tubes. As with all Hawkeye® Pro Precision Borescopes, the rugged Pro Super Hardy easily attaches to all Hawkeye® or Luxor® Light Sources and Video Systems.

Made in USA



PRECISION BORESCOPIES

Exceptional quality and value!

Made in USA

In 1995, the first Hawkeye® Precision Borescope broke new ground. Using our newly developed endoGRINs® gradient index lenses, we became able to offer image quality similar to the finest borescopes made anywhere in the world, and do so at one-third the price! Today, Hawkeye® Classic Rigid Borescopes are as great a value as they have always been. Hawkeye Classic Borescopes are used by building inspectors, technicians, sportsmen, manufacturers, and more. Exceptional value and quality have made Hawkeye® Rigid Borescopes the world leader in sales of rigid borescopes.

The Mini Maglite® flashlight is bright enough for most subjects, however, you can upgrade to the Hawkeye® SuperNOVA™ Light for brighter light and economy in heavy use. See page 30.

Made in USA

Mini Maglite®
Ample light for close or reflective subjects

Each Hawkeye® Classic Borescope Kit contains:

- Hawkeye® Classic Precision Borescope
- Hawkeye® Mirror Tube
- Mini Maglite® Flashlight and Two AA Batteries
- Rugged Hawkeye® Carrying Case
- Hawkeye® Cleaning Kit



For individual borescopes and kit components see pages 30 - 31.

Multi-Coated Objective Lens
Better contrast & color

90° Mirror
More durable; easy to clean

Classic Slim FOV 42°, DOV 0°

○ Outside Diameter .165 inches (4.20 mm)

DOV 90°

○ Outside Diameter .188 inches (4.80 mm)

Classic Hardy FOV 50°, DOV 0°

○ Outside Diameter .250 inches (6.35 mm)

DOV 90°

○ Outside Diameter .313 inches (8.00 mm)

Hawkeye® Classic Slim Borescopes Kits

Lengths: 7" 12" 17" and 22"	Model #
7" Classic Slim Kit (180 mm)	HS07-AF-KIT
12" Classic Slim Kit (305 mm)	HS12-AF-KIT
17" Classic Slim Kit (435 mm)	HS17-AF-KIT
22" Classic Slim Kit (560 mm)	HS22-AF-KIT

Hawkeye® Classic Hardy Borescope Kits

Lengths: 7" 12" and 17"	Model #
7" Classic Hardy Kit (180 mm)	HH07-AF-KIT
12" Classic Hardy Kit (305 mm)	HH12-AF-KIT
17" Classic Hardy Kit (435 mm)	HH17-AF-KIT
22" Classic Hardy Kit (560 mm)	HH22-AF-KIT



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.

Classic Slim™ .165" (4.20 mm)

At .165 inches in diameter, Hawkeye® Classic Slim Borescopes are by far our best selling borescopes. They are slim enough to fit into small holes, but provide plenty of light. The result is sharp, bright, clear images. Use Hawkeye Classic Slim Borescopes to inspect bores and cross-holes in machined metal parts.

Classic Hardy™ .250" (6.35 mm)

When access holes are large enough, Hawkeye® Classic Hardy Borescopes bring much more light to the subject. Their rugged, thick-walled stainless steel tubes have an outside diameter of a quarter-inch. Classic Hardys deliver 3x the illumination of the Classic Slim.

The Classic Hardy is ideal for inspecting castings, engine cylinders, internal welds, and pipes.

Hawkeye Classic Borescopes focus by rotating the eyecup. Cameras attach to the eyecup, so they turn too, rotating the image. We recommend Hawkeye® Pro Borescopes with cameras, because their independent focusing rings avoid camera and image rotation.

Made in USA





BLUE
PRECISION BORESCOPIES

Hawkeye® Blue Swing Prism Borescopes have a tiny prism at the tip that pivots, or "swings," to vary the direction-of-view from 16° to 118°. A ring on the borescope body controls the prism direction. The field-of-view is 45°, so the borescope effectively sees from -7° to 133°.

Another ring focuses the borescope, and a third rotates the borescope tube over more than 360°, sideways in any direction, without turning the body.

