

Endoscope for Industry



Image fiber type

Lightscope



Endoscope for industry

Borescope



CCD Camera Type

CCD Video
Endoscope

Image fiber type

Lightscope

Internal light source type

Interlock
Flexible

Uses a white LED

Diameter of endoscope end

5 mm

6 mm

8 mm

Flexible type

Interlock type

Dual type

Interlock

Interlock type



Maintains its flexible position

Flexible

Flexible type



Flexible so it can be inserted into pipes

Improved resolution!

Resolution of **7,400 to 10,000 pixels**

NEW

For a clearer image!

Portable so it can be used anywhere.

- More pixels and greater resolution than the previous MSPS, MSPI Series. (Previous model: 3,500 pixels → New model: 7,400 pixels)
- A long-life white LED is used as the light source. Batteries also last longer.
- A clear image is obtained by using white light with a high color temperature.
- The tip and cord areas are waterproof (from 1 to 1.3 atmospheres).
- Camera photography is possible with a digital camera adapter (sold separately).
- The distance from the object can be any distance greater than 10 mm.
- If a right angle adapter (sold separately) is attached and the endoscope is rotated, a 360° view can be obtained.

The ideal endoscope for studying and making observations within tight areas and deep spaces.

The distance from the object can be adjusted from any distance greater than 10 mm, and with a waterproof cable, there is no possibility of water leakage. An interlocking type and flexible type is available, offering clear viewing, photographing and recording of clear image data.



★ Comparison of images with previous models (company comparison)

MSPS-1000IV
7,400 pixels
(white LED)

MSPS-1000III
3,500 pixels
(halogen lamp)



SUS flexible pipe (internal diameter ø10)

Accessory

For the Lightscope

■ Standard set (supplied with the Lightscope)

Battery handle



Lightscope hard carry case

Protects the scope and makes carrying the Lightscope easy



■ Optional extras

90° right angle adapter

Allows observation of internal walls of pipes.



Dimensions: Small ø7.5 mm
Large ø10 mm

CCD Camera Type

CCD Video Endoscope

Internal light source type

Interlock

Diameter of endoscope end **9.8 mm**

Interlock type

Allows the clear images displayed on a TV monitor to be studied further.

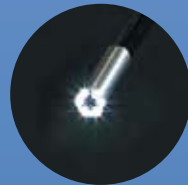


Rusting pipe



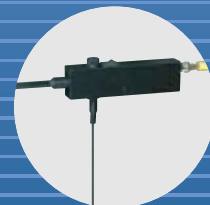
Car muffler

The ideal endoscope for studying and making observations within tight areas and deep spaces. This CCD camera type industrial video endoscope allows clear images to be displayed and studied on a TV monitor.



With the battery case attached

- Clear images obtained from the CCD camera.
- Bright images obtained using 6 chip type LEDs.
- A group of people can study the image displayed on a TV monitor.
- Video data can be recorded and used for a variety of purposes.
- The distance from the object can be any distance greater than 40 mm.
- If a right angle adapter (sold separately) is attached and the endoscope is rotated, a 360° view can be obtained.
- The image can be inverted by using the selector switch on the endoscope. (a normal view can be obtained when the right angle adapter is attached)



With the AC adapter attached

Accessory

For the CCD Video Endoscope

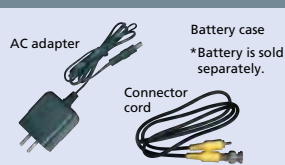
Standard set (supplied with the CCD Video Endoscope)

CCD Video Endoscope hard carry case

Protects the scope and makes carrying the CCD Video Endoscope easy



Accessories



Optional extras

90° right angle adapter

Allows observation of internal walls of pipes.



Dimensions: ø11 mm

LCD monitor

Small LCD monitor that is easy to carry around.



Uses of the Endoscope for industry

Automobiles Engines, Transmissions, Differentials, Air conditioners

Building Inspections Observation of asbestos, Water pipes, Condition of rust, Condition of defects

