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High-resolution Digital Microscope

VH-6300 Series

Features

- 900,000-pixel CCD
- Built-in monitor
- Excellent depth-of-field
- Handling digital image data
- Dual power supply for indoor/outdoor use

Observation depth

Borescope – 2 to 50 mm (0.08" to 1.97")

Fiber scope – 10mm to (0.39" to)

Magnification range

Zoom lens: 0x to 40x
25x to 175x
150x to 800x
450x to 3000x

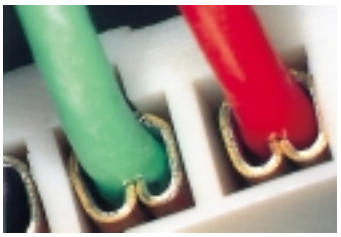
360° Zoom lens with rotary monitoring unit: 35x to 245x



Description

Large depth-of-field ensures sharp 3-dimensional images

The depth-of-field is at least 20 times* larger than that of conventional microscopes. Therefore, even if the target surface has a large roughness height, the image will still be sharp. Once you adjust the focal distance, you need not adjust it again at each point.



* Varies depending on the type of the conventional microscope.

Monitors a target without disassembling, cutting or processing it

You can monitor a target simply by holding the camera lens to the desired part. Even a large target can be easily monitored at the site since you need not mount the target on the camera stage.



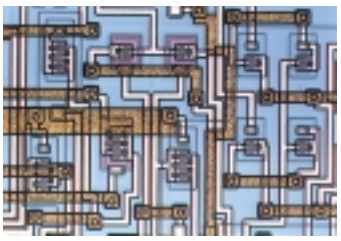
Several people can view a minute target together

During a meeting or discussion, everyone can easily view a small object on the monitor. This can help to make the meeting more productive and enhances communication between the people.



Zoom-in to 3000x

Digital microscope that allows monitoring at a magnification of between 450x and 3000x. The new variable TTL illumination method allows you to clearly view surface details that are difficult to view with conventional microscopes.



Fast color printouts

If the VH-6300 Series is connected to a color video printer, the image on the monitor can be quickly printed in color. No need to set up an external camera or to develop film.

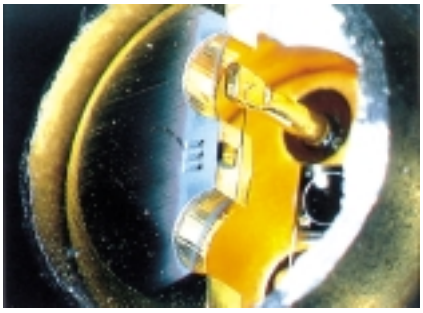
All-in-one portable design

The VH-6300 Series comprises a built-in monitor, camera, image processing unit and recording unit. The light, compact body can easily be carried with one hand. You can take it anywhere to quickly monitor, measure and record a target at the site. Both AC power and DC battery power can be used, enabling indoor and outdoor monitoring.

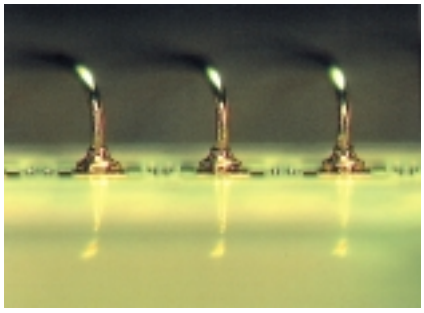
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Applications

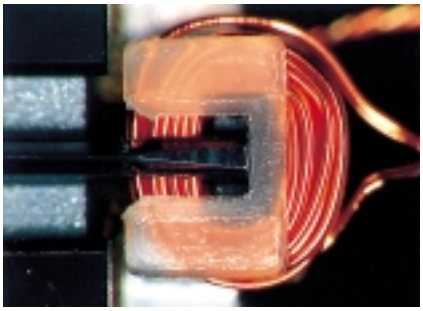
Electric/electronic industry



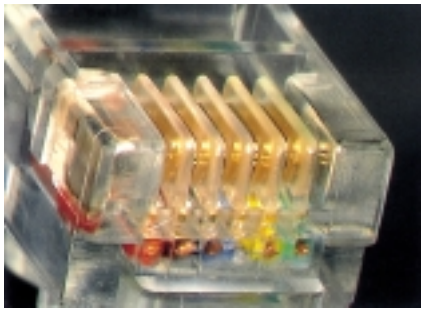
Laser diode (50x)



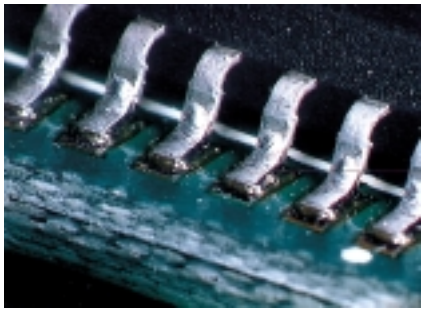
Wire bonding (300x)



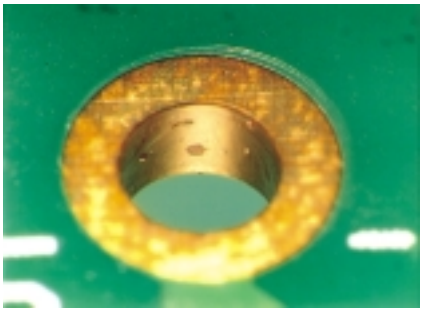
HDD head (175x)



Modular jack (25x)

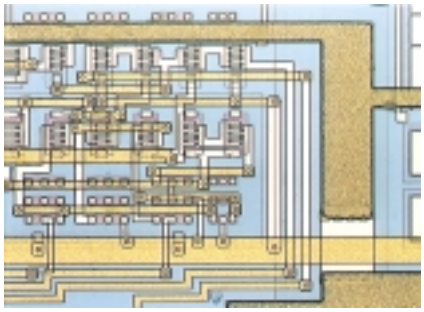


Solder joints (100x)

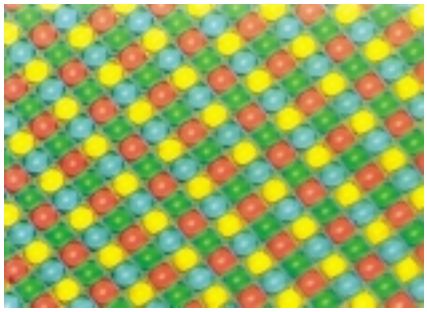


Through hole (100x)

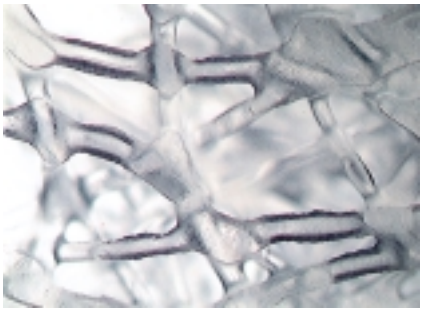
Chemicals/materials industry



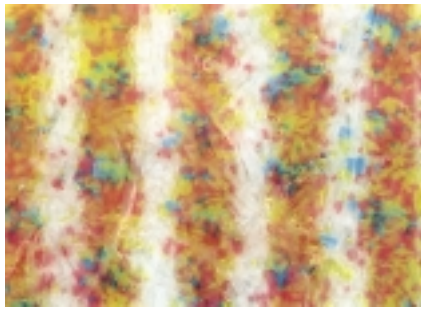
IC circuitry (450x)



Color CCD (2000x)



Filter (1000x)



Color copy (500x)



Medicine (100x)

