AVAILABLE WITH integra

See page **36** for details

QE12

12 x 12 mm, 0.7 µJ - 3.9 J

KEY FEATURES

1. **MODULAR CONCEPT**
   Increase the power capability of your detector:
   2 different cooling modules
2. **LOW NOISE LEVEL**
   0.7 µJ for the MB coating
3. **QED ATTENUATOR AVAILABLE**
   - Measure up to 5X higher energies
   - Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
4. **AVAILABLE WITH METALLIC ABSORBER**
   High Repetition Rate (6000 Hz)
5. **TEST TARGET INCLUDED**
   With the MB models
6. **SMART INTERFACE**
   Containing all the calibration data
7. integra **OPTIONS**
   - Standard: USB Output (-INT)
   - In Option: RS-232 Output (-IDR) and External Trigger (-INE)

AVAILABLE MODELS

QE12LP-S-MB
(Broadband-Convection)

QE12LP-H-MB
(Broadband-Heatsink)

QE12SP-S-MT
(Metallic-Convection)

QE12SP-H-MT
(Metallic-Heatsink)

ACCESSORIES

Stand with Delrin Post
(Model Number: 200428)

DB-15 to BNC Adaptor
(Model Number: 200036)

QED-12 Attenuator
(Model Number: 201200)

Pelican Carrying Case

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QE12

CE NIST* Traceable WEEE/RoHS COMPLIANT

*Also traceable to NRC-CNRC

SPECIFICATIONS

	QE12LP-S-MB		QE12LP-H-MB		QE12SP-S-MT		QE12SP-H-MT	
MAX MEASURABLE ENERGY (WITH ATTENUATOR)	3.9 J		3.9 J		1.6 J		1.6 J	
MAX REPETITION FREQUENCY	300 Hz		300 Hz		6000 Hz		6000 Hz	
EFFECTIVE APERTURE	12 x 12 mm		12 x 12 mm		12 x 12 mm		12 x 12 mm	
MEASUREMENT CAPABILITY								
Spectral Range *	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
	0.19 – 20 µm	0.3 - 2.1 µm	0.19 – 20 µm	0.3 - 2.1 µm	0.19 – 20 µm [a]	0.3 - 2.1 µm	0.19 – 20 µm [a]	0.3 - 2.1 µm
Maximum Measurable Energy [b]	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, 10 Hz [c]	0.85 J	3.9 J	0.85 J	3.9 J	0.70 J	1.60 J	0.70 J	1.60 J
266 nm, 7 ns, 10 Hz	0.70 J	0.81 J	0.70 J	0.81 J	0.10 J	0.25 J	0.10 J	0.25 J
Noise Equivalent Energy [d]	0.7 µJ		0.7 µJ		0.8 µJ		0.8 µJ	
Sensitivity [e, f]	60 V/J		60 V/J		100 V/J		100 V/J	
Max Repetition Frequency	300 Hz [g]		300 Hz [g]		6000 Hz [g,h]		6000 Hz [g,h]	
Maximum Pulse Width (typical)	400 µs **		400 µs **		10 µs		10 µs	
Rise Time (typical 0-100 %)	550 µs		550 µs		20 µs		20 µs	
Calibration Uncertainty [i]	±3 %		±3 %		±3 %		±3 %	
Repeatability	<0.5 %		<0.5 %		<0.5 %		<0.5 %	
DAMAGE THRESHOLDS								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	3 W	7.5 W	5 W	12.5 W	3 W	7.5 W	5 W	12.5 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, single shot	0.6 J/cm²	16 J/cm²	0.6 J/cm²	16 J/cm²	0.50 J/cm²	4 J/cm²	0.50 J/cm²	4 J/cm²
1064 nm, 7 ns, 10 Hz	0.6 J/cm²	8 J/cm²	0.6 J/cm²	8 J/cm²	0.50 J/cm²	2 J/cm²	0.50 J/cm²	2 J/cm²
532 nm, 7 ns, 10 Hz	0.6 J/cm²	6 J/cm²	0.6 J/cm²	6 J/cm²	0.07 J/cm²	0.35 J/cm²	0.07 J/cm²	0.35 J/cm²
266 nm, 7 ns, 10 Hz	0.5 J/cm²	1 J/cm²	0.5 J/cm²	1 J/cm²	0.07 J/cm²	0.30 J/cm²	0.07 J/cm²	0.30 J/cm²
Maximum Average Power Density	10 W/cm²	600 W/cm²	10 W/cm² [j]	600 W/cm²	10 W/cm²	600 W/cm²	10 W/cm² [j]	600 W/cm²
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	12 X 12 mm (9 X 9 mm)							
Absorber	Multi-Band		Multi-Band		Metallic		Metallic	
Dimensions	36H x 36W x 14D mm		36H x 36W x 33D mm		36H x 36W x 14D mm		36H x 36W x 33D mm	
Weight	87 g		117 g		87 g		117 g	

ORDERING INFORMATION	Standard	With Attenuator [k]	Standard	With Attenuator [k]	Standard	With Attenuator [k]	Standard	With Attenuator [k]
Product Name	QE12LP-S-MB-D0	QE12LP-S-MB-QED	QE12LP-H-MB-D0	QE12LP-H-MB-QED	QE12SP-S-MT-D0	Call	QE12SP-H-MT-D0	Call
Product Number (without stand)	200526	202178	200528	202179	200531		200532	
Add Extension for INTEGRA (USB)	-INT	-INT	-INT	-INT	-INT	Call	-INT	Call
Product Number (without stand)	202724	202726	202720	202722	202730		202728	
Add Extension for INTEGRA (RS-232)	-IDR	-IDR	-IDR	-IDR	-IDR		-IDR	
Add Extension for INTEGRA (Ext Trig)	-INE	-INE	-INE	-INE	-INE		-INE	

Specifications are subject to change without notice // Compatible stand: P/N 200428

** *Also available on special order: The Extra Long Pulse Series QE12ELP-MB for pulse widths up to 2 msec, custom-tuned for rep. rate, sensitivity, and pulse width.*

* *For the calibrated spectral range, see the user manual.*

a. Detectors with the MT coating can be used within the range 0.19 to 20 µm, however the absorption in the IR wavelengths decreases significantly. This, in turn, reduces the sensitivity and increases the noise level.
b. Not exceeding Maximum Average Power.
c. Increasing pulse width increases the maximum measurable energy.
d. Nominal value, actual value depends on electrical noise in the measurement system.
e. Load: 1 MΩ and ≤ 30 pF.
f. Maximum output voltage = sensitivity x maximum energy.
g. With the IDR version, measured values are sampled when the repetition rate is >200 Hz.
h. 5700 Hz with INT version. Call us for up to 9000 Hz option.
i. Excludes non-linearities.
j. At 3 W. Maximum Average Power Density is 10 W/cm² @ 5 W for -H versions.
k. When -QED extension is added, the QE + QED come as one unit with a combined calibration only. See the "QED Attenuator" page for more options on the calibration.