

Spectrum Luminescent Microscope Regula 5001 MK



Spectrum Luminescent Microscope Regula 5001 MK is intended for forensic examinations and verification of documents authenticity



The microscope enables to conduct the following types of forensic examinations:

- dactylographic;
- ballistic;
- trasological;
- handwriting;
- real evidence withdrawn from the scene of action;
- forensic technical (banknotes, passports, driving licenses and other documents identifying a holder, technical and other vehicle documents, visas, seals and stamps, securities and other documents with special protection).

It is possible to:

- view zoomed images of the examined objects on the monitor screen;
- perform additional visual control using the binocular nozzle;
- view the examined objects fragment by fragment;
- process images using a PC and the specialized software “Video Scope XE” and store them afterwards;
- change zoom of the images of the examined objects;
- illuminate the examined objects with visible or IR light.

Technical characteristics

Three different lights sets:

- spectral luminescent light;
- bottom light;
- ring light (optional).

Light	Description	Parameters of light sources		
		Light sources	Peak wavelength, nm	Number of sources
Spectral luminescent	Used for objects examination in different parts of spectrum with different locations of the lights relative to the working surface	White top	—	
		Ultraviolet top	365	
		Blue top	470	
		Green top	530	
		Yellow top	590	
		Red top	627	
		Infrared top	870 and 950	
		White oblique	—	4 sources from different sides
Infrared oblique	870			
Bottom	Used to check presence/absence of watermarks, filigrees, strips, security threads, fibers introduced into the paper, matching elements of a polygraphic image, endless text, as well as to detect the places of alterations made by erasure, etching or washing.	White bottom	—	
		Infrared bottom	870	
Ring	Enables to make examinations under shadowless illumination of white and IR light. Each light source has 7 operating modes (ring, half-ring (2 modes), quadrant (4 modes))	White	—	36
		Infrared	880	

Control

Manual control using the buttons of the device front panel.

Remote control using a PC and "Videoscope".

Set of replaceable filters:

- YGB — band filter with bandpass of 420-1100nm;
- BGB-23 — IR low pass filter with threshold of 700 nm;
- RB-19 — IR high pass filter with threshold of 700 nm;
- RB-17 — IR high pass filter with threshold of 670 nm;
- RB-15 — IR high pass filter with threshold of 650 nm.

General information

Parameter	Value
Overall dimensions of the device, mm, max	450x450x650
Device weight, kg, max	20
Supply voltage, V	AC 100-240
Supply frequency, Hertz	50-60
Power consumption, W, max	65
Connection interface with PC	USB 2.0

Parameters of colour camera

USB 2.0 camera

Camera sensor 3 mln. Pixels

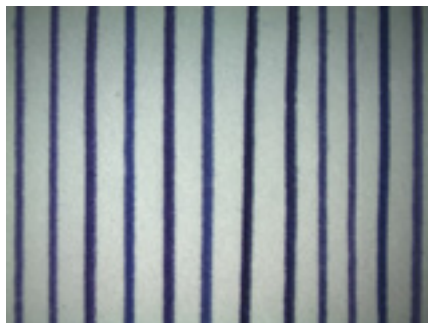
Frame sizes, pixels 1280x720 (HD),
1920x1080 (Full HD),
2048x1536 (Full Frame)

Magnification of lens	Digital circuit		
	Frame sizes 2048x1536		
	Field of view, mm	Resolution ppi	Magnification, times (for the monitor of 21-inch diagonal (533,4mm))
0.6	20.8x15.2	2470	20.6
1	11.6x8.6	4400	36.8
2	5.8x4.3	8500	73.8
4	2.8x2.1	17000	150.8
7	1.6x1.2	30700	266.7

