

**TKA SCIENTIFIC INSTRUMENTS
OPTICAL RADIATION METERS**



**SPECTROCOLORIMETER
«TKA-VD»
(TKA-VD/04)**

Instruction manual

**St. Petersburg
2007**

Warning!

The producer reserves to itself a right to introduce some minor changes into construction and electric circuit of the device "TKA-VD" without indicating them in the instruction manual. Some elements different from those, indicated in the documentation, can be installed in the device, at that metrological and exploitation characteristics of the device won't worsen.

1. INTRODUCTION

This set of exploitation documents, consisting of the instruction manual and passport, is compiled for studying of a principle of work of Spectrocolorimeter "TKA-VD"/04 (further in the text called "device") and also for being used as a guide while exploitation and servicing.

2. FEATURES

The model "TKA-VD/04" is designed to measure Relative spectral distribution $\varphi_{e,\lambda}(\lambda)$ and the irradiance from UV light sources in mW/m².

3. TECHNICAL SPECIFICATIONS

3.1. Measuring Ranges:

- UV-Irradiance, mW/m² 10 ... 20 000.

3.2. Spectral Response, nm 250 ... 460.

3.3. Instrument Accuracy, %:10, 0.

3.4. Ambient temperature:

- To satisfy specifications..... 0° to +40°C;

- Relative humidity, 85% RH (max) non condensing;

3.5. Dimensions

- BOS 165 W x 85 D x 35 H (mm),

- polychromator180 W x 55 D x 60 H (mm).

3.6. Weight, Approx, Kg 1, 0.

4. ACCESSORIES

Spectrocolorimeter "TKA-VD"/04.....1

Rechargeable Battery NiMH (17R8H-U1) 170 mAh 8, 4 V1

Battery charger1

Instruction manual1

Nullmodem (9-9) Cable RS-232C1

User manual Freeware Software.....1

Software disk in a box.....1

Consumer packaging.....1

Industrial packaging.....1

5. CONSTRUCTION AND PRINCIPLE OF WORK

5.1. The principle of work of the device is based on measuring of radiation spectrum of a source of optical radiation in the range of 250...460 nm with further calculation of integral irradiance.

5.2. Construction

5.2.1. The device consists of two functional blocks: a BOS and a polychromator, connected with a floppy multi-core cable.

5.2.2. Introduction of Front Panel:

«ON/ OFF» - MAIN POWER SWITCH OF THE INSTRUMENT;

«HOLD» - Data-Hold,

«MODE» - SELECT OPERATION MODES.

5.2.3. Introduction of Rear Panel: battery compartment.

6. PRECAUTIONS BEFORE OPERATING

6.1 Before setting to work a consumer should learn carefully the function of the device, its technical characteristics, structure, and principle of work and also the methods of carrying out of measuring.

6.2 Check the availability of a battery. For this purpose you should open the lid of the battery compartment and to insert a battery if necessary. If after switching on or when the device is in operation the sign "Charge a battery!" appears on the display you should charge a battery.

For charging a battery, use a battery charger, which is in the set of accessories. The time of charging is 16 hours. Prolongation of the time of charging to 48 hours doesn't worsen the work of a battery charge.

Warning!

When a battery charger is in operation you mustn't open the lid of a battery compartment.

7. ORDER OF WORK

7.1 Turn on the device by pressing the button "ON/OFF"

7.2 Place an inlet opening of an objective lens of the optoelectronic block parallel to the plane of a measured object. Make sure that a shadow from an operator, carrying out measuring, or shadows from other objects don't fall onto the objective lens.

Wait for 5-8 sec. and read the measured value on the digital display.

The display gives such information:

1	UV-Irradiance E_e (mW/m ²)
2	Max Irradiance $E_{e,m}$ (mW/m ²)

7.3. If measurements are beyond the receiver's sensitivity, a sign «UV-Irradiance is too much» will appear.

CAUTION!

It is not recommended to measure high UV-Irradiance levels for a long time!

7.4. To keep the measured reading on a display press the button «**HOLD**». A letter «**H**» will appear in the right part of a display. To continue measuring press the button «**HOLD**» once more.

7.5. When in regime «**HOLD**» you press the button «**MODE**» information on spectral characteristics of the measured signal appears. Revision of the measured spectrum of a signal, according to the wave-lengths (250...460 nm) is made with a button «**MODE**». To continue measuring press the button «**HOLD**» once more.

7.6. Switch off the device after use.

8. MAINTENANCE

8.1 Installation and changing of batteries.

Before exploitation of a device install a battery which is in the set of accessories. (If the enterprise-producer didn't do it).

Continued use with a low battery will lead to an abnormal reading.

Open the battery compartment. Please the battery into the insulation capsule and snap it onto the contacts.

If after switching on or when the device is in operation the sign "Charge a battery!" appears on the display you should charge a battery.

For charging a battery use a battery charger, which is in the set of accessories. The time of charging is 16 hours. Prolongation of the time of charging to 48 hours doesn't worsen the work of a battery charger.

When a battery charger is in operation you mustn't open the lid of a battery compartment.

9. STORAGE RULES

9.1. Storage Temperature & Humidity +5 to +40 0C , 85%RH (maximum).

10. ACCEPTANCE CERTIFICATE

A combined device "TKA-VD"/04, works number

was found disposable for service.

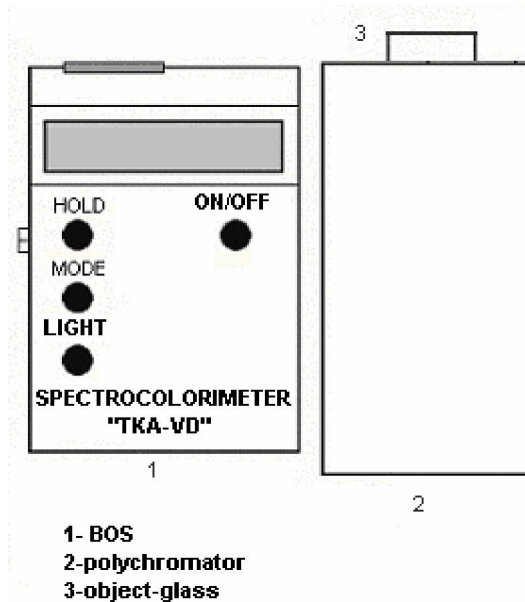
Issue Date: " ____ " _____ 200__ r.

The stamp of a Technical TCD: _____

Control Department

Date of sale: " ____ " _____ 200__ r.

The Spectrocolorimeter Structure (see figure 1).



(figure 1)

11. WARRANTY

11.1. The producer guarantees operational capability of the device and its correspondence to the main technical and metrological characteristics if exploitation and storage rules are observed.

11.2. The warranty period is 18 months since the date of sale.

11.3. If the device goes wrong before termination of a warranty period it is necessary to compile an act in which indicate a kind of faultiness and the time, when the device went wrong and send.

11.4. In case of mechanical damages to the body of the device, interface cable or battery charger or in case the instruction manual is absent the producer doesn't have to fulfill the warranty.

12. INFORMATION ON CHECKS (CALIBRATIONS)

Date	Place	Conclusion	Checker

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