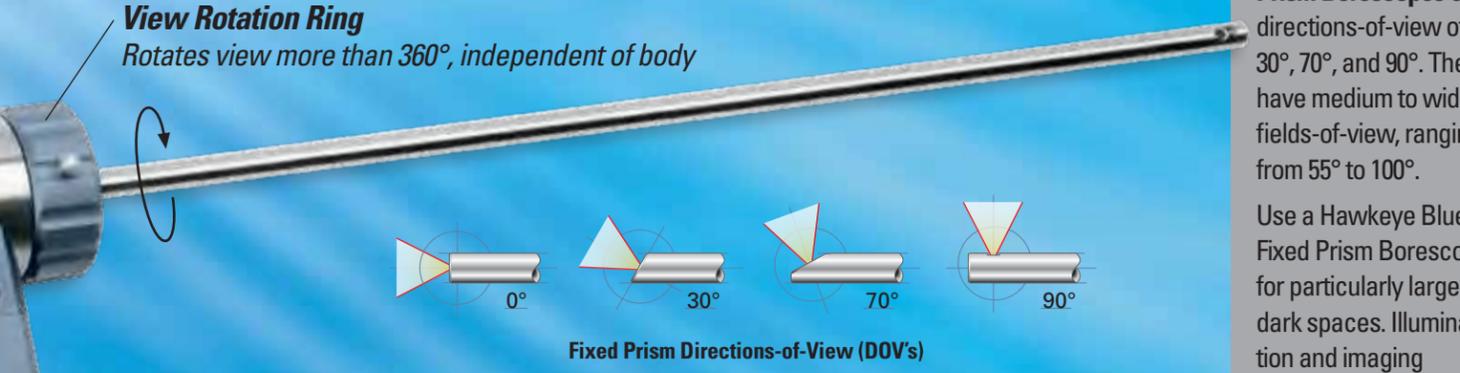
Diesel engine mechanics use Swing Prism Borescopes to examine cylinders, pistons, and valves. Aircraft engine mechanics use the Swing Prism to locate and investigate FOD (foreign object damage and debris) in jet engines.



Hawkeye® Blue Rigid Swing Prism Borescopes

Diameter	Length	DOV	FOV	Model #
○ .237" (6.0 mm)	9.60" (245 mm)	16° to 118°	45°	HBS 060 245 045
○ .237" (6.0 mm)	17.91" (455 mm)	16° to 118°	45°	HBS 060 455 045
○ .315" (8.0 mm)	12.80" (325 mm)	16° to 118°	45°	HBS 080 325 045
○ .355" (9.0 mm)	23.80" (605 mm)	16° to 118°	45°	HBS 090 605 045
○ .355" (9.0 mm)	31.69" (805 mm)	16° to 118°	45°	HBS 090 805 045

Other lengths available by special order.



Hawkeye® Blue Fixed Prism Borescopes offer directions-of-view of 0°, 30°, 70°, and 90°. They have medium to wide fields-of-view, ranging from 55° to 100°.

Use a Hawkeye Blue Fixed Prism Borescope for particularly large, dark spaces. Illumination and imaging channels are independent on Hawkeye Blue Rigid Borescopes, increasing image clarity and contrast.

In comparison, when borescopes with mirror tubes are used to inspect large, dark areas, the illuminating light and the image can intermix, lowering clarity and contrast if the mirror is not clean.

Hawkeye® Blue Fixed Prism Borescopes

Diameter	Length	DOV	FOV	Model #
○ .110" (2.8 mm)	4.72" (120 mm)	30°	90°	HBR 028 122 090
○ .110" (2.8 mm)	7.28" (185 mm)	90°	55°	HBR 028 187 055
○ .110" (2.8 mm)	12.36" (314 mm)	90°	55°	HBR 028 317 055
○ .157" (4.0 mm)	4.72" (120 mm)	70°	55°	HBR 040 125 055
○ .157" (4.0 mm)	6.89" (175 mm)	90°	55°	HBR 040 177 055
○ .157" (4.0 mm)	9.65" (245 mm)	30°	55°	HBR 040 242 055
○ .157" (4.0 mm)	11.81" (300 mm)	90°	55°	HBR 040 307 055
○ .157" (4.0 mm)	14.57" (370 mm)	70°	55°	HBR 040 375 055
○ .157" (4.0 mm)	16.73" (425 mm)	90°	55°	HBR 040 427 055
○ .228" (5.8 mm)	8.07" (205 mm)	90°	65°	HBR 058 217 065
○ .228" (5.8 mm)	13.58" (345 mm)	70°	65°	HBR 058 355 065
○ .228" (5.8 mm)	13.58" (345 mm)	90°	65°	HBR 058 357 065
○ .228" (5.8 mm)	19.09" (485 mm)	90°	65°	HBR 058 497 065
○ .228" (5.8 mm)	24.6" (625 mm)	90°	65°	HBR 058 627 065
○ .315" (8.0 mm)	12.79" (325 mm)	90°	65°	HBR 080 327 065
○ .315" (8.0 mm)	28.54" (725 mm)	90°	65°	HBR 080 727 065
○ .315" (8.0 mm)	32.91" (836 mm)	0°	100°	HBR 080 840 100

Other lengths available by special order.



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.

We deliver each Hawkeye Blue Swing and Fixed Prism Borescope in a lockable, fitted carrying case, for security and protection.