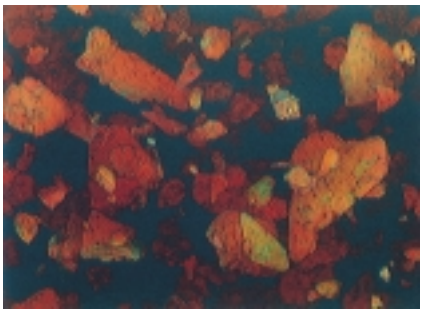


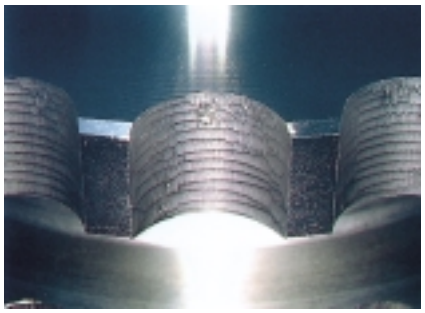
Sugar (100x)

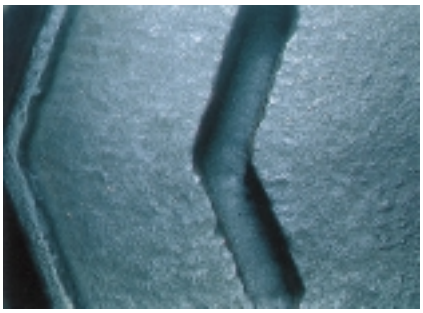
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VH-6300 High-resolution Digital Microscope

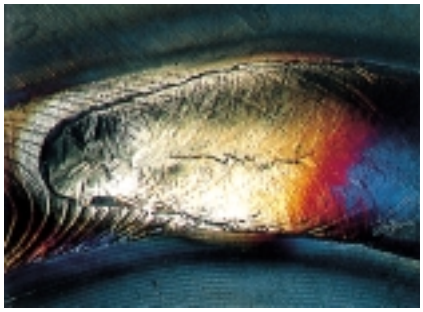
Automotive/Metals industry

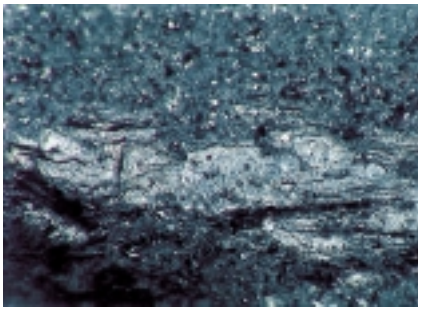

Coating (mica) (1500x)


Gear (25x)

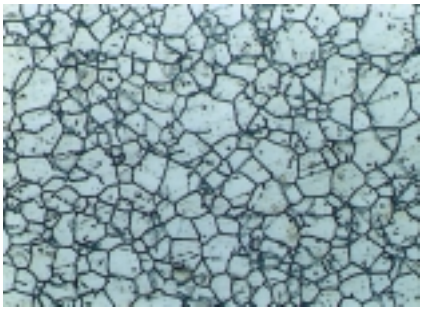

Tire (25x)


Throwaway tip (50x)

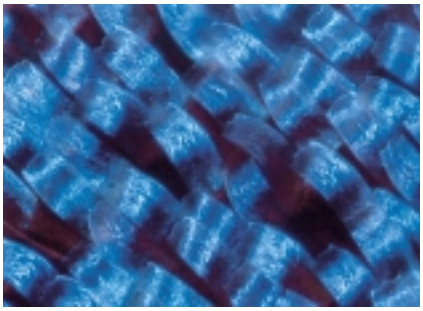

Crack in metal (50x)


Ruptured surface of aluminum die–cast (100x)

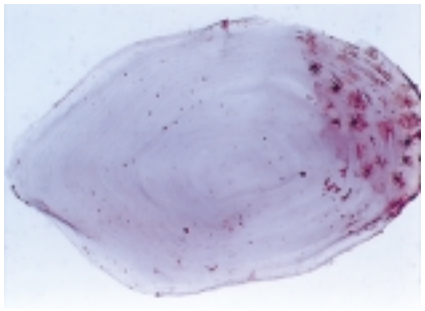
Biological industry

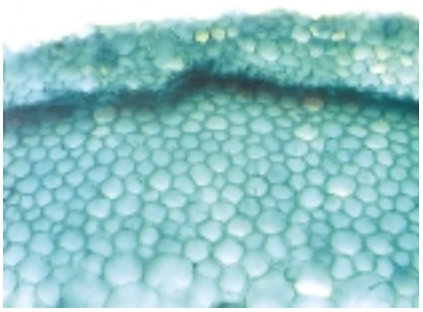

Metal structure (1000x)


Metal surface (500x)


Butterfly scales (300x)


Butterfly (50x)


Fish scale (150x)


Plant cell (500x)

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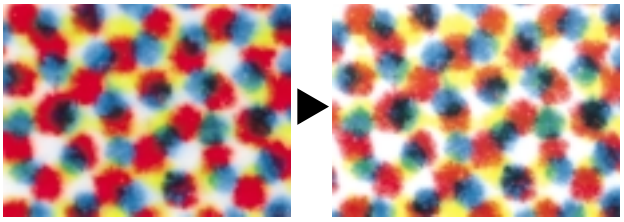
Functions

The VH-6300 Series utilizes a 900,000-pixel CCD and RGB output for crystal clear images.

The VH-6300 Series is the first 900,000-pixel CCD video microscope in the industry. The RGB output provides better color reproducibility and higher image quality than conventional models. Even a minute point on your target can be clearly viewed.

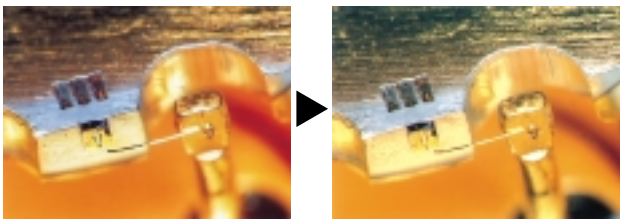
[Conventional]
410,000-pixel CCD image
Printed dot pattern

[VH-6300]
900,000-pixel CCD image



Respective colors including white are reproduced more faithfully to the original.

Semiconductor laser



The surface condition and the material feel are reproduced with great reality.

Process image data using a personal computer.

The VH-6300 Series provides a 3.5-inch floppy disk drive for recording image data. Using the digital recording system, the VH-6300 Series can record high-quality images. The recorded data can then be used in a report or can be stored in an image database on your personal computer.

A standard high-density 3.5-inch floppy disk can be used. Up to 28 screens can be recorded in a single floppy disk.

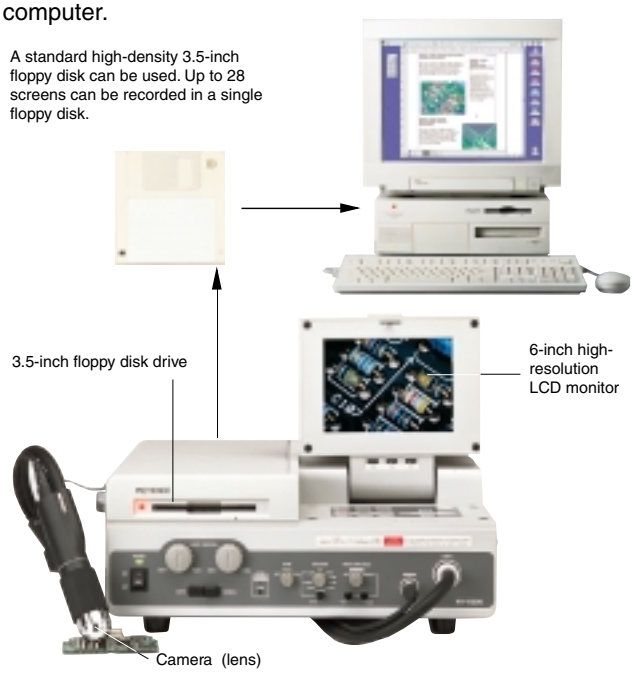
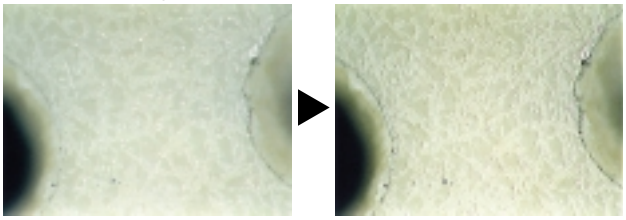


Image Enhancement Function for Easier and Clearer Monitoring

The image enhancement function allows a flaw or feature on the target surface to be more clearly and finely monitored. The digital microscope enables you to view targets that you gave up to view using a conventional method, thereby increasing the quality and efficiency of product inspection and analysis. The newly-developed real time image enhancement processing (patent pending) enables you to view an enhanced image with further clarity. This real time image enhancement function includes an edge enhancement function that allows a flaw or defect to be accentuated, a charging function that makes a dark and difficult-to-view point brighter and easier to view, and the contrast enhancement function.