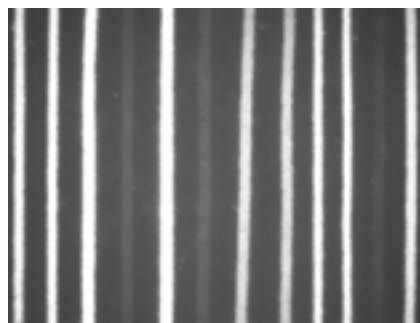
Magnification of lens	Visual channel			
	Eyepiece 8x		Eyepiece 14x	
	Field of view, mm	Magnification, times	Field of view, mm	Magnification, times
0.6	39	4.8	29	8.4
1	22	8	16	14
2	11	16	8	28
4	5.5	32	4	56
7	3	56	2.1	98

Photos taken under spectral luminescent light

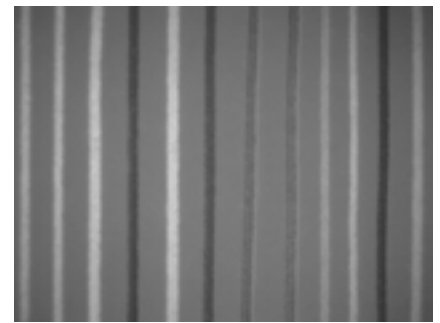
IR luminescence of the inks under green and red light sources:



White source



Green source



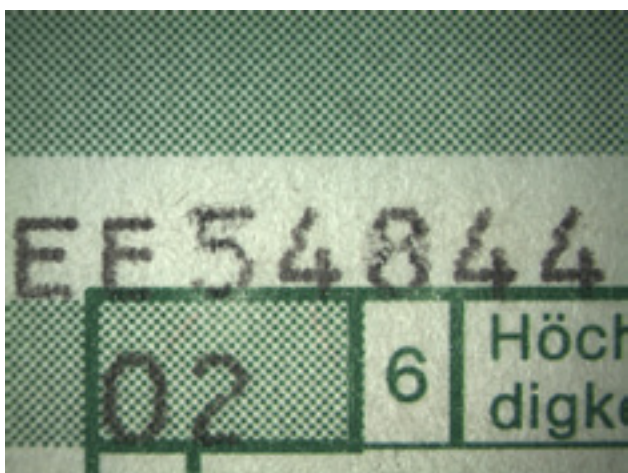
Red source

Photos taken under spectral luminescent light

The alterations detected in the IR-luminescence mode:



erasure



correction



UV luminescence



IR luminescence

Photos taken under spectral luminescent light

The relief of a banknote under white and IR oblique light:



IR oblique

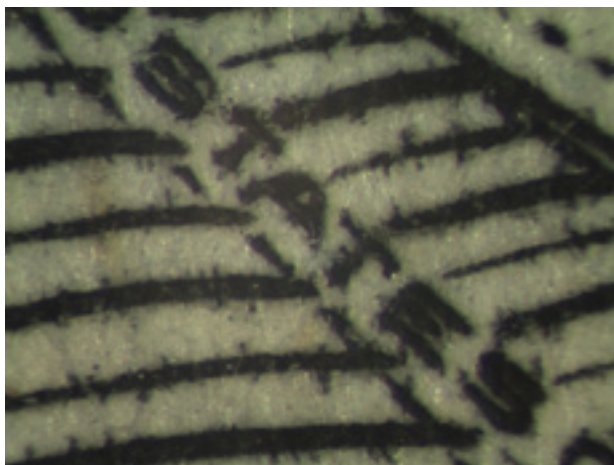


White oblique

Mircotext at different magnifications:



x1



x7

Photos taken under bottom light

Examination of a banknote under transmitted light:



White top



White bottom

Additional accessories

Bullet and cartridge case analysis stand

The bullet and cartridge case analysis stand enables to grip objects (bullets, cartridge cases, etc.) to be examined under the microscope. The stand also enables to rotate objects of examination radially and axially, as well as in the tangential direction (when the movable pincers are removed).