Made in Germany



PRECISION BORESCOPES

Hawkeye® Pro Flexible Borescopes incorporate an 18,000 fiber, acid-leached imaging bundle, delivering truly excellent image resolution, sharpness, detail, and contrast. Lower cost alternatives do not deliver image quality nearly this high. Pro Flexibles also offer 2-, or 4-way articulation. Control the direction-of-view of the tip over a 240° range (±120°), using a thumb-lever on the aluminum borescope body. The lever can also be locked to hold a particular view.

Quality optics at a great price!
In our most popular length and diameters

Directional Control
 Articulate the tip with lever

Durable, Tungsten Sheath
 Protection with flexibility

90° Mirror Tip

90° Prism Tip
 (Optional)

Included with 5.0 mm only

Available for 5.0 and 6.0 mm

4 Diameters

.130", .157", .200" and .236"
 (3.3, 4.0, 5.0 and 6.0 mm)



Diameters

- .130" Dia. (3.3 mm)
- .157" Dia. (4.0 mm)
- .200" Dia. (5.0 mm)
- .236" Dia. (6.0 mm)

Hawkeye® Pro Flexible Borescopes are available in diameters of 3.3, 4.0, 5.0 and 6.0 mm. The 3.3 mm can look inside very small bores, and navigate tight bends. The 4.0 mm is perfect for specialized applications like aircraft and helicopter maintenance inspection. Hawkeye® Pro Flexible Borescopes are tungsten-sheathed and each scope comes complete with the powerful, rechargeable SuperNOVA™ Light. These versatile borescopes set a new standard of excellence in quality and functionality, at a very reasonable price.



You can see the difference!



Hawkeye® Pro Flexible Borescope through-the-scope image



Low cost borescope through-the-scope image

Each Hawkeye® Pro Flexible Borescope Kit contains:

- Hawkeye® Pro Flexible Precision Borescope
- Hawkeye® Pro Flexible 90° Mirror Tip (5 mm only)
- Hawkeye® SuperNOVA™ Light and Charger
- Rugged Hawkeye® Carrying Case
- Hawkeye® Cleaning Kit

Hawkeye® Pro Flexible Borescope Kits

Diameter	Length	Articulation	DOV	FOV	Fibers	Sheath	Model #
.130" (3.3 mm)	33.5" (0.85 m)	2-way	0°	45°	18,000	Tungsten	PFB3-NVK
.157" (4.0 mm)	33.5" (0.85 m)	2-way	0°	45°	18,000	Tungsten	PFB4-NVK
.200" (5.0 mm)	33.5" (0.85 m)	2-way	0°	45°	18,000	Tungsten	PFB5-NVK
.236" (6.0 mm)	33.5" (0.85 m)	2-way	0°	45°	18,000	Tungsten	PFB6-NVK
.236" (6.0 mm)	33.5" (0.85 m)	4-way	0°	45°	18,000	Tungsten	PFB6-4-NVK

For individual borescopes and kit components see pages 30 - 31.



