

# Spectrocolorimeter “TKA-VD”/02



The device consists of one 02 optoelectronic unit (input window with a [cylindrical cosine nozzle of a luxmeter](#)  $\varnothing 17$ ) and a signal processing unit, interconnected by a flexible multicore cable. In this case, measurements are made only in the illumination mode created by normally located sources. The optoelectronic unit is a polychromator: the input optical radiation formed at the entrance slit is decomposed into a spectrum on a concave diffraction grating and focused on a diode array, from which a signal is taken for subsequent processing and calculation of the measured parameters. A device with a linear detector with a fixed position of the diffraction grating has no moving parts, which makes it possible to simultaneously record a relatively wide visible spectral region with imaging.

The device has a unique ability to determine the values  $\Delta$  of the correlated color temperature in real time and measure the exact values  $\Delta$  of the chromaticity coordinates of the radiation source using a special program protected by the [Certificate of Official Registration of the Computer Program No. 2003612396](#) .

### Basic technical data and characteristics of the device Spectrocolorimeter "TKA-VD" with one 02 block

A type	Direct measurement method
Receiver (for reference)	Polychromator, 128-pixel silicon solar cell array
Optical range (for reference)	390 ÷ 760 nm
Number of survey points (for reference)	61
Measuring ranges:	
<b>Correlated Color Temperature Reading Ranges</b>	1600 ÷ 16000 K
<b>Chromaticity Coordinate Measurement Ranges</b>	$x = 0.004 \div 0.734$ ; $y = 0.005 \div 0.834$ $u' = 0.007 \div 0.623$ ; $v' = 0.005 \div 0.595$
Working light limits	10 ÷ 20,000 lx

Limits of the permissible value of the absolute error of measuring the chromaticity coordinates $x, y$	
– sources with a continuous radiation spectrum	$\pm 0.005$
– other sources	$\pm 0.02$
Limit of permissible value of basic relative measurement error of correlated color temperature, no more	5.0%

### Overall dimensions of the device

Display (for reference)	2-line 16 character LCD with LED backlight
Threaded tripod mount	1/4 "
Indication and power supply unit (no more)	165x85x35 mm
Optoelectronic unit 02 (no more)	210x70x70 mm

Weight of the device (no more) (without a tripod)	1.5KG
A NiMH rechargeable battery is used to power the devices – Krona battery standard size	8.4V

The device Spectrocolorimeter "TKA-VD" has the ability to display information in two ways: on the built-in LCD and dumping data via the RS-232 interface

(virtual USB).

Updating the data output depends on the brightness level of the light source and takes up to 5 seconds. Switching modes to LCD is performed in a closed cycle by pressing the “ **Mode** ” button :

one	Display of <b>illumination</b> $E$ , lx and <b>chromaticity coordinates</b> $(x, y)$ in the MKO 31 system
2	Display of <b>illumination</b> $E$ , lx and <b>chromaticity coordinates</b> $(u', v')$ in the MCO 76 system
3	Display <b>color coordinates</b> $X, Y, Z$
four	Display of <b>correlated color temperature</b> $T_c$ , K

### Main advantages

- Compactness and ease of use
- Information output to the built-in LCD
- There are no direct domestic analogues
- Real-time value definitions
- Own program for communication with PC
- Low power consumption
- Simplicity and ease of use
- The optoelectronic unit contains a photometric nut (1/4 inch thread) for mounting on a tripod.

One of the important aspects in the organization of labor in an enterprise, in an organization for the sale of goods or the provision of services is the measurement of conditions at the workplace, and for this, with the help of instruments, a study of the correct illumination of color design is carried out. Our Spectrocolorimeter “TKA-VD” is suitable for measuring color coordinates and readings of color temperature of light sources with good accuracy. This instrument Spectrocolorimeter “TKA-VD”, is popular both in large organizations and among private clients who care about the compliance of their work or study place with the requirements of GOST. Spectrocolorimeter “TKA-VD”, the cost of which includes verification, is useful for a variety of research conditions, from domestic to scientific.