

ITS-P

Test station for measurement of photometric parameters of II tubes



Fig. 1. Photo of the ITS-P measuring station (basic version)

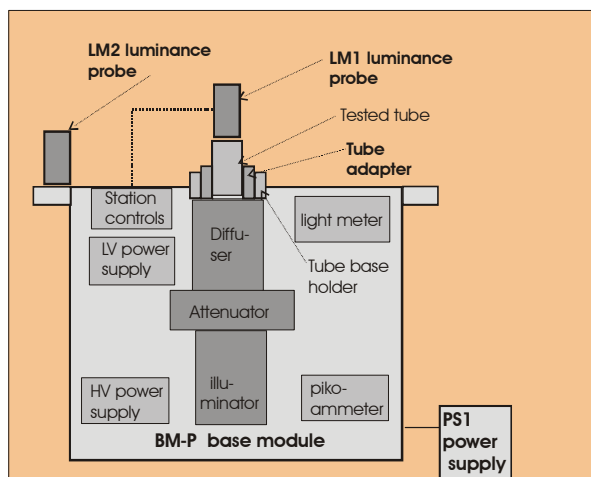


Fig.2. Block diagram of the ITS-P measuring station

BASIC INFORMATION:

The ITS-P measuring station is a test system that enable testing reactions of image intensifier tubes to light flux at different intensity levels. The ITS-P station illuminates tube photocathode with precisely controlled light flux and measures output intensity at the tube screen. The ITS-P station in enable measurement of all important photometric parameters like luminance gain, saturation level, EBI, luminous sensitivity, radiometric sensitivity and operational stability. ITS-P can be also optionally used for measurement of

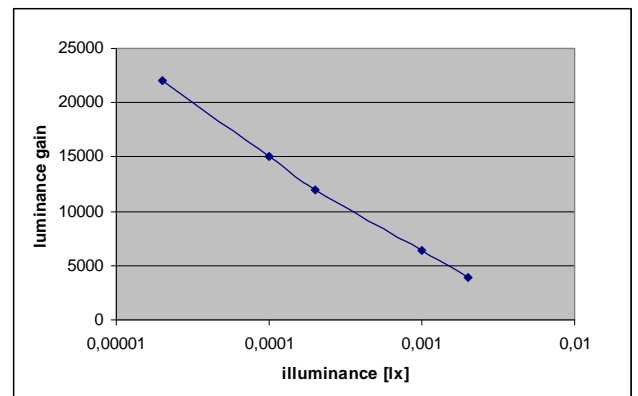


Fig.3. Luminance gain at different illuminance levels

temporal parameters: rise time, decay time, phosphor decay time (luminance persistence).

The station is built as a modern compact stand alone test station optimised for testing II tubes (not an archaic collection of different laboratory modules to be assembled by the user on a table). Practically all image intensifier tubes can be tested (different size: 18 mm or 25 mm; different generations: II, II+, III, IV; potted tubes or bare tubes). The test procedures used by the ITS-P station are based on recommendations of the MIL series standards.

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The ITS-P measuring station belongs to a family of the
ITS series test stations: ITS-P, ITS-I, ITS-R. .

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WHY TO TEST

- Photocathode luminous sensitivity and photocathode radiometric sensitivity –parameters determine potential tube sensitivity and tubes noise.
- Luminance Gain – information how many times brightness of the image of the observed scenery on the II tube screen is higher than brightness of the original scenery.
- Saturation Level – information about screen brightness when tube is saturated.
- EBI – information about screen brightness when tube is not illuminated
- Operational stability - information about temporal variation of screen brightness when input illumination is stable.

FEATURES:

- Enables to carry out the following tests:
 - Luminance gain, saturation level, EBI, operational stability of potted tubes
 - Luminance gain, saturation level, EBI, luminous sensitivity, radiometric sensitivity of bare II tubes
 - Different versions of ITS-P station of different measurement capabilities can be delivered.
- Versatile measuring tool for both testing laboratory and for production line
- Extremely high resolution and stability of illuminance regulation (a few magnitudes better than typical test systems)
- Continuous regulation of illuminance that enable thousands of different illuminance levels (typical test systems have step illuminance regulation and enable only no more than half a dozen of illuminance levels)

SPECIFICATIONS

Main modules of ITS-P station	BM-P base module, LM1 luminance probe, LM2 luminance probe, PS1 power supply, set of adapters for tube holder, set of DC cables (to power tested II tubes), IP Converter software
BM-P base module	
Light Source	equivalent 2850K color temperature source
Illuminance range	At least from 0.1 μlx to about 10 mlx
Regulation resolution	0.1 μlx (at low intensity range)
Regulation type	continuous (any value can be set within the regulation range)
Regulation mechanism	manual
Regulation stability	better than 2% of the set value
Mechanical holders	MX-10160, MX-10130, MX-11620 or equivalent tubes (other types are also possible)
Electrical connections	cables with exchangeable pins
Power source	DC 2.7V
LM1 luminance probe	
Type	calibrated silicon photodiode of photopic spectral response
Spectral range	Similar to human eye
Measurement range	0.05 cd/m^2 – 5000 cd/m^2
LM2 luminance probe	
Type	Calibrated intensified silicon photodiode
Spectral range	Similar to human eye
Measurement range	10 $\mu\text{cd}/\text{m}^2$ – 10 mcd/m^2

*specifications are subject to change without prior notice

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