Made in USA



Made in USA



BLUE

PRECISION BORESCOPIES

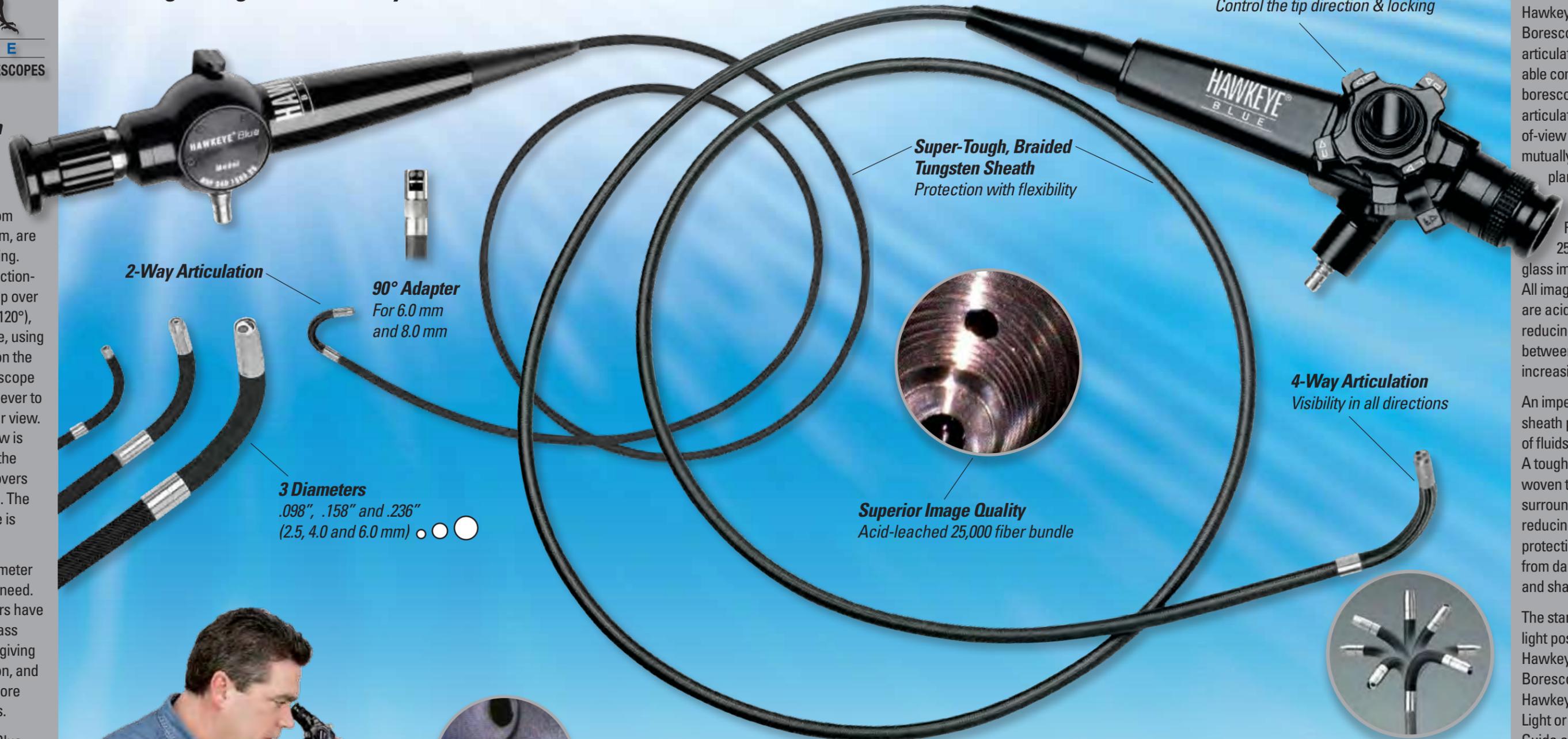
2-Way Articulation

Four Hawkeye® Blue Flexible Borescopes, in diameters from 2.5 mm to 6.0 mm, are 2-way articulating. Control the direction-of-view of the tip over a 240° range ($\pm 120^\circ$), in a single plane, using a thumb-lever on the aluminum borescope body. Lock the lever to hold a particular view. The field-of-view is 45°, except for the 4 mm, which covers a wide 90° field. The viewable image is large and clear.

Choose the diameter and length you need. Larger diameters have more optical glass imaging fibers, giving higher resolution, and thus sharper, more detailed images.

Use Hawkeye Blue Flexible Borescopes to inspect complex castings like engine blocks, turbochargers, tubes, pipes, and turbine engines.

High-quality, smaller diameters, longer lengths, 2- or 4-way articulation!



2-Way Articulation

90° Adapter
For 6.0 mm and 8.0 mm

3 Diameters
.098", .158" and .236"
(2.5, 4.0 and 6.0 mm)

Super-Tough, Braided Tungsten Sheath
Protection with flexibility

Superior Image Quality
Acid-leached 25,000 fiber bundle

Directional Control
Control the tip direction & locking

4-Way Articulation
Visibility in all directions

4-Way Articulation

The 8.0 mm diameter Hawkeye® Blue Flexible Borescope is 4-way articulating. Two lockable controls on the borescope body articulate the direction-of-view by $\pm 120^\circ$, on two mutually perpendicular planes.

The 8.0 mm Blue Flexible contains 25,000 optical glass imaging fibers. All imaging fiber bundles are acid-leached, reducing crosstalk between fibers and increasing contrast.

An impermeable plastic sheath prevents entry of fluids like fuel or oil. A tough, durable, woven tungsten sheath surrounds the plastic, reducing friction and protecting the scope from damage by burrs and sharp edges.

The standard ACMI light post on all Hawkeye Blue Flexible Borescopes accepts a Hawkeye® SuperNOVA™ Light or a Luxxor® Light Guide and Light. See pages 28 - 29.

Hawkeye Blue Flexible Borescopes come in rugged, lockable carrying cases, with foam inserts for protection.

Made in USA



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.

Hawkeye® Blue Flexible Borescopes

Diameter	Length	Articulation	DOV	FOV	Fibers	Sheath	Model #
.098" (2.5 mm)	27.5" (0.7 m)	2-way	0° ¹	60°	7,000	Tungsten	HBF 025 0700 60
.098" (2.5 mm)	47.2" (1.2 m)	2-way	0° ¹	60°	7,000	Tungsten	HBF 025 1200 60
.158" (4.0 mm)	59.1" (1.5 m)	2-way	0° ¹	90°	18,000	Tungsten	HBF 040 1500 90
.236" (6.0 mm)	70.8" (1.8 m)	2-way	0° ²	45°	25,000	Tungsten	HBF 060 1800 45
.314" (8.0 mm)	70.8" (1.8 m)	4-way	0° ²	45°	25,000	Tungsten	HBF 080 1800 45

Other lengths available by special order.