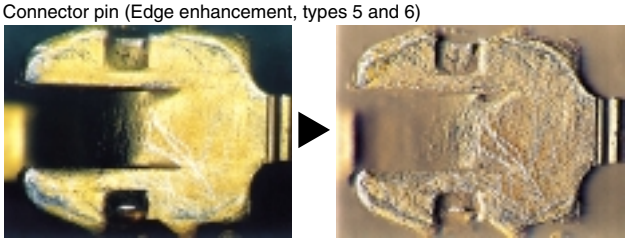
Resin surface (Edge enhancement, types 1 to 4)



Edge enhancement function

Emphasizes the edge of a target with a slight brightness difference. This function is effective for checking the target surface for a flaw or defect.

Connector pin (Edge enhancement, types 5 and 6)



Charging function

Greatly increases camera sensitivity by adding image signals through digital processing. This function is useful when monitoring an area that is difficult to illuminate using the borescope lens with a slim sleeve or fiberscope, or when monitoring a mirror-like target whose surface darkens because light strays from the target surface.

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VH-6300 High-resolution Digital Microscope

Contrast enhancement function

Emphasizes the difference between bright and dark areas through Gamma adjustment, Gain adjustment, and Offset adjustment, enabling a target image to be easily monitored.

Metal shaft

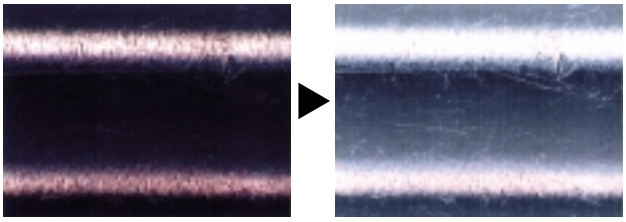
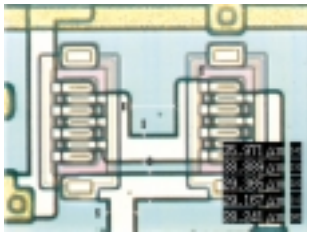


Image measurement function for measuring target dimensions, area, and angle

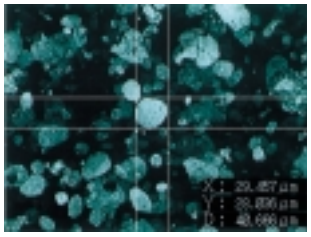
Provides a variety of functions for measuring a specified distance, area, and angle of a target on the monitor screen. Wet or soft targets that could be damaged by contact measurement using a scale can be measured without physical contact with the target. Moreover, up to ten points can be simultaneously measured per screen (except for the X–Y distance and counting function). Since eight different reference lengths can be registered based on the lens magnification, you can quickly begin measurement again after lens replacement.

- **Distance between two points**
  When desired two points are specified using the cursor, the distance between these points can be measured.



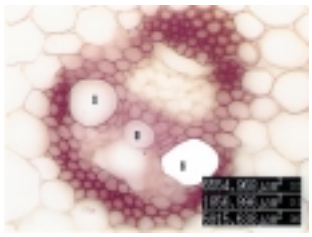
IC circuitry

- **X–Y distance**
  The horizontal (X direction), vertical (Y direction), and diagonal (D direction) lengths of a rectangle enclosed by two lines in the X and Y directions, respectively, can be simultaneously measured.



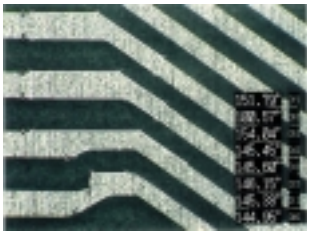
Coating (mica)

- **Area**
  The area enclosed by desired points can be measured.



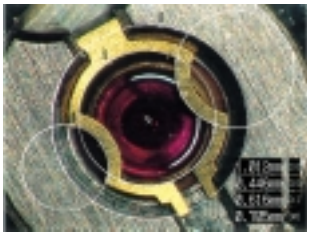
Plant cell

- **Angle**
  The angle specified by desired three points can be measured.



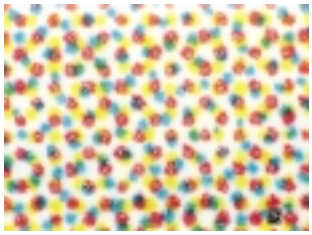
Lead frame

- **Radius**
  The radius of a circle specified by desired three points can be measured.



Clock parts

- **Count**
  Up to 255 dots can be counted.



Dot pattern of printer

- **Scale**
  Any of four different scale functions, Cross, Mesh, Bar, and X–Y bar, can be set. The scale function is useful as the reference length for simple measurement or printing.

X–Y Plant cell Cross Dice Mesh Sugar



Split screen for comparison between two images

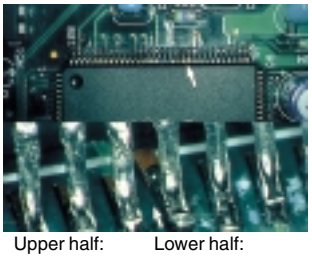
A pair of different images such as an acceptable product and unacceptable one, and an entire image and enlarged partial image are projected on a single monitor screen, allowing targets to be more easily monitored. Visual inspection based on comparison between two different images will increase inspection quality. By recording the entire image and enlarged partial image for a product judged as unacceptable by inspection, what defect occurs and where the defect occurs are obviously known.
The recorded data can be kept for a future reference.

Wire bonding



Acceptable Unacceptable

Electronic circuit board



Upper half: Entire image
Lower half: Enlarged partial image

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Lens Option

Great variety of lenses

Twelve types of lenses (twenty-five models in total) satisfy versatile monitoring requirements.

Zoom lens with rotary monitoring unit: Enables monitoring through 360° around the target.

Rotary mirrors enable you to monitor a target through 360° around the target without moving it. And together with the rotary monitoring unit, a special zoom lens has been developed. The practical zooming magnification of between 35x and 245x and large depth-of-field allow you to view clear images even when monitoring a target at an angle.



A controller for the convenience of users is available for rotary monitoring control.

The controller can be used to not only control rotation angle and speed but also to stop rotation and offer fine step-by-step rotation, and thus displays the ability in target monitoring and analysis. When an optional encoder is installed to the controller, the monitoring position can be externally controlled.



