MACH 6

200 kHz Energy Meter

KEY FEATURES

1. **UP TO 200 kHz PULSE-TO-PULSE**
   Measure EVERY pulse, with no sampling, at high rep rates, up to 200 kHz

2. **CAPTURE AND STORE UP TO 4 MILLION PULSES**
   Store 40 seconds of data at 100 kHz

3. **TRACK MISSING PULSES AND PULSES BELOW THRESHOLD**
   Know how many pulses were missed or that didn't make the energy threshold with this unique pulse feature

4. **SEVERAL HEADS TO CHOOSE FROM**
   Silicon, InGaAs and Pyroelectric heads for a broad wavelength and energy range

5. **ANALOG MODULE AVAILABLE**
   Use our fast M6 Detectors with the APM and an oscilloscope for fast analog energy measurements

6. **FULL-SPEED USB 2.0 CONNECTION**
   Ensures high data rate transfer and fast operation

7. **USER-FRIENDLY SOFTWARE WITH MANY DIAGNOSTIC FEATURES**
   - Live Mode, Strip Chart, Histogram and Statistics displays
   - FFT display of pulse energy data for temporal diagnostics
   - Life Test Mode to automate laser testing

AVAILABLE MODELS

• M6-6-Si	6 mm Ø, Silicon Sensor (0.35-1.1 µm)
• M6-6-Si-L	6 mm Ø, Silicon Sensor (0.35-1.1 µm), Low Noise Level
• M6-6-In	6 mm Ø, InGaAs Sensor (1.0-1.6 µm)
• M6-6-In-L	6 mm Ø, InGaAs Sensor (1.0-1.6 µm), Low Noise Level
• M6-6-PY	6 mm Ø, Pyroelectric Sensor with Metallic Coating (0.35-2.5 µm)
• M6-12.5-PY	12.5 mm Ø, Pyroelectric Sensor with Metallic Coating (0.35-2.5 µm)

All M6 heads need to be used with the Mach 6 Energy Meter

ACCESSORIES


Stand with Delrin Post
(Model Number: 200428)


Additional 9V Power Supply
(Model Number: 200960)


USB Cable
(Model Number: 202373)


APM Analog Power Supply
(Model Number: 201848)


M5-UV-QED
Relative Measurements in UV


Pelican Carrying Case

SEE ALSO

TECHNICAL DRAWINGS **170**
COMPATIBLE MODULES
MACH 6
APM
LIST OF ALL ACCESSORIES **186**
APPLICATION NOTES:
PULSE-TO PULSE MEASUREMENTS AT 130 KHZ 201923
MEASUREMENT LIMITS USING JOULEMETERS 201932

Watch the Demo video available on our website at www.gentec-eo.com

MACH 6

SPECIFICATIONS

MACH 6	M6-6-Si	M6-6-Si-L	M6-6-In	M6-6-In-L	M6-6-PY	M6-12.5-PY
MAX ENERGY	200 µJ	2 µJ	200 µJ	2 µJ	20 mJ	200 mJ
MAX AVERAGE POWER	5 W	5 W	5 W	5 W	5 W	25 W
MAX REP RATE	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz
EFFECTIVE APERTURE	6 mm Ø	6 mm Ø	6 mm Ø	6 mm Ø	6 mm Ø	12.5 mm Ø
MEASUREMENT CAPABILITY	With Mach 6	With Mach 6	With Mach 6	With Mach 6	With Mach 6	With Mach 6
Spectral Range	0.35 - 1.1 µm	0.35 - 1.1 µm	0.9 - 1.6 µm	0.9 - 1.6 µm	0.35 - 2.5 µm	0.35 - 2.5 µm
Max Measurable Energy [a]	200 µJ	2 µJ	200 µJ	2 µJ	20 mJ	200 mJ
Noise Equivalent Energy	2 nJ	20 pJ	2 nJ	20 pJ	0.2 µJ	2 µJ
Rise Time (0-100%)	150 ns	150 ns	150 ns	150 ns	150 ns	150 ns
Max Repetition Rate	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz	200 000 Hz
Max Pulse Width	100 nsec	100 nsec	100 nsec	100 nsec	100 nsec	100 nsec
Calibration Uncertainty	± 4%	± 4%	± 4%	± 4%	± 4%	± 4%
Repeatability	± 1%	± 1%	± 1%	± 1%	± 1%	± 1%
DAMAGE THRESHOLDS						
Max Avg Power (60 seconds)	5 W	5 W	5 W	5 W	5 W	25 W
Max Probe Energy (@ 1064 nm)	200 µJ	2 µJ	200 µJ	2 µJ	20 mJ	200 mJ
PHYSICAL CHARACTERISTICS						
Effective Aperture	6 mm Ø	6 mm Ø	6 mm Ø	6 mm Ø	6 mm Ø	12.5 mm Ø
Sensor	Silicon	Silicon	InGaAs	InGaAs	Pyroelectric	Pyroelectric
Dimensions	38.1 Ø x 58.4D mm	38.1 Ø x 58.4D mm	38.1 Ø x 58.4D mm	38.1 Ø x 58.4D mm	38.1 Ø x 58.4D mm	76H x 111W x 76D
Weight (Head only)	150 g	150 g	150 g	150 g	150 g	N/A
ORDERING INFORMATION						
Product Name	M6-6-Si	M6-6-Si-L	M6-6-In	M6-6-In-L	M6-6-PY	M6-12.5-PY
Product Number	202115	202116	202117	202118	202119	202120
Module	Mach 6: 202090					

Specifications are subject to change without notice

a. Maximum pulse energy reading will vary with wavelength and probe voltage responsivity (Rv). For more details, please read Application Note 121D-201932 and contact us at info@gentec-eo.com