¹ Available in 0° standard or 90° by special order.

² 90° Adapters available for 6 mm and 8 mm.

Made in USA



PRECISION BORESCOPIES

The Hawkeye® Classic Flexible Borescope has 18,000 optical glass fibers, delivering high resolution, sharpness, and image detail. An acid-leached fiber imaging bundle increases image contrast. Image quality is further enhanced by the super bright Hawkeye® SuperNOVA™ Light. The plastic-coated, stainless steel gooseneck sheath takes a set before insertion into a cavity. The Classic Flexible is simpler and much less expensive than articulating flexible borescopes.

The 90° Mirror Tip changes the direction-of-view of the Hawkeye Classic Flexible Borescope, just as mirror tubes do for the Hawkeye® Pro and Classic Rigid Borescopes. Use the Classic Flexible when indirect access is required, but the path is simple enough to set the borescope before entry.

Hawkeye Classic Flexible Borescopes are not repairable; we offer a 10% discount on their replacement.

Made in USA

Robust flexibility and economy!

○ Outside Diameter .310 inches (7.9 mm)

18,000 Fibers

Plastic-Coated, Stainless Steel Gooseneck Sheath
Simply set the shape before insertion



Timing chain in Honda 500 cc motorcycle

○ Outside Diameter .320 inches (8.1 mm)

Mirror Tip
Easily threads on for 90° view



Hawkeye® Classic Flexible Borescope Kit

Diameter	Length	Articulation	DOV	FOV	Fibers	Sheath	Model #
.310" (7.9 mm)	39.4" (1.0 m)	None	0° & 90°	45°	18,000	Coated Stainless	HFB2-NVK

For individual borescopes and kit components see pages 30 - 31.

MicroFlex Semi-Rigid FOV 55°, DOV 0° or 90°

Outside Diameter .035 inches (0.9 mm) ◦

MicroFlex Flexible FOV 55°, DOV 0°

Three Outside Diameters ◦ ◦ ◦
.020, .035, and .059 inches (0.5 mm, 0.9 mm, and 1.5 mm)

Every Hawkeye® Pro MicroFlex Borescope Includes:

- Hawkeye® Semi-Rigid or Flexible Borescope
- C-Mount Adapter
- Rugged Hawkeye® Carrying Case
- Hawkeye® Cleaning Kit

(Light Sources and Light Guides sold separately)

Hawkeye® MicroFlex Semi-Rigid Borescopes

Diameter	Length	DOV	Model	Model #
.035" (0.9 mm)	6" (150 mm)	0°	Semi-Rigid	HSR 009 0150 55
.035" (0.9 mm)	6" (150 mm)	90°	Semi-Rigid	HSR 009 0159 55

Hawkeye® MicroFlex Flexible Borescopes

Diameter	Length	DOV	Model	Model #
.020" (0.5 mm)	19.6" (0.5 m)	0°	Flexible	HSF 005 0600 55
.035" (0.9 mm)	39.4" (1.0 m)	0°	Flexible	HSF 009 1000 55
.059" (1.5 mm)	31.5" (0.8 m)	0°	Flexible	HSF 015 0800 70

Optional Accessories

Luxxor® Video Camera System (Pgs. 12 - 13)	LXX-VBSM
Luxxor® 24 Light Source	LXX24
Luxxor® Light Guide	LXXLG
Sony® Professional Video Monitor	SVM-15
USB 2.0 Image Capture Interface	VC-USB2



Video and lighting sold separately. See pages 12 - 13 and 28 - 29.

Semi-Rigid

.035" (0.9 mm)

The Nitinol-sheathed Hawkeye® MicroFlex Semi-Rigid Borescopes contain 10,000 fiber imaging bundles, are 6 inches long, and offer 0° and 90° views.

Flexible

.020" (0.5 mm)

.035" (0.9 mm)

.059" (1.5 mm)

The excellent image quality Hawkeye® MicroFlex Flexible Borescopes deliver, in these very small micro diameters, is nothing short of amazing! You can access even the smallest opening, and utilize a 9-inch bend radius when the entry path is not straight. The polyamide-sheathed 0.5 and 0.9 mm models have 10,000 pixel fiber imaging bundles, and the plastic-sheathed 1.5 mm has a 30,000 fiber bundle. The eyepiece is easily replaced with a video adapter to use a C-Mount camera. Quickly and easily inspect cooling holes inside turbine blades, cannulas, catheters, needles, trocars, valves in medical devices, and many other micro manufactured parts.

