Spectroradiometer “TKA-Spectr”



Instrument complete set

- Spectroradiometer “TKA-Spectr”
- Cosine corrector
- Power adapter with USB output
- PC communication cable
- Flash drive with software
- Manual
- Passport

- Plastic case
- Transport container

Main technical characteristics

Measurement mode	Continuous / Pause
Spectral range, *nm*	390 ÷ 760
Resolution / discreteness, *nm* (no more)	10 / 0.4
Measurement ranges: spectral density of radiance, *W / (sr m ^{2} nm)* spectral density of irradiance, *W / (m ^{2} nm)* chromaticity coordinates x, y in the MCO 1931 systemgeneral color rendering index $R_{a\ of}$ self-luminous objects	$10 \cdot 10^{-6}$ ÷ 1.0 $10 \cdot 10^{-5+}$ ÷ 0.5 x = 0.004 ÷ 0.734; y = 0.005 ÷ 0.834 1.0 ÷ 100.0
Limits of the permissible value of the relative measurement error of the SPEY (or SPEO) ,%	± 5.0
Limits of permissible absolute measurement error on the chromaticity coordinate scale, abs. units, for self-luminous objects	± 0.020
Accepted limits of the absolute error measure correlated color in the temperature range (for white light sources): • from 2000 *K* to 2300 K • more than 2300 *K* to 3300 *K* • more than 3300 *K* to 5100 *K* • more than 5100 *K* up to 7,200 *K* • more than 7,200 *K* up to 10,000 *K*	 ± 50 ± 100 ± 200 ± 500 ± 1000
Limits of permissible absolute error in measuring the general color rendering index of self-luminous objects ΔR_a	± 3.0
The limits of the additional relative error of the spectroradiometer when measuring energy quantities, due to the change in the sensitivity of the photodiode array when the air temperature changes by every 10 ° *C* in the range from 0 to +40 ° *C*,%	± 1.0
Indication ranges: luminance of continuous, *cd / m ^{2}* illuninance of continuous radiation, *lx* radiance of continuous, *W / (m ^{2} sr)* irradiance of continuous radiation, *W / m ^{2}* correlated color temperature, *K* PAR radiance in the range of 400 ÷ 700 nm, *µmol / (m ^{2} s sr)* PAR irradiance in the range 400 ÷ 700 nm, *µmol / (m ^{2} s)*	 0.1 ÷ 60 000 1 ÷ 200 000 $5 \cdot 10^{-4}$ ÷ 1000 $1 \cdot 10^{-4}$ ÷ 2000 1600 ÷ 50 000 0.01 ÷ 500 0.1 ÷ 2000

Calculated parameters: weighted radiance in the range 390 ÷ 760 *nm* , *W / (m ^{2} sr)* weighted irradiance in the range 390 ÷ 760 *nm* , *W / m ^{2}* color coordinates in MCO systems chromaticity coordinates in MCO systems dominant wavelength λ_s , *nm* color rendering indices of self-luminous objects difference between brightness in conditions of twilight and daytime vision color difference with an arbitrary reference source	blue light L_B , burn hazard L_R blue light E_B , burn hazard E_R 1931 XYZ and 1964 XYZ 1964 XYZ, 1976 u'v 'and 1976 L * a * b *CRI и CQSS/PΔE*$_{ab}$
Receiver	Polychromator, 1024-pixel array of silicon photocells
The minimum diameter of the photometric area, *mm*	15
Signal exposure time, *s*	0.007 ÷ 4
Measurement time, *s* , no more	10
Maximum output power of Bluetooth, class 2, *mW*	2.5
The maximum amount of supported micro SD, *GB*	2.0
Time of continuous operation of the spectroradiometer, *h* , not less	8
Spectroradiometer service life, *years*	7

Mechanical data of the device

- Ambient temperature: 0 to +40 ° *C*
- Weight of the device with a power supply: no more than 1.0 kg
- Overall dimensions: no more than 250 (L) x 100 (B) x 80 (H) *mm*
- Interface: USB / Bluetooth
- Power supply: built-in battery 3.7 *The*

On the underside of the device there is a threaded socket **(1/4 ″)** for mounting on a tripod

- *Operation manual "TKA-Spectr"*
- *Brief description of YUSUK.73.0001 MI*
- *Utility model patent*