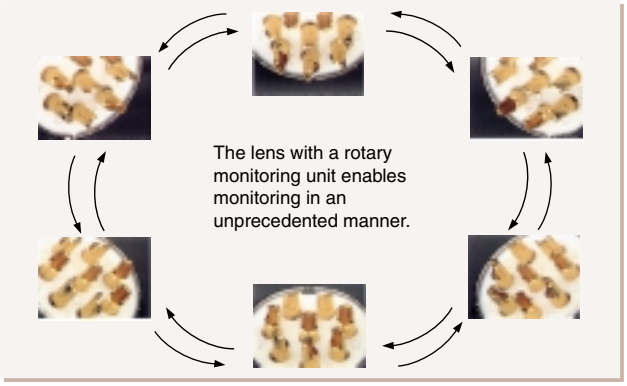
Unit: mm Inch

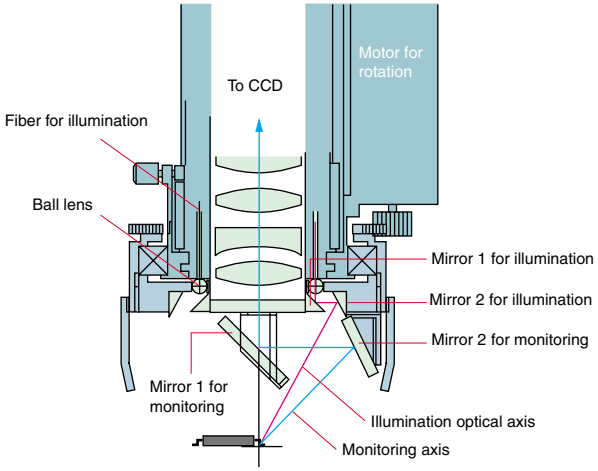
Model	Magnification[1]	Monitoring range			Depth-of-field	Monitoring distance
		Horizontal	Vertical	Diagonal		
VH-Z35/ VH-R1	35x	8.71 0.34"	6.50 0.26"	10.89 0.43"	8.3 0.33"	15.0 0.59"
	50x	6.10 0.24"	4.55 0.18"	7.62 0.30"	5.0 0.20"	
	100x	3.05 0.12"	2.88 0.11"	3.81 0.15"	1.0 0.04"	
	150x	2.03 0.08"	1.52 0.06"	2.54 0.10"	0.5 0.02"	
	200x	1.53 0.06"	1.14 0.04"	1.90 0.07"	0.4 0.02"	
	245x	1.24 0.05"	0.93 0.04"	1.56 0.06"	0.3 0.01"	

1. Magnification on a 15-inch monitor.

Principle drawing of zoom lens with rotary monitoring

Two mirrors arranged on the optical axis of the zoom lens are used to monitor a target at an angle of 45°.
By rotating these two mirrors with a motor, a target can be monitored through 360° around the target without moving the lens and target.





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VH-6300 High-resolution Digital Microscope

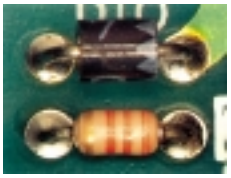
Long-focal-distance zoom lens:

Provides a magnification of between 35x and 245x at a long monitoring distance of 50 mm 1.97"

The monitoring distance of 50 mm 1.97" is convenient to monitor a target that has height differences on the surface. Since a space is ensured for easier working, monitoring efficiency is increased. This zoom lens provides a magnification of between 35x and 245x. Thus, since a single lens allows monitoring from a low magnification to a high magnification, the desired point can be quickly enlarged.







Even an area surrounded by high components can be clearly monitored.

Versatile zoom lens (standard):

25x to 175x magnification

This zoom lens provides a magnification of between 25x and 175x without replacement. You can quickly locate the target at low magnification, and then continuously zoom the image to the desired magnification. The zoom lens includes both contact and non-contact illumination heads. The non-contact illumination head provides a monitoring distance of 25.5 mm 1.00", ensuring improved workability.





Clock parts (25x)



(175x)

Unit: mm Inch

Model	Magnification[1]	Monitoring range			Depth-of-field	Monitoring distance
		Horizontal	Vertical	Diagonal		
VH-Z35	35x	8.71 0.34"	6.50 0.26"	10.89 0.43"	8.3 0.33"	49.0 1.93"
	50x	6.10 0.24"	4.55 0.18"	7.62 0.3"	5.0 0.20"	
	100x	3.05 0.12"	2.88 0.11"	3.81 0.15"	1.0 0.04"	
	150x	2.03 0.08"	1.52 0.06"	2.54 0.1"	0.5 0.02"	
	200x	1.53 0.06"	1.14 0.04"	1.90 0.07"	0.4 0.02"	
	245x	1.24 0.05"	0.93 0.04"	1.56 0.06"	0.3 0.01"	

1. Magnification on a 15-inch monitor.

Unit: mm Inch

Model	Magnification[1]	Monitoring range			Depth-of-field	Monitoring distance
		Horizontal	Vertical	Diagonal		Non-contact type
VH-Z25	25x	12.20 0.48"	9.10 0.36"	15.24 0.6"	13.0 0.51"	25.5 1.00"
	50x	6.10 0.24"	4.55 0.18"	7.62 0.3"	3.0 0.12"	
	100x	3.05 0.12"	2.28 0.09"	3.81 0.15"	0.7 0.03"	
	175x	1.74 0.07"	1.30 0.06"	2.18 0.09"	0.3 0.01"	

1. Magnification on a 15-inch monitor.

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Low-range zoom lens:

0x to 40x magnification for viewing the entire target

This low-range zoom lens provides a magnification of 0x to 40x, enabling the entire target to be monitored as well as a magnified view. You can easily capture an image of the whole target without using an external camera, perfect for inserting into your report or reference document. The monitoring distance is 95 mm 3.74", ensuring improved workability.





Motor (2x)



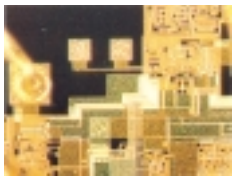
(40x)

Middle-range zoom lens:

150x to 800x magnification, enabling a bright image to be monitored

This middle-range zoom lens provides a magnification of between 150x and 800x. It can monitor at a distance 12 mm 0.47" at 800x magnification. The illumination head can be switched to a coaxial vertical illumination type (patent pending) to enable minute areas of metal tissue or a semiconductor surface to be monitored.





IC circuitry
(500x - Lateral illumination)



(Vertical illumination)

Unit: mm Inch

Model	Magnification[1]	Monitoring range			Monitoring distance
		Horizontal	Vertical	Diagonal	
VH-Z05	0.1x	3050 120.08"	2280 89.76"	3810 150.0"	Approx. 7.7 m 25.3'
	0.5x	610 24.02"	455 17.91"	762 30.0"	Approx. 1.5 m 4.9'
	1x	305 12.01"	228 8.98"	381 15.0"	Approx. 720 28.35"
	5x	61.0 2.40"	45.5 1.79"	76.2 3.0"	Approx. 95 3.74"
	10x	30.5 1.20"	22.8 0.90"	38.1 1.5"	
	20x	15.3 0.60"	11.4 0.45"	19.0 0.75"	
	40x	7.6 0.30"	5.7 0.22"	9.5 0.37"	

1. Magnification on a 15-inch monitor.

Unit: mm Inch

Model	Magnification[1]	Monitoring range			Monitoring distance
		Horizontal	Vertical	Diagonal	
VH-Z150	150x	2.03 0.08"	1.52 0.06"	2.54 0.1"	12.0[2] 0.47"
	200x	1.53 0.06"	1.14 0.04"	1.90 0.07"	
	500x	0.61 0.02"	0.46 0.02"	0.76 0.03"	
	800x	0.38 0.01"	0.28 0.01"	0.48 0.02"	

1. Magnification on a 15-inch monitor.
2. 6.5 mm 0.26" when the coaxial vertical illumination ring is attached.

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VH-6300 High-resolution Digital Microscope

High-range zoom lens:

450x to 3000x magnification, enabling monitoring with vertical illumination or penetration illumination

This high-range zoom lens provides a magnification of between 450x and 3000x. The high-resolution lens and optical edge enhancement function ensure a higher reproduction ability than a conventional microscope. Moreover, this lens provides a magnification of 3000x at a monitoring distance of 7.3 mm 0.29", ensuring improved workability. A special stand with penetration illumination is also available, further expanding the application of this lens.