Made in USA





Hawkeye® Portable Light Sources are powerful, delivering go-anywhere convenience!

Any Hawkeye® or Luxxor® Light Source can be used with any Hawkeye® Rigid or Flexible Borescope

PRECISION BORESCOPIES



Mini Maglite® Flashlight

The Mini Maglite® flashlight comes with Hawkeye® Classic Borescope Kits. It gives plenty of light for shorter working distances and reflective surfaces.

Hawkeye® LED Light

This adjustable LED light source delivers brighter, whiter light than the Mini Maglite® flashlight, and offers much longer lamp life. Operates on standard AA batteries.

Hawkeye® SuperNOVA™

The Hawkeye® SuperNOVA™ Light comes with all Hawkeye® Pro Borescope kits, rigid and flexible. This xenon doped halogen light is bright enough for all but the largest and darkest cavities. It shows detail you would miss with a less powerful light.

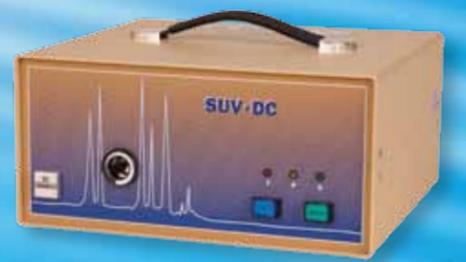
	Rel. Intens.	Adj. Intens.	Power Source	Run Time	Lamp Life	Weight	Model #
Mini-Maglite® Flashlight	1X	Yes	AA Alkaline	1 hr. (cont.)	2 hrs. (approx.)	5 oz. (142 g)	MMAA
Hawkeye® LED Light	12X	Yes	AA Alkaline	3 hrs. (cont.)	50,000 hrs.	4 oz. (113 g)	HAWKEYE LED
Hawkeye® SuperNOVA™	10X	Yes	Rechrg. Li-Ion	3 hrs. (cont.)	25 hrs.	13.5 oz. (380 g)	SuperNOVA



Dual UV & White Light Inspection

UV Light Source

The 200-watt, Mercury Arc Lamp, UV Light Source is amazingly bright, and allows users to easily switch from white light to ultraviolet (UV) light! In the UV mode it works best with shorter length Hawkeye rigid borescopes. When used in conjunction with fluorescent dye penetrants, it provides reliable, non-destructive inspection of mission-critical parts, such as those used in aerospace and automotive applications. A Liquid Light Guide is required.



	Rel. Intens.	Adj. Intens.	Power Source	Run Time	Lamp Life	Weight	Model #
UV-Light Source²	90X	Yes	10V - 260V	Indefinite	1500 hrs.	20 lbs. (9.0 kg)	UV-LIGHT
 Liquid Light Guide (Connects Lumatec UV Light to Hawkeye® Borescopes)					Length 6'		UV-LIGHT GUIDE

²Liquid Light Guide required.

Customer Service

30-Day Customer Satisfaction Guarantee for Direct Customers

If, for any reason, you are not satisfied with your purchase from us:

- Contact customer service within 30 days.
- We give you a Return Merchandise Authorization (RMA) number.
- You ship the product back, in **original condition**, with all packaging.
- We refund the purchase price, minus our shipping and handling costs.
- If you bought from one of our dealers, please contact them directly.

Please call for an RMA number first. We will not accept products without it.

Limited Warranty

Gradient Lens Corporation warrants that all Hawkeye borescopes and accessories will be free of defects in materials and workmanship for one year from the date of first retail purchase, with the exception of broken optics.

Video and lighting products have manufacturers' warranties of one year.

Service

For warranty claims, repairs, or if you are not sure which:

- Contact customer service
- We give you a Return Merchandise Authorization number
- You ship the product back. Pack it well.

- If the product meets our warranty conditions, we will repair or replace it. If it does not, there are two options:
 - Get an estimate of repair or replacement cost.
 - Have us repair it without an estimate.
- If we cannot repair a Hawkeye Pro or Classic Rigid Borescope, we will replace it at a 20% discount off the current list price, in return for the broken one.
- Service charges for Hawkeye Blue Borescopes require individual factory estimates, which take longer. We offer a 10% discount on replacement, if not repairable.
- We offer a 10% discount on the replacement of Hawkeye Pro MicroFlex, Classic Flexible, and Pro Flexible borescopes when they are not repairable.

All prices and specifications subject to change without notice.

Payment

Domestic customers: We accept most major credit cards, bank and personal checks (subject to clearance). We offer net 30-day accounts for approved businesses, subject to delay for processing.

International customers: We accept credit cards, wire transfers, or US dollar bank drafts. There is a US \$30 export-processing fee, for international shipments. Contact us for more information.