Gas Inside pipes and exhaust openings

Aero/space Turbine blades, Combustion chamber interiors, Rocket engines

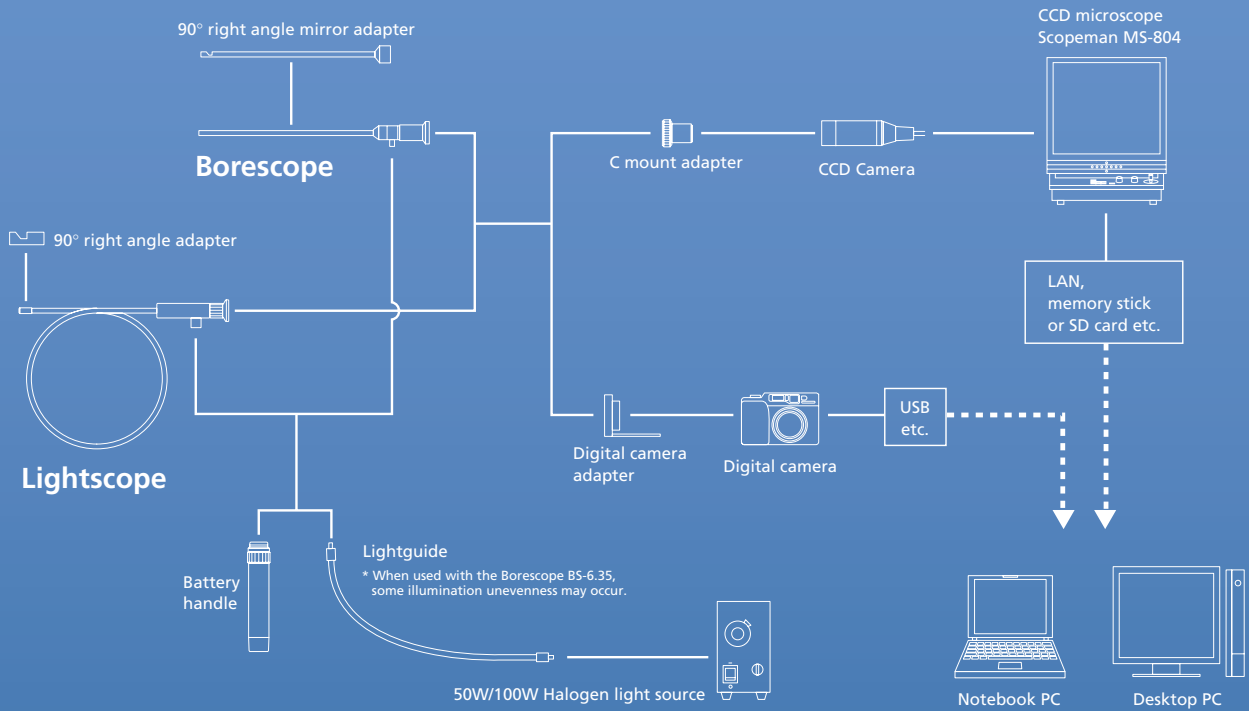
Sewage pipes Inside pipes, Toilet clogs, Other plumbing problems

Petrochemical Plants Process pipes, Pressure storage tanks, Heat exchangers, Boilers

Vessels Boiler internals, Turbine internals, Diesel engine

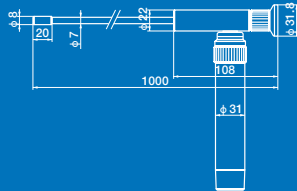


SYSTEM FLOW

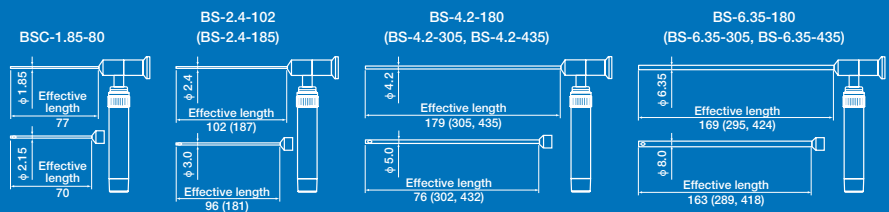


Dimensions

Lightscope (MSPI / MSPS-1000V)



Borescope



Common accessories for the Lightscope and Borescope

Optional extras

<p>Digital camera adapter</p>  <p>MDA-M1</p> <p>A digital camera adapter is available for optimum photography at client locations or work sites. This adapter allows a large range of different digital cameras to be attached. The adapter allows groups of people on site to check images, take photographs, record data and file images on computers.</p>	<p>C mount adapter</p>  <p>Attachment adapter for a CCD camera. Allows a camera to be attached to the Lightscope to view images.</p>	<p>Light source unit</p>  <p>A compact and lightweight, high luminance and highly reliable illumination device.</p>	<p>LSSG-1000V Video Endoscope Light Guide</p>  <p>Delivers light effectively from the light source unit to the endoscope.</p> <p>(flexible type)</p>
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Endoscope for industry

Borescope

Diameter of endoscope end ○ 1.85 mm ○ 2.4 mm ○ 4.2 mm ○ 6.35 mm

Internal light source type

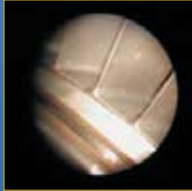
Uses a white LED

NEW



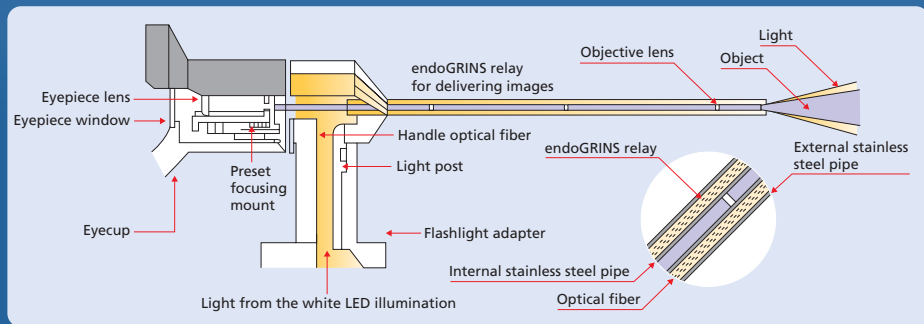
For studying and observing inside spaces with no light or direct view.
Non-destructive endoscope that makes visual inspections so simple.

