



BV-M1020/M1021/M1022 Wavelength Variable Light Source



The wavelength variable light source is a new type of the light source which uses the halogen light as the main light source and illuminates the light with a specific wavelength to be selected. The BV-M1020 and BV-M1021 use a LVF (Linear Variable Filter) to select a wavelength. The LVF is a filter which the relations of the mechanical position of the filter and the wavelength are linearly varied, and can select the wavelength in accordance with the position of the projected light. The spectroscopic imaging makes it possible to inspect foreign materials, scratch or internal conditions of various objects by measuring reactions of the light from materials, i.e. reflecting, transmitting or absorbing light at an arbitrary wavelength. The BV-M1020 selects from among SWIR wavelength and BV-M1021 does from NIR to SWIR. The combination of the BV-M1020/BV-M1021 and Bluevision SWIR cameras can make efficient and effective system.

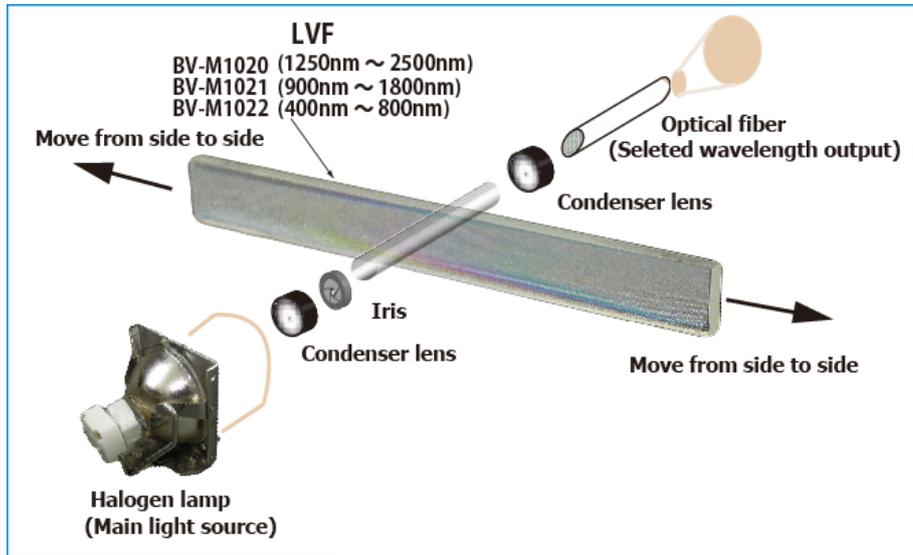
Specifications			
Model	BV-M1020	BV-M1021	BV-M1022
Lamp used	Standard : 12V, 100W / Option:15V, 150W / Color temp.3000K		
Lamp life	Standard lamp typical:1000 hours (Optional lamp: 50 hours)		
LVF wavelength range	1250 nm ~ 2500 nm (Practical range: 1250nm ~2200nm)	900 nm ~ 1800 nm	400nm ~ 700nm
Wavelength	30nm/mm variation	18nm/mm variation	8nm/mm variation
Iris Diaphragm diameter	Φ1 ~Φ3.0 mechanically adjustable		
Wavelength setting and display	Calibration is made by specified wavelength LED and it is used as the reference. Wavelength is determined by the distance from the reference.		
	Calibration wavelength:2000nm	Calibration wavelength:1450nm	TBA
Wavelength stopband	Bandwidth which the level of the wavelength except transmitting wavelength is 1% or less		
	900 nm ~ 3000 nm	700 nm ~ 2700 nm	300nm ~ 850nm
Length of Fiber	NIR Fiber, 1m (included)	Multicomponent Fiber,1m(included)	
Remote control	Analog light control, Lamp break indicator, Remote power OFF		
Dimensions	140(W) x 140(H) x 255(D) mm (excluding rubber foot, protrusion)		
Weight	4.2Kg (including a fiber)		
Operating Temp/ Humidity	0°C ~ 40°C/ 20% ~ 85% (Non-condensing)		
Power Supply	AC 100/117V, 50Hz/60Hz, Type H: BV-M102xH 220/240V, 50Hz/60Hz		
Power consumption	205W, 110/117V (when using standard lamp)		
Fuse	125V 5A, φ 5.2mm x 20mmTBA		

Note: BV-M1022 is BTO product.

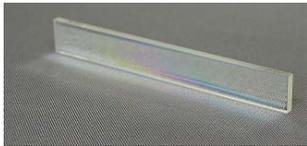
Specifications are subject to change without prior notice.

Note: BV-M1020 uses 2000nm and BV-M1021 uses 1450nm LED for calibration and the wave length is estimated and set by the mechanical distance from the calibration wavelength. BV-M1020 series is not the product to measure the absolute value of the wavelength but is to find approximate wavelength.

Principle of the system

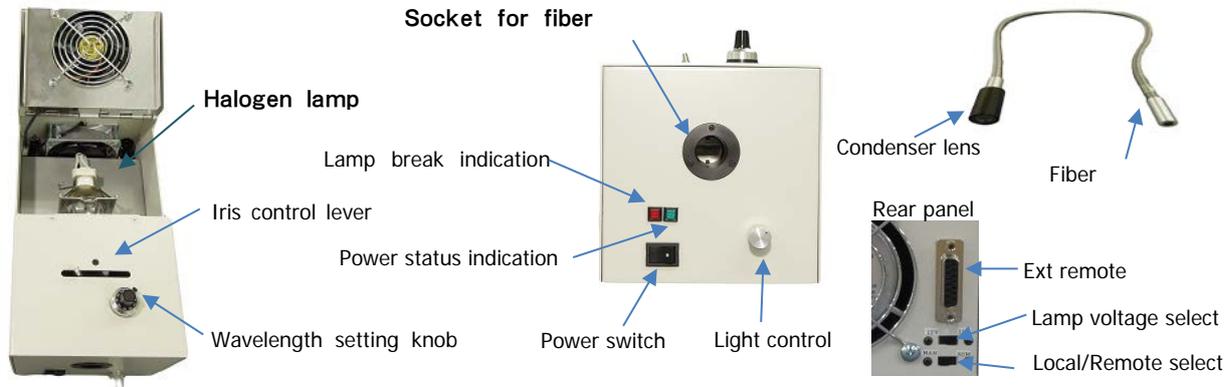


The light from Halogen lamp is collected by the condenser lens and input into the iris control. The light being controlled its volume (half value control) is projected to LVF and LVF is moved from side to side for selecting wavelength. The selected light is passing through the condenser lens again, and is input into the fiber and eventually projected to the object.

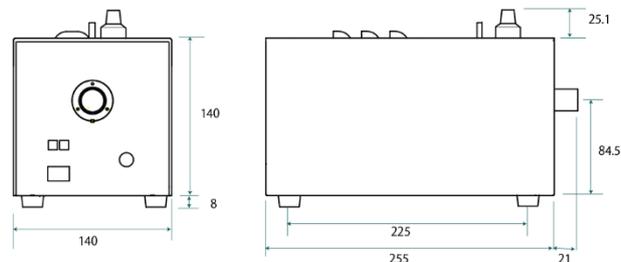


LVF employs the filter to change linearly the wavelength against the mechanical position on it and sets the required wavelength by using wideband Halogen lamp to scan on the filter.

Parts location



Outlook dimensions



This development was completed due to the cooperation of Nikon for LVF and the joint development with Kenko Optics for Halogen main light source.

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