Shipping

UPS, FedEx, and DHL Global (Not the US Postal Service)



Luxxor® Benchtop Light Sources use super-bright and efficient metal-halide arc lamps.



Luxxor® 24 Light Source

The Luxxor® 24 Light has a 24-watt metal-halide arc lamp, for very high brightness. It is 60% brighter than a typical 150-watt halogen light. Use it for dark, deep subjects and video or still photography.



Luxxor® 50 Light Source

To photograph very large, dark cavities, like the combustion chambers of turbine engines, marine diesel cylinders, or tanks, the Luxxor 50 Light Source is incredibly powerful. Its 50-watt metal-halide arc lamp is twice as bright as the Luxxor 24.

	Rel. Intens.	Adj. Intens.	Power Source	Run Time	Lamp Life	Weight	Model #
Luxxor® 24¹	30X	Yes	110V - 240V	Indefinite	500 hrs.	2.3 lbs. (1.0 kg)	LXX24
Luxxor® 50¹	60X	Yes	110V	Indefinite	2500 hrs.	5.3 lbs. (2.4 kg)	LXX50
 Luxxor® Light Guide (Required to connect all Luxxor® Light Sources to Hawkeye® Borescopes)					Length 7'		LXXLG

¹ Luxxor Light Guide required.



Hawkeye® Angled Eyepiece

When you cannot position your eye close to a borescope eyecup, the Hawkeye Angled Eyepiece makes it accessible. It clamps onto the eyecup and reflects the image 90° through its own focusing eyepiece.

Angled Eyepiece (AE-9003)



The Hawkeye Angled Eyepiece inverts the image, correcting the image inversion of a mirror tube. Its excellent optics sustain the high image quality of the borescopes.

Video Coupler Lens

The Video Coupler Lens connects borescopes to video cameras for live video inspection and documentation. They deliver a full field-of-view and are available in 25 mm, 35 mm and 75 mm focal lengths.



Item	Catalog #
25 mm Focal Length Coupler	VC-25
35 mm Focal Length Coupler	VC-35
35 mm Adjustable Focus Coupler	HVA-2
75 mm Focal Length Coupler	VC-75

Protective Sheaths

Protective sheaths fit over Pro or Classic rigid borescopes. We offer them in all diameters for 3" - 22" scopes. Call, or visit, our website for Catalog #.



Item
Protective Sheaths

Components

Most customers buy complete Hawkeye® Pro and Classic Borescope Kits. However, all of the kit components are also available separately and are listed below. **Prices are for borescopes only. Light sources and cases are sold separately.**

Hawkeye® V2 Video Borescope Accessories

Item	Catalog #
V2 Charger	V2 Charger
Spare Battery	PVM50 BATTERY
Spare Battery Charger	PVM50 Charger
V2 LED Lightsource	PVS LED
Lightsource Batteries	PVS-LED-BATT
Lightsource Battery Charger	PVS-LED-BT-CHGR

Hawkeye® Classic Precision Borescopes

Diameter	Length	Catalog #	Page
Slim .165"	7"	HS07-AF	19
Slim .165"	12"	HS12-AF	19
Slim .165"	17"	HS17-AF	19
Slim .165"	22"	HS22-AF	19
Hardy .250"	7"	HH07-AF	19
Hardy .250"	12"	HH12-AF	19
Hardy .250"	17"	HH17-AF	19
Hardy .250"	22"	HH22-AF	19

Hawkeye® Pro Precision Borescopes

Diameter	Length	Catalog #	Page
MicroSlim .073"	3"	MS03	16
MicroSlim .073"	5"	MS05	16
MicroSlim .073"	7"	MS07	16

Hawkeye® Pro Precision Borescopes (cont'd)

Diameter	Length	Catalog #	Page
SuperSlim .098"	4"	PSS04	16
SuperSlim .098"	8"	PSS08	16
SuperSlim .110"	10"	PSS10	16
SuperSlim .110"	14"	PSS14	16
SuperSlim .110"	17"	PSS17	16
Slim .165"	2"	PS02	15
Slim .165"	7"	PS07	15
Slim .165"	12"	PS12	15
Slim .165"	17"	PS17	15
Slim .165"	22"	PS22	15
Slim Prism	7"	PS07-30	15
Slim Prism	12"	PS12-30	15
Slim Prism	17"	PS17-30	15
Hardy .250"	7"	PH07	17
Hardy .250"	12"	PH12	17
Hardy .250"	17"	PH17	17
Hardy .250"	22"	PH22	17
Super Hardy .283"	28"	PSH28	17
Super Hardy .283"	37"	PSH37	17