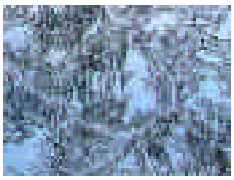
Long-focal-distance lens:

Continue working while monitoring a target

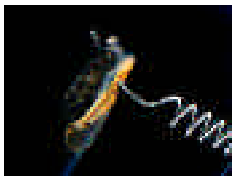
The long-focal-distance lens provides a long monitoring distance of 60 to 78 mm 2.36" to 3.07". You can easily monitor a target in a hollow or gap or when a glass plate is present between the lens and target.

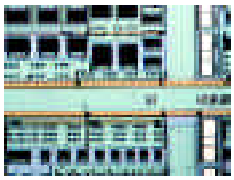





Metal tissue of weld zone (450x)


IC pattern (1500x)


Filament of light bulb (50x)


IC pattern (200x)

Unit: mm Inch

Model	Magnification[1]	Monitoring range			Monitoring distance
		Horizontal	Vertical	Diagonal	
VH-Z450	450x	0.68 0.03"	6.50 0.26"	10.89 0.43"	7.3 0.29"
	500x	0.61 0.03"	4.55 0.18"	7.62 0.3"	
	1000x	0.31 0.01"	2.88 0.11"	3.81 0.15"	
	1500x	0.20 0.01"	1.52 0.06"	2.54 0.1"	
	2000x	0.15 0.01"	1.14 0.04"	1.90 0.07"	
	2500x	0.12 0.004"	0.93 0.04"	1.56 0.06"	
	3000x	0.10 0.003"	0.08 0.003"	0.13 0.005"	

1. Magnification on a 15-inch monitor.

Unit: mm Inch

Model	Monitoring range			Magnification		Depth-of-field	Monitoring distance[1]
	Horizontal(H)	Vertical (V)	Diagonal	15-inch monitor	6-inch monitor		
VH-W50	6.10 0.24"	4.55 0.18"	17.62 0.69"	50x	20x	3.1 0.12"	78 (77) 3.07" (3.03")
VH-W100	3.05 0.12"	2.28 0.09"	3.81 0.15"	100x	40x	0.6 0.02"	60 (59) 2.36" (2.32")
VH-W200	1.53 0.06"	1.14 0.04"	1.90 0.07"	200x	80x	0.3 0.01"	60 (59) 2.36" (2.32")

1. Figures in parentheses are applicable when a non-reflective illumination head is used.

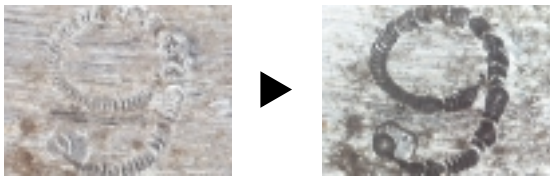
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Hyper-view lens:

Easily monitor a glossy target with minimum halation.

You can easily detect a flaw, stain or crack on metal, glass or ceramic surfaces that are difficult to detect using conventional microscopes.





Stamp on aluminum surface (100x)

Model	Monitoring range (mm)			Magnification		Depth-of-field (mm)	Monitoring distance (mm)
	Horizontal (H)	Vertical (V)	Diagonal	15-inch monitor	6-inch monitor		
VH-V100	3.05 0.12"	2.28 0.09"	3.81 0.15"	100x	40x	1.0 0.04"	—
VH-V200	1.53 00.6"	1.14 0.04"	1.90 0.07"	200x	80x	0.4 0.02"	—

Vertical-illumination lens:

For monitoring metal surfaces.

The vertical-illumination lens utilizes our original optical system (patent pending) giving it a thin body. Two types of magnification factors (500x and 1000x) are available.





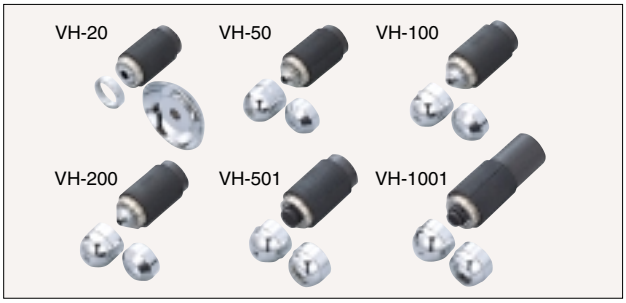
Metal surface (500x)

Model	Monitoring range (mm)			Magnification		Depth-of-field (mm)	Monitoring distance (mm)
	Horizontal (H)	Vertical (V)	Diagonal	15-inch monitor	6-inch monitor		
VH-C501	0.6 0.02"	0.46 0.02"	0.76 0.03"	500x	200x	0.06 0.002"	0 to 2.0 (0 to 0.08")
VH-C1001	0.31 0.01"	0.23 0.01"	0.38 0.01"	1000x	400x	0.03 0.001"	0 to 2.0 (0 to 0.08")

Standard fixed-magnification lens:

Select a lens based on your desired magnification.

Choose between 20x and 1000x. The standard fixed-magnification lens provides a large depth-of-field, enabling you to obtain a sharp 3-D image. (except for VH-20)





Printed circuit board (20x)



Video head (50x)

Model	Monitoring range (mm)			Magnification		Depth-of-field (mm)	Monitoring distance (mm)
	Horizontal (H)	Vertical (V)	Diagonal	15-inch monitor	6-inch monitor		
VH-20	15.25 0.60"	11.38 0.45"	19.05 0.75"	20x	8x	12.0 0.47"	70 (62)[1.] 2.76" (2.44")
VH-50	6.10 0.24"	4.55 0.18"	7.62 0.30"	50x	20x	6.5 0.26"	12.8 0.50"
VH-100	3.05 0.12"	2.28 0.09"	3.81 0.15"	100x	40x	1.0 0.04"	11.0 0.43"
VH-200	1.53 0.06"	1.14 0.04"	1.90 0.07"	200x	80x	0.4 0.02"	3.5 0.14"
VH-501	0.61 0.02"	0.46 0.02"	0.76 0.03"	500x	200x	0.06 0.002"	3.5 0.14"
VH-1001	0.31 0.01"	0.23 0.01"	0.38 0.01"	1000x	400x	0.03 0.001"	3.5 0.14"

1. Figures in parentheses are applicable when a non-reflective illumination head is used.

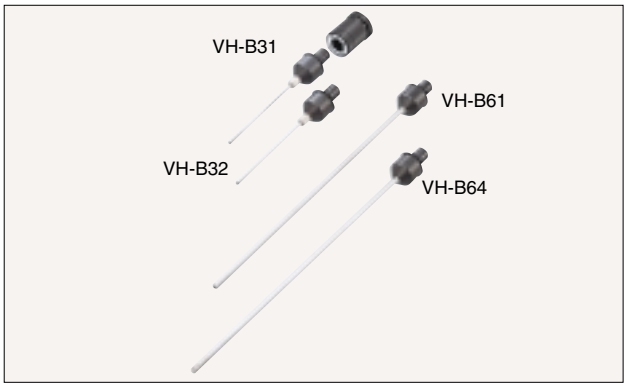
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VH-6300 High-resolution Digital Microscope

Borescope lens:

The sleeve diameter is 3 mm 0.12", enabling viewing inside a narrow gap.

