

# Specifications

## VHX-7000/7020

Item		Specifications	
High-Performance Camera	Image receiving element	1/1.8 type 3.19 million pixels CMOS image sensor Total pixels 2064 (H) x 1554 (V) Executable pixels 2048 (H) x 1536 (V)	
	Scanning method	Progressive	
	Frame rate	50 F/S (max.)	
	Resolution	Normal	2048 (H) x 1536 (V)
		Stage shift	6144 (H) x 4608 (V) <sup>*1</sup>
	High dynamic range	Each RGB pixel in 16-bit resolution	
	Gain	Manual, Preset	
	Electronic shutter	Auto, Manual, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/9000, 1/19000	
	Supercharge shutter	The setting is available from 0.02s to 16s by 0.01s	
	White balance	Push set, Manual, Preset (2700 K, 3200 K, 5600 K, 9000 K)	
	Back-focus	Adjustment not required	
Built-in light source	Type	Super luminosity LED	
	Longevity	40000 hours (referent value)	
LCD monitor	Size	Color LCD (IPS) 27"	
	Panel size	596.736 (H) x 335.664 (V) mm	
	Pixel pitch	0.1554 mm (H) x 0.1554 mm (V)	
	Number of pixels	3840 (H) x 2160 (V)	
	Display colors	Approx. 1.07 billion colors <sup>*2</sup>	
	Brightness	350 cd/m <sup>2</sup> (Center 1 Point, typ)	
	Contrast ratio	1300:1 (typ)	
	Viewing angle	±89° (typical, horizontal), ±89° (typical, vertical)	
Hard disk drive unit	Storage capacity	1TB (including 350GB reserved area) Approx. 2160000 images (when a 3 million-pixel image is compressed) to approx. 71100 images (when a 3 million-pixel image is not compressed)	
Image format		When compressed: JPEG When not compressed: TIFF	
Maximum image size		50000 pixels (H) x 50000 pixels (V) (using image stitching function)	
Video output	Output format	Display Port 3840 pixels x 2160 pixels	
	Scanning frequency	Special LCD monitor	132 kHz (H), 60 Hz (V)
		External monitor	132 kHz (H), 60 Hz (V)
Input	Mouse input	USB mouse support	
	Keyboard input	USB keyboard support	
	External remote input	Pause/Capture, Non-voltage input (Contact/non-contact)	
Interface	LAN	RJ-45 (10BASE-T/100BASE-TX/1000BASE-T)	
	USB2.0 series A	6 ports	
	USB3.0 series A	2 ports	
Power supply	Power supply voltage	AC 100 – 240 V ±10% 50/60 Hz	
	Power consumption	430 VA	
Environmental resistance	Operating ambient temperature	+5 to 40°C <sup>*3</sup>	
	Operating ambient humidity	35 to 80% RH, No condensation <sup>*4</sup>	

Item		Specifications
Weight	Controller	Approx. 12.0 Kg
	Camera Units	Approx. 0.6 Kg (High-Performance Camera) Approx. 5.0 Kg (Fully-Integrated (FI) Head)
	Console	Approx. 0.45 Kg
Dimensions (excluding protrusions)		Width 625 mm x Height 460 mm x Length 180 mm (at storage)

\*1 At high resolution function usage by the motorized stage shift

\*2 Display by 8bit + 2FRC

\*3 At hand-held observation for the High-Performance Camera: 5°C to 35°C

\*4 If the ambient temperature is 40°C, use it under the condition where the absolute humidity is 70% RH or less.

# Specifications (Various Functions)

	Function	Contents	Console supported
Observation function	Auto focus function	Provided	✓
	Focus view function	Provided	
	Lighting shift function (height difference enhancement)	Provided (Full, Partial, Flanking, dark field, bright field, mix illumination modes)	✓
	Multi-lighting function	Provided	✓
	Camera-shake correcting function	Provided	✓
	Optical Shadow Effect Mode function	Provided	✓
Display function	Full screen display function	Provided	
	Split function	Horizontal split, vertical split, 4-part split, 9-part split, Linkage display function	✓
	Real-time digital zoom	1.0 to 10.0x	
	Comment display function	Provided	
Image optimization function	Glare eliminating function	Provided	✓
	Ring eliminating function	Provided	
	HDR function	Provided	✓
	Fine shot function	Provided	
Stitching function	2D image stitching	Provided	✓
	3D image stitching	Provided	✓
	Navigation function	Provided	
3D function	Live depth composition function	Provided	✓
	Quick Composition and 3D function	Provided	✓
	Fine depth composition	Provided	
	Manual 3D composition	Provided	
	3D display function	Provided	
	3D shape correction function	Provided (Slope/Sphere/Cylinder)	
	3D 2-screen simultaneous comparison function	Provided (Combination/Comparison/Difference display mode)	
Recording function	Report output (Excel)	Provided	
	Recording settings reproduction function	Provided	
	Timer capture function	Provided	
	Video recording/playback function	<ul style="list-style-type: none"> <li>• Maximum 50 frames/sec.</li> <li>• Video size: 640 x 480, 800 x 600, 2048 x 1536, 2880 x 2160</li> </ul>	

	Function	Contents	Console supported
Measurement function	Distance, angle, radius, area, etc.	Various functions provided	
	Automatic edge detection	Provided	
	Scale display	Various functions provided	✓
	Automatic count, area measurement functions	Provided (enables distance/area measurement through brightness/color extraction)	
	Automatic area measurements	Provided	
	Grain size analysis	Provided	
	Contamination analysis	Provided	
	One-click measurement	Provided	
	Auto measurement	Provided	
	Teaching auto measurement	Provided	
	Lens/zoom automatic recognition function (TRIPLE'R)	Provided	
	Auto calibration	Provided (numerical input not required)	
	One push calibration function	Provided (scale position adjustment not required)	
	CSV storage	Provided	
3D measurement function *1 (VHX-H5M option function)	3D profile measurement	Provided	
	Point-to-point height measurement function	Provided	
	3D volume measurement	Provided	
	Roughness measurement	Provided	
Manual XY measurement system *2 (VHX-H3M3 option function)	XY stage measurement	Provided	
	Wide image display function	Provided	
Utility	Easy mode	Provided	✓
	Space saving uni	Provided	
	Foot switch compatibility	Provided	
	User settings	Provided	
	System protection settings	Provided	
	PC mode	Provided	
	Network connection settings	Provided (communication software, file-sharing, FTP)	
	Function guide	Provided	
Software for PC (Available free of charge)	Communication software	Allows easy image data transfer between the VHX and PC. (LAN)	
	3D playback software	Plays back 3D images saved in the VHX on a PC.	
	Optical Shadow Effect Mode playback software	Adjusts the parameter of Optical Shadow Effect Mode images saved in the VHX.	
	Multi-lighting playback software	Existing multi-lighting images can be played back with the VHX after their illumination orientations are changed.	
	3D HDR playback/measurement/stitched image playback software	HDR parameter adjustment, stitched image display and measurement can be performed.	
	One-click measurement compilation software	Summarizes and transfer one-click measurement results to Excel.	

\*1 The 3D measurement function (VHX-H5M) requires one license per product.

\*2 The Manual XY measurement system (VHX-H3M3) requires one license per product.