Hawkeye® Classic Flexible Borescopes

Diameter	Length	Catalog #	Page
Classic Flex .310"	39.4"	HFB2	26
Classic 90° Mirror Tip		HFB-90-2	26



Hawkeye® Pro Flexible Borescopes



Diameter	Length	Catalog #	Page
Pro Flex .130"	33.5"	PFB3	22
Pro Flex .157"	33.5"	PFB4	22
Pro Flex .200"	33.5"	PFB5	22
Pro Flex .236"	33.5"	PFB6	22
Pro Flex .236"	33.5"	PFB6-4	22
90° Prism Tip .200"		FTP-5-90	22
90° Mirror Tip .200"		FTP-5-PFB	22

Hawkeye® Blue Flexible 90° Adapters

Item	Catalog #	Page
6 mm 90° Prism Tip	FTP-6-90	24
8 mm 90° Prism Tip	FTP-8-90	24

Replacement Lamps & Batteries

Item	Catalog #	Qty.
SuperNOVA™ Lamps	SN-BULB-KIT	Pkg. of 12
Mini Maglite® Lamps	MM1-LAMP-KIT	Pkg. of 24
Luxxor® 24 Lamp	LXX-LAMP-24	one (1)
Luxxor® 50 Lamp	LXX-LAMP-50	one (1)
UV Lamp	UV-LAMP	one (1)
SuperNOVA™ Battery Kit	SN-BATT-KIT	two (2)

Best service in borescopes, bar none.

Diameter	Length	Description	Catalog #
Hardy .250"	7"	Borescope Repair	REP-HH07
Hardy .250"	12"	Borescope Repair	REP-HH12
Hardy .250"	17"	Borescope Repair	REP-HH17
Hardy .250"	22"	Borescope Repair	REP-HH22
Super Hardy	28"	Borescope Repair	REP-PSH28
Super Hardy	37"	Borescope Repair	REP-PSH37
Slim .165"	7"	Borescope Repair	REP-HS07
Slim .165"	12"	Borescope Repair	REP-HS12
Slim .165"	17"	Borescope Repair	REP-HS17
Slim .165"	22"	Borescope Repair	REP-HS22
Slim Prism	All	Objective Lens Repair	REP-PSPO
Slim Prism	7"	Rod Repair	REP-PS07-30

Please call for an estimate regarding repairs of fiberscopes and videoscopes.

Hawkeye®, Luxxor®, and endoGRINS® are trademarks of Gradient Lens Corporation. SONY® is a trademark of Sony Corporation of America. Mini Maglite® is a trademark of Mag Instrument, Inc., as is the shape, style, and overall appearance of the Mini Maglite® flashlight. Mag Instrument, Inc. is not affiliated with Gradient Lens Corporation. The contents of this product were combined and marketed by Gradient Lens Corporation. Mag Instrument, Inc. does not sponsor, warrant, or endorse the combination.

Hawkeye® Pro & Classic Borescope Mirror Tubes



Diameter	Length	Catalog #	Page
MicroSlim .084"	3"	MTMS03	16
MicroSlim .084"	5"	MTMS05	16
MicroSlim .084"	7"	MTMS07	16
SuperSlim .109"	4"	MTSS04	16
SuperSlim .109"	8"	MTSS08	16
SuperSlim .150"	10"	MTSS10	16
SuperSlim .150"	14"	MTSS14	16
SuperSlim .150"	17"	MTSS17	16
Slim .188"	2"	MTS02	15, 19
Slim .188"	7"	MTS07	15, 19
Slim .188"	12"	MTS12	15, 19
Slim .188"	17"	MTS17	15, 19
Slim .188"	22"	MTS22	15, 19
Hardy .313"	7"	MTH07	17, 19
Hardy .313"	12"	MTH12	17, 19
Hardy .313"	17"	MTH17	17, 19
Hardy .313"	22"	MTH22	17, 19
Super Hardy .312"	28"	MTSH28	19
Super Hardy .312"	37"	MTSH37	19

Repairs

Diameter	Length	Description	Catalog #
Slim Prism	12"	Rod Repair	REP-PS12-30
Slim Prism	17"	Rod Repair	REP-PS17-30
Classic to Pro Upgrade			RETRO
MicroSlim .073"	3"	Borescope Repair	REP-HMS03
MicroSlim .073"	5"	Borescope Repair	REP-HMS05
MicroSlim .073"	7"	Borescope Repair	REP-HMS07
SuperSlim .098"	4"	Borescope Repair	REP-HSS04
SuperSlim .098"	8"	Borescope Repair	REP-HSS08
SuperSlim .110"	10"	Borescope Repair	REP-PSS10
SuperSlim .110"	14"	Borescope Repair	REP-PSS14
SuperSlim .110"	17"	Borescope Repair	REP-PSS17
All	All	Mirror Replacement	MREP