Rotation angle in the radial direction — 360° (division value of the scale — 1°)

Rotation angle in the radial direction — 90° (division value of the scale — 2°)

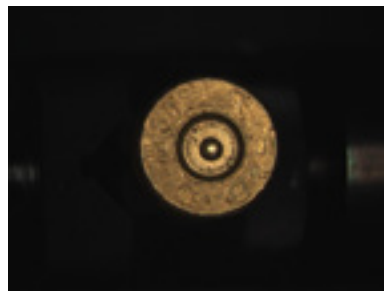


Bullet and cartridge case analysis stand

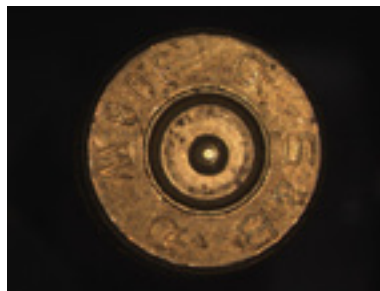


Bullet and cartridge case analysis stand with the movable pincers removed

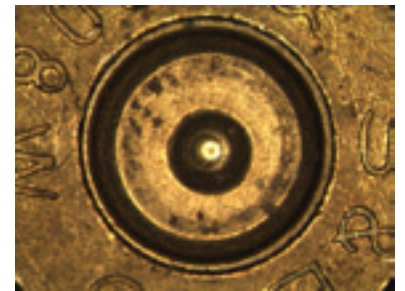
Photos taken under ring light



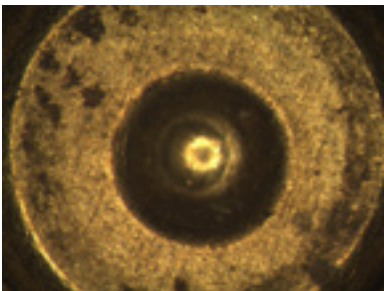
x0,6



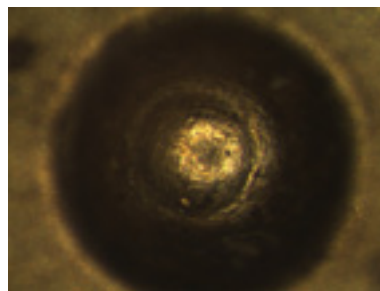
x1



x2



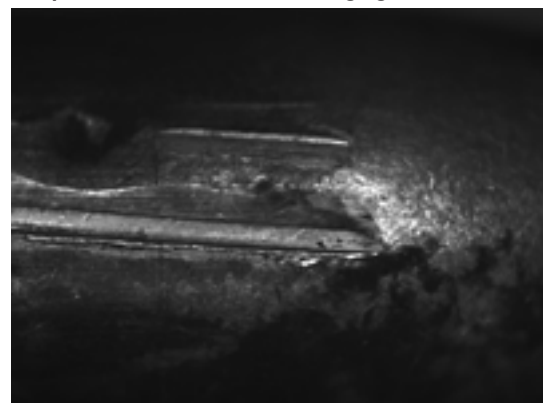
x4



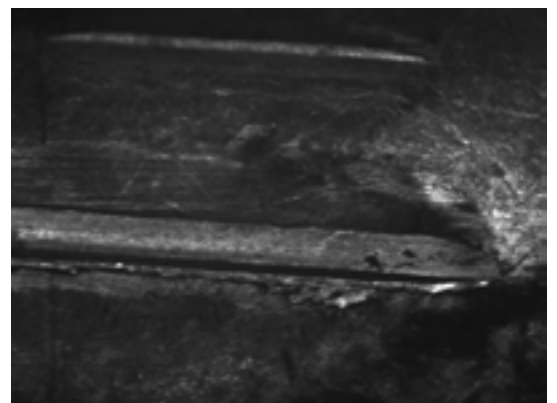
x7

The photo of a cartridge case under white ring light in different zoom modes

The photo of a bullet under IR ring light in different zoom modes:



x2



x4