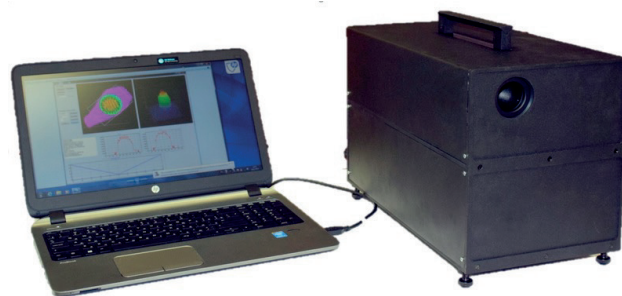


Measurement instrument of divergence angle of laser beam

IT IS DESIGNED FOR

Measurement of the spatial and energy characteristics of a laser beam.



PURPOSE OF A MEASURING INSTRUMENT

Measuring instrument of the divergence angle of the laser beam MID (hereinafter referred to as MID) is designed for measuring the divergence angle of pulsed laser radiation.

MEASURING INSTRUMENT DESCRIPTION

The principle of operation is based on determining the distribution of the energy density of pulsed laser radiation in the area of the focal plane, coming to input aperture of matrix sensor, calculating with the help of software the value of the width and angle of divergence of the laser beam based on the obtained distribution of energy density and indication of the measurement result on a laptop screen.

Structurally MID consists of laptop and calibrated on wavelength laser emission $0,532 \mu\text{m}$ of measuring unit, including primary matrix sensor, connected by the cable.

Measurement error of angle of divergence, in range $10 \div 30$ second of angle, %, not more than	10
Measurement error of angle of divergence, in range $100 \div 200$ second of angle, %, not more than	5
Working wavelength of the laser emission	$0,532 \mu\text{m}$
Laser beam diameter	$3 \div 30 \text{ mm}$
Pulse duration	$1 \cdot 10^{-11} \div 1 \cdot 10^{-7} \text{ s}$
Damage threshold	not more than 90 Wt/cm^2
Time of full measurement with averaging by 10 observations	not more than 30 s
Working temperature range	$+10 \div +35 \text{ }^\circ\text{C}$
Measurement range of angle of divergence	$10 \div 200$ second of angle
Main error of device in range of divergence angles from 10 to 30 angle	not more than 10%
Main error of device in range of divergence angles from 100 to 200 angle	not more than 5%
Time of setting the mode of operation	not more than 5 min
Time of continuous work	not less than 8 h
Mass without packing	not more than 16,5 kg
In packing	not more than 25 kg
Overall dimensions in packing	not more than $630 \times 500 \times 370 \text{ mm}$
Mean life	not less than 10000 h
Design life	not less than 10 years