- Instead of using an expensive and compact lens, multiple glass rod lenses are used to keep costs down.
- The special construction means reduced distortion or blurring due to lens aberration.
- Focus adjustments mean the object can be at any distance from the tip of the endoscope.
- Camera photography is possible with a digital camera adapter (sold separately).
- If a right angle adapter (sold separately) is attached and the endoscope is rotated, a 360° view can be obtained.



Construction

Construction of the Borescope is extremely simple. An optical fiber tube is passed through a thin stainless steel pipe to illuminate the object, delivering clear images of the object to the eyepiece. The Borescope offers easy access to observations within tight areas and deep spaces at an unprecedented cost performance.



For the Borescope

■ Standard set (supplied with the Borescope)

Battery handle

90° right angle adapter

Allows observation of internal walls of pipes.

Borescope hard carry case

Aluminum hard carry case that protects the scope and makes carrying the scope easy.

● Lightscope

Category	Type	Interlock type (Maintains its flexible position)					Flexible type (Flexible so it can be inserted into pipes)				
	Model Name	MSPI-1000IV	MSPI-2000IV	MSPI-3000IV	MSHI-1000IV	MSGI-1350IV	MSPS-1000IV	MSPS-2000IV	MSPS-3000IV	MSHS-1000IV	MSGS-1350IV
Fiber	Material	Acrylic			Glass		Acrylic			Glass	
	Resolution	7,400 pixels			7,500 pixels	10,000 pixels	7,400 pixels			7,500 pixels	10,000 pixels
	End diameter	ø8 mm			ø6 mm	ø8 mm	ø8 mm			ø5 mm	ø8 mm
	Strand diameter	20 µm			15 µm	—	20 µm			15 µm	—
Tube	Material	SUS Interlock + PVC sheath					SUS Flexible + PVC sheath				
	Maximum bending radius	100 mm (maximum 360°)					40 mm (maximum 360°)				
	Effective length of standard items (waterproof type case supplied)	1,000 mm	2,000 mm	3,000 mm	1,000 mm	1,350 mm	1,000 mm	2,000 mm	3,000 mm	1,000 mm	1,350 mm
Light source	LED	White light 1W									
	Power source	2 × size C batteries (sold separately)									
Optical system	Direction of view	Straight view, right angle view possible with an optional adapter									
	Angle of view	Approximately 60°									
	Focus length	10 mm to infinity (fixed focus point)									
Waterproofing	The tip and tube are water proof (from 1 to 1.3 atmospheres (1013 to 1317 hPa)). Other parts not waterproof.										
Operating temperature range	Output end: -20°C to 60°C / Battery handle: 0°C to 40°C										


● Borescope

Model	BSC-1.85-80IV	BS-2.4-102IV	BS-2.4-185IV	BS-4.2-180IV	BS-4.2-305IV	BS-4.2-435IV	BS-6.35-180IV	BS-6.35-305IV	BS-6.35-435IV	
Main body	Diameter of endoscope end	ø1.85 mm	ø2.4 mm	ø4.2 mm			ø6.35 mm			
	Right angle adapter end diameter	ø2.15 mm	ø3.0 mm	ø5.0 mm			ø8.0 mm			
	Effective length	77 mm	102 mm	187 mm	179 mm	305 mm	435 mm	169 mm	295 mm	424 mm
Light source	Lamp	White LED								
	Power source	2 × size C batteries (sold separately)								
Direction of view	Straight / 90° right angle view (when using an adapter)									
Angle of view	32°			37°			42°			
Focus length	10 mm to infinity									
Waterproofing	Not waterproof									
Operating temperature range	Endoscope end: -40°C to 120°C / Battery handle: 0°C to 40°C									

● CCD Video Endoscope

Category	Type	Interlock type
	Model	MSCI-1000
	Effective length	1000 mm
Camera	Diameter of endoscope end	ø9.8 mm
	Number of effective pixels	1/4 inch interline 380,000 pixel CCD camera
	Signal type	NTSC
	AGC	Auto (MAX 24dB)
	Electronic shutter	Auto (1/60 to 1/100,000)
	Switching function	Left/right inversion, normal mirror switching
	Field of view	Straight (right angle view available as an option)
Optical system	Angle of view	Horizontal 68.8°, vertical 51.6°, diagonal 86°
	Focus length	40 mm to infinity
illumination (light source)	6 chip type LEDs	
Power source	6 × size AAA batteries or AC adapter	
Battery life	3 hours of continued use (when using alkaline batteries)	
Waterproofing	Drip proof *	
Cord material	Interlock pipe PVC tube sheath	
Operating temperature	-10°C to + 60°C (actual operation)	
Weight	700 g (including batteries)	
Accessories	Main unit, battery case, image cord, AC adapter, special aluminum case, instruction manual	

*Drip proof specifications are different from complete waterproof specifications. If the unit is immersed in water it will still become damaged. Damage due to water penetration is not covered by the warranty.

 Do not use for medial purposes.