



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai - 400076

Technical specifications

PR No.1000028097

Rfx No. 6100001216

1. Ultrafast pulse measurement device

Device capable of providing intensity and phase vs time, pulse spectrum and spectra phase, beam spatial profile, spatial chirp, pulse-front tilt with high sensitivity, single-shot capability, and zero alignment knobs.

- a. Center wavelength: 800 nm
- b. Pulse length range: 20-330 fs
- c. Delay increment: better than 0.9 fs/pixel
- d. Temporal range: greater than 500 fs
- e. Spectral resolution: better than 1.4 nm
- f. Spectral range: better than 140 nm
- g. Intensity accuracy: better than 2%
- h. Phase accuracy: 0.01 rad
- i. Single shot operation: Yes
- j. Sensitivity (single shot): better than 1 micro joule
- k. Sensitivity (1000 pps): better than 0.1 micro joule
- l. Spatial chirp accuracy: better than 1 micrometer/nm
- m. Pulse-front tilt accuracy: better than 0.05 fs/mm
- n. Dimensions: less than 35 cm in length, 10 cm in width, and 20 cm in height
- o. USB connection for power
- p. Zero moving parts (no delay stage)
- q. Should come with software to simulate the experimentally obtained trace
- r. Warranty is one year from the date of installation and commissioning.

2. Ultrafast pulse compressor

- a. Center wavelength: 800 nm, should work in 700 to 1100 nm range
- b. GDD @ center wavelength: greater than 38000 fs²
- c. Transmission @ center wavelength: greater than 70%
- d. Bandwidth @ maximum GDD: greater than 40 nm
- e. Bandwidth @half-maximum GDD: greater than 70 nm
- f. Capable of handling maximum peak power of 500 MW
- g. Pulse rep rate: 1 kHz
- h. Additional path length: less than 1.5 m
- i. Angular pulse-front tilt, spatial chirp, angular dispersion: all must be zero
- j. 1D beam magnification: 1
- k. Beam collinearity: better than 10 mrad
- l. Polarization rotation: less than 0.1 degree



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- m. Must have zero alignment knobs
- n. Length must be less than 50 cm
- o. Should be able to take input collimated beam up to 12 mm ($1/e^2$) in diameter
- p. Provide all data curves for evaluation
- q. Warranty is one year from the date of installation and commissioning.