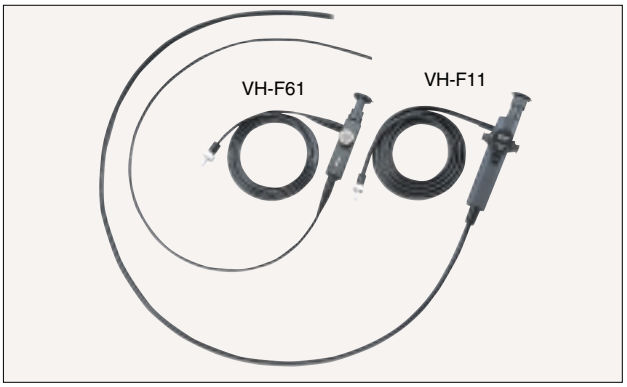
For monitoring inside a narrow gap or complicated shape, select from two types of end shapes (direct-view and oblique-view). The borescope lens is completely water-proof, for underwater observation.



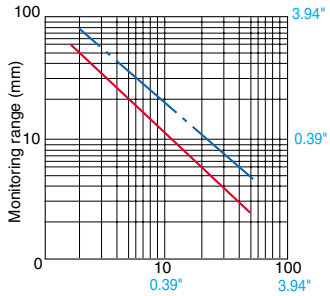
Fiberscope:

Suitable for monitoring a complicated shape.

You can monitor even blind spots by changing the angle of the sleeve of the fiberscope by your hand.

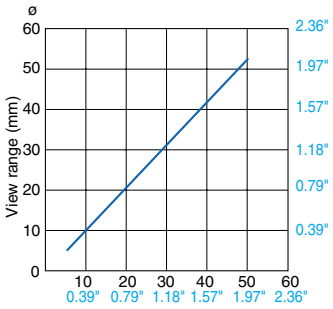


• **Change of monitoring magnification**
(Magnification on a 15-inch monitor)

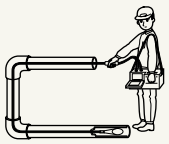


Distance between borescope tip and target (mm)

• **Change of view range**



Distance between borescope tip and target (mm)



Corrosion inspection inside pipes



Model	Borescope	VH-B31	VH-B32	VH-B61	VH-B64	VH-F61	VH-F111
	Lens attachment	VH-B				VH-F	
View direction		0° (Direct-view)	30° (Oblique-view)	0° (Direct-view)	70° (Oblique-view)	0° (Direct-view)	0° (Direct-view)
Outer diameter		ø3 mm ø0.12" (Protective tube: ø4 mm ø0.16")		ø6 mm ø0.24"		ø 6.1 mm ø0.24"	ø11 mm ø 0.43"
Effective length		105 mm 4.13"	107 mm 4.21"	300 mm 11.81"	304 mm 11.97"	1000 mm 39.37"	1500 mm 59.06"
View angle		55°	55°	55°	55°	65°	55°
Observation depth		2 to 50 mm 0.08" to 1.97"				10 mm 0.39" to ∞	20 mm 0.79" to ∞
View range		ø2 mm to ø52 mm ø0.08" to ø2.05"				—	—
Protection		Sleeve: waterproof				—	—
Ambient temperature		Sleeve: 0 to +80°C (in air)/ 0 to +40°C (in water)/ Parts other than sleeve: 0 to +40°C (in air)				—	—
Bendable sleeve angle		—	—	—	—	120° up/down	120°up/down, 100°right/ left
Operating temperature		—	—	—	—	+10 to +80°C	+10 to +80°C
Operating atmospheric pressure		—	—	—	—	1 atm	1 atm
Oil & waterproof		—	—	—	—	Gasoline, machine oil, and kerosene	

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Specifications

Controller

Model			VH-6300 (115)/VH-6300 (230)[6.]
Monitor			Color LCD (TFT-type), 6 inch
Floppy disk drive unit	Disk type		3.5 inch, high density
	Recording capacity [1.]		1.44 MB: 28 screens, 1.2 MB: 24 screens
	Recording format		1.44 MB format (PC compatible or Macintosh)
			MS-DOS 1.2 MB format (for NEC PC-9800 series)
Image compression method			Standard JPEG compression
Camera	Image pick-up element		1/2-inch, 900,000-pixel CCD image sensor, Effective pixels: 850 (H) x 984 (V)
	Scan method		NTSC, 2:1 interlaced scanning
	Scanning frequency		Horizontal (H): 15.734 kHz , Vertical (V): 59.94 Hz
	Resolution		Horizontal (H): 560 or more lines , Vertical (V): 400 or more lines
	S/N		54 dB or more
	Gain		AUTO [2.]/NORMAL/HIGH [3.]
	Electronic shutter		AUTO [4.] ,OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000
	White balance		AUTO/PUSH-SET/MANUAL [5.]
Light source	Lamp		12 V, 100 W halogen lamp
	Lamp service life		1000 hours (average)
	Color temperature		3100°K (at maximum light intensity)
Output	Video output		VBS 1.0 V (p-p), NTSC-system BNC: 1 S (Y/C separate)
			4-pin multi-connector: 1, RGB D-SUB 9-pin connector: 1
	AC output		2 A max.
Input	Video input		VSB 1.0 V (p-p), NTSC-system BNC: 1, S (Y/C separate)
			4-pin multi-connector: 1
	Mouse input		MINI-DIN 9-pin connector
	External remote input		Non-voltage input (contact/solid state)
Power supply	AC	Source voltage	85 to 132 VAC/170 to 250 VAC (selectable), 50/60 Hz [6.]
		Power consumption	400 VA max.
	DC	Source voltage	12 VDC ±10%
		Power consumption	170 VA max.
Ambient temperature			+5 to +40°C
Relative humidity			35 to 80 %
Weight			Controller: approx. 8.3 kg, Camera unit: approx. 0.6 kg

1. When the image quality is “Normal” and the data size per image is 51200 bytes.
2. Automatically changes between 0 and 18 dB.
3. Fixed at +9 dB.
4. Automatically changes between 1/60 and 1/8000 sec.
5. Adjustable for RED and BLUE.
6. AC power supply voltage is selectable between 115VAC and 230VAC at the user end.
   Please specify, however, the factory-set voltage by adding (115) or (230) following the model number when placing order.

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VH-6300 High-resolution Digital Microscope

System Configurations

Versatile zoom lens (standard)
VH-Z25 (25x to 175x)



Low-range zoom lens
VH-Z05 (0x to 40x)



Middle-range zoom lens
VH-Z150 (150x to 800x)



High-range zoom lens
VH–Z450 (450x to 3000x)



Rotary monitoring unit/ Long-focal-distance zoom lens
VH–R1 (360° rotation)



VH–Z35 (35x to 245x)



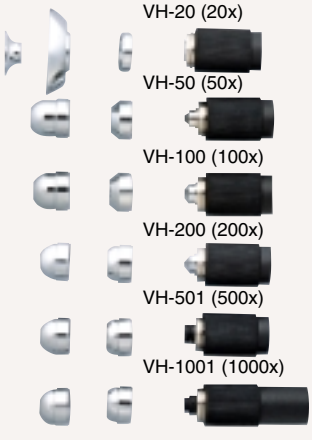
Long-focal-distance lens
VH-W50 (50x)



VH-W100 (100x)

VHW-200 (200x)

Standard fixed-magnification lens
VH-20 (20x)



VH-50 (50x)

VH-100 (100x)

VH-200 (200x)

VH-501 (500x)

VH-1001 (1000x)

Hyper-view lens
VH-V100 (100x)



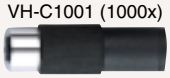
VH-V200 (200x)



Vertical-illumination lens
VH-C501 (500x)



VH-C1001 (1000x)



Borescope lens
VH-B31

VH-B32

VH-B61

VH-B64

VH-B



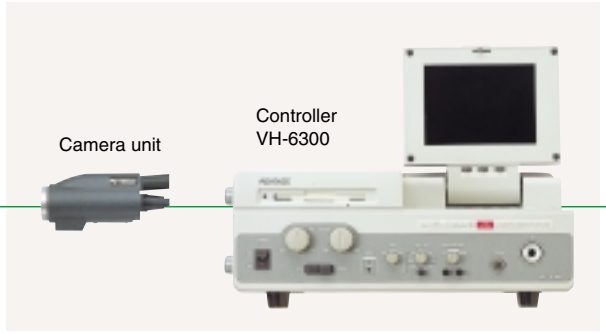
Fiberscope
VH-F61

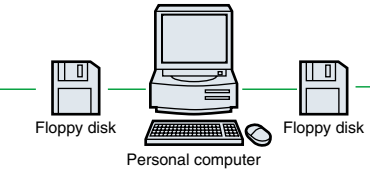
VH-F111

VH-F



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Personal computer



Monitor

Large screen monitor. When several persons need to monitor a target simultaneously, connect the large screen monitor. Since the target image is further magnified on the large screen, it can be checked more thoroughly.



VCR

The VCR records images onto video tape. Because the VCR is suited to recording over a long period, chronological changes can be monitored.

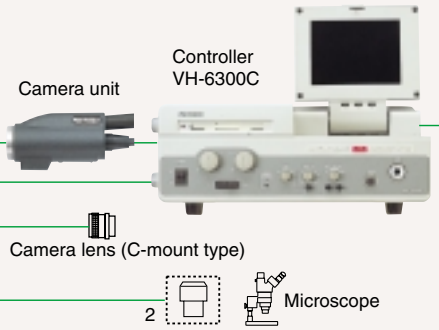


Video printer

The video printer prints the screen image. Printed data can be used for observation or reference instead of a picture taken by an external camera.

C-mount type

Since the camera's lens mount is a C-mount type, the VH-F fiberscope attachment can be connected. Other C-mount type camera lenses or microscopes (with the C-mount adaptor) can also be connected.



1. Use the supplied C-mount attachment.
2. Use the C-mount adapter suitable for the microscope.

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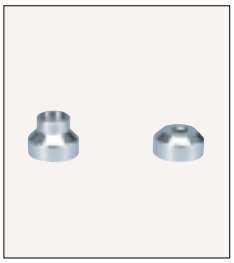
VH-6300 High-resolution Digital Microscope

Options

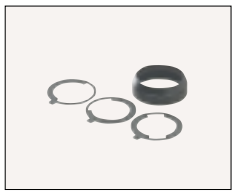

VH mounting stand


VH mounting stand (with X-Y stage)


Mounting stand for VH–Z450 VH-S1(with X–Y stage and penetration illumination)


Vertical illumination head (for VH–200)


Lateral-illumination adaptor (for VH-W100/W200)


Variable illumination adjuster ring (for VH-25/Z05)


Encoder unit (for VH–R1)

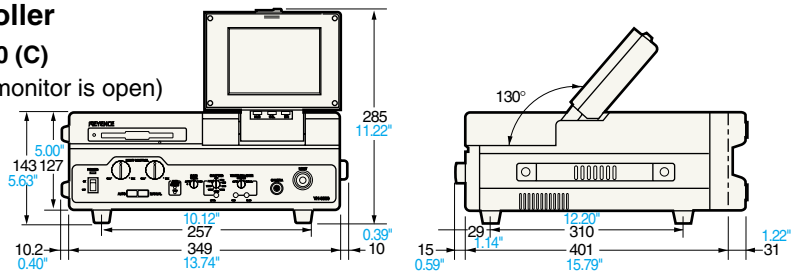
Dimensions

Unit: mm Inch

Controller

VH-6300 (C)

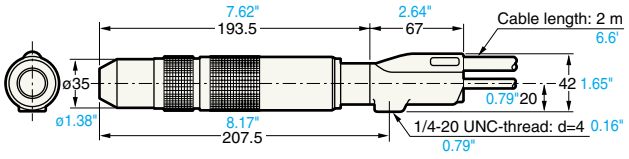
(When monitor is open)



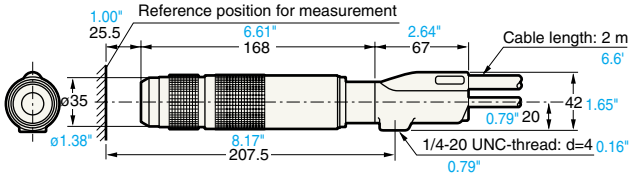
Lens

Versatile zoom (standard)
VH-Z25

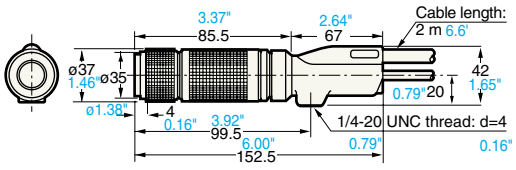
Contact type



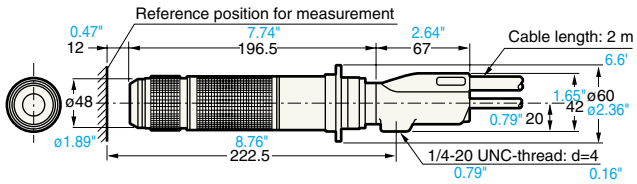
Non-contact type



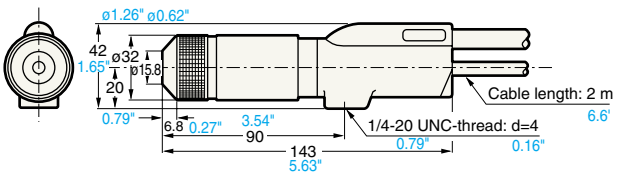
Low-range zoom
VH-Z05



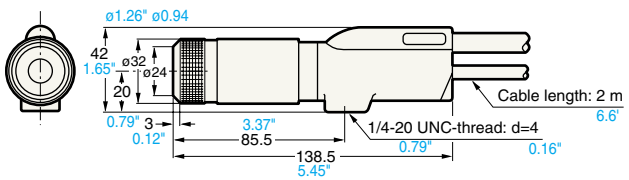
Middle-range zoom
VH-Z150



Hyper-view
VH-V100



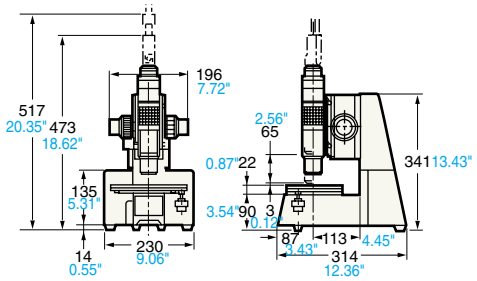
Hyper-view
VH-V200



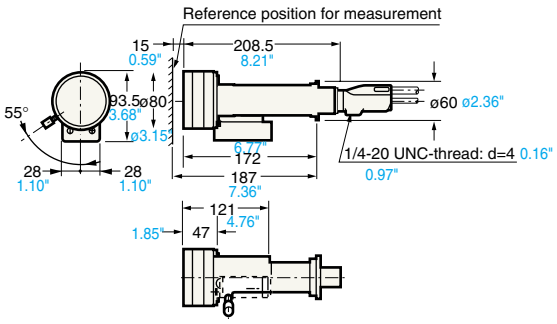
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Unit: mm Inch

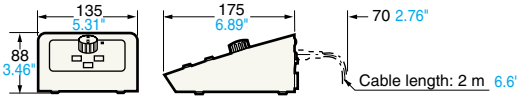
High-range zoom
VH-450
(Mounted to special stand)



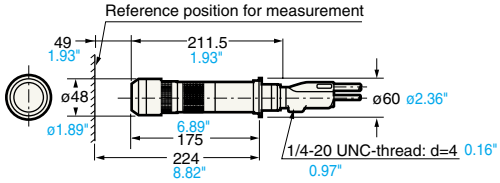
Zoom with rotary-monitoring unit
VH-Z35/VH-R1



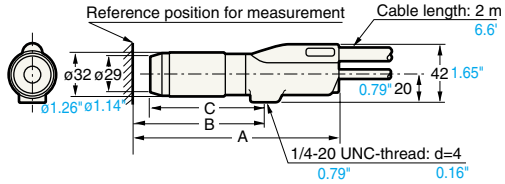
VH-R1 controller



Long-focal-distance zoom
VH-Z35

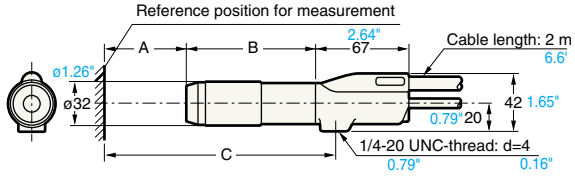


Vertical-illumination
VH-C501/C1001



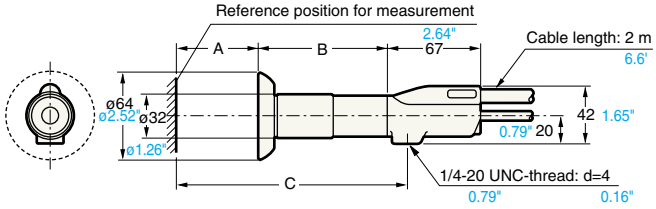
	VH-C501	VH-C1001
A	137.5 to 139.5 5.41" to 5.49"	165.5 to 167.5 6.52" to 6.59"
B	84.5 to 86.5 3.33" to 3.41"	112.5 to 114.5 4.43" to 4.51"
C	84.5 3.33"	112.5 4.43"

Long-focal-distance
VH-W50/100/200



	VH-W50	VH-W100	VH-W200
A	78 3.07"	60 2.36"	60 2.36"
B	105 4.13"	92 3.62"	124 4.88"
C	197 7.76"	166 6.54"	198 7.80"

VH-W50/100/200
(When non-reflective lens is used)



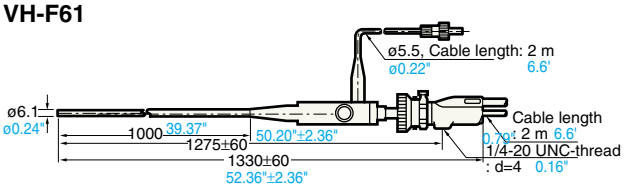
	VH-W50	VH-W100	VH-W200
A	77 3.03"	59 2.32"	59 2.32"
B	106 4.17"	93 3.66"	125 4.92"
C	197 7.76"	166 6.54"	198 7.80"

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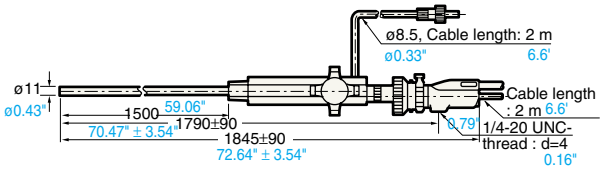
VH-6300 High-resolution Digital Microscope

Unit: mm Inch

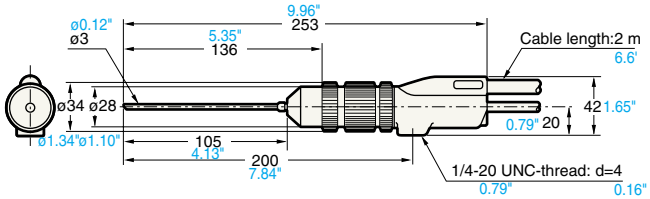
Fiberscope VH-F61



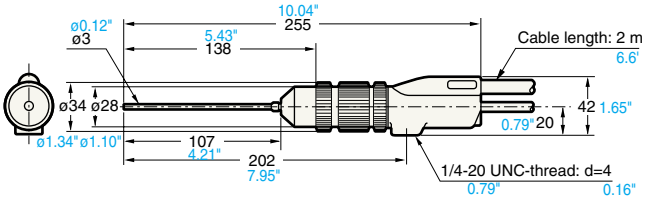
Fiberscope VH-F111



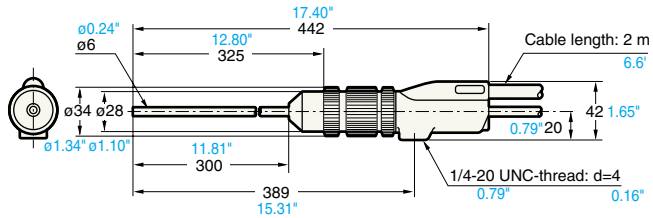
Borescope lens VH-B31



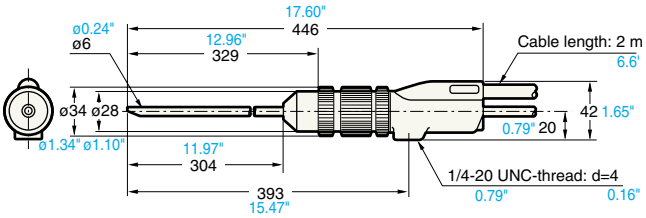
Borescope lens VH-B32



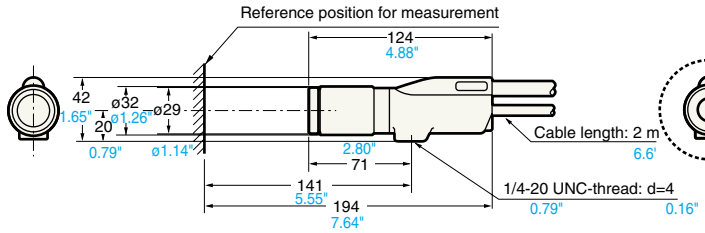
Borescope lens VH-B61



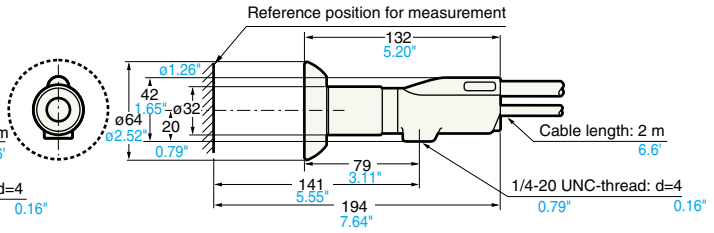
Borescope lens VH-B64



Standard fixed-magnification lens VH-20

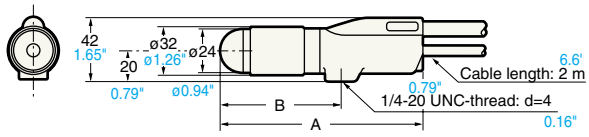


(When non-reflective illumination head is attached)

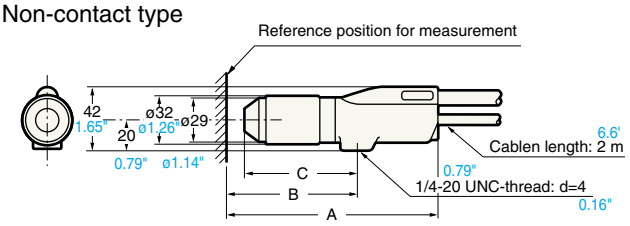


VH-50/100/200/501/1001

Contact type



Non-contact type



	VH-50	VH-100	VH-200	VH-501	VH-1001
A	145 5.71"	143 5.63"	138.5 5.45"	138.5 5.45"	166.5 6.56"
B	92 3.62"	90 3.54"	85.5 3.37"	85.5 3.37"	113.5 4.47"
C	79 3.11"	79 3.11"	82.0 3.23"	82.0 3.23"	110.0 4.33"

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