



QE50

50 x 50 mm, 10 μ J - 85 J



KEY FEATURES

1. **MODULAR CONCEPT**
Increase the power capability of your detector:
2 different cooling modules
 2. **LOW NOISE LEVEL**
10 μ J for both coatings
 3. **QED ATTENUATOR AVAILABLE**
 - Measure up to 5X higher energies
 - Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
 4. **HIGH REPETITION RATE OPTIONS**
 - QE-MB: 200 Hz (Standard)
 - QE-MB: 500 Hz (Upon Request)
 - QE-MT: 4 000 Hz (Standard)
 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



QE50LP-S-MB
(Broadband-Convection)



QE50LP-H-MB
(Broadband-Heatsink)



QE50SP-S-MT
(Metallic-Convection)



QE50SP-H-MT
(Metallic-Heatsink)

ACCESSORIES



Stand with Delrin Post
(Model Number: 200428)



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



QED-50 Attenuator
(Model Number: 201198)



Pelican Carrying Case

SEE ALSO

HOW IT WORKS	12
CALIBRATION	6
TECHNICAL DRAWINGS	62
ABSORPTION CURVES	64
QED ATTENUATOR	41
COMPATIBLE MONITORS	
MAESTRO	20
S-LINK	28
M-LINK	32
LIST OF ALL ACCESSORIES	194
APPLICATION NOTES	
LONG PULSE JOULEMETER IN BURST MODE	202153

MONITORS

ENERGY DETECTORS

POWER DETECTORS

HIGH POWER SOLUTIONS

PHOTO DETECTORS

THZ DETECTORS

OEM DETECTORS

SPECIAL PRODUCTS

BEAM DIAGNOSTICS

QE50



*Also traceable to NRC-CNRC

SPECIFICATIONS

	QE50LP-S-MB		QE50LP-H-MB		QE50SP-S-MT		QE50SP-H-MT	
MAX MEASURABLE ENERGY (WITH ATTENUATOR)	85 J		85 J		44 J		44 J	
MAX REPETITION FREQUENCY	200 Hz		200 Hz		4000 Hz		4000 Hz	
EFFECTIVE APERTURE	50 x 50 mm		50 x 50 mm		50 x 50 mm		50 x 50 mm	
MEASUREMENT CAPABILITY								
Spectral Range *	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
	0.19 – 20 μm	0.3 - 2.1 μm^a	0.19 – 20 μm	0.3 - 2.1 μm^a	0.19 – 20 μm^b	0.3 - 2.1 μm^a	0.19 – 20 μm^b	0.3 - 2.1 μm^a
Maximum Measurable Energy ^c	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, 10 Hz ^d	15 J	85 J	15 J	85 J	13 J	44 J	13 J	44 J
266 nm, 7 ns, 10 Hz	12.5 J	22 J	12.5 J	22 J	1.8 J	6.5 J	1.8 J	6.5 J
Noise Equivalent Energy ^e	10 μJ		10 μJ		10 μJ		10 μJ	
Sensitivity ^{f, g}	3 V/J		3 V/J		4 V/J		4 V/J	
Max Repetition Frequency	200 Hz		200 Hz		4000 Hz		4000 Hz	
Maximum Pulse Width (typical)	675 μs **		675 μs **		10 μs		10 μs	
Rise Time (typical 0-100 %)	900 μs		900 μs		20 μs		20 μs	
Calibration Uncertainty ^h	± 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	10 W	25 W	20 W	45 W	10 W	25 W	20 W	45 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, single shot	0.6 J/cm ²	16 J/cm ²	0.6 J/cm ²	16 J/cm ²	0.50 J/cm ²	4 J/cm ²	0.50 J/cm ²	4 J/cm ²
1064 nm, 7 ns, 10 Hz	0.6 J/cm ²	8 J/cm ²	0.6 J/cm ²	8 J/cm ²	0.50 J/cm ²	2 J/cm ²	0.50 J/cm ²	2 J/cm ²
532 nm, 7 ns, 10 Hz	0.6 J/cm ²	6 J/cm ²	0.6 J/cm ²	6 J/cm ²	0.07 J/cm ²	0.35 J/cm ²	0.07 J/cm ²	0.35 J/cm ²
266 nm, 7 ns, 10 Hz	0.5 J/cm ²	1 J/cm ²	0.5 J/cm ²	1 J/cm ²	0.07 J/cm ²	0.30 J/cm ²	0.07 J/cm ²	0.30 J/cm ²
Maximum Average Power Density	10 W/cm ²	600 W/cm ²	10 W/cm ² ⁱ	600 W/cm ²	10 W/cm ²	600 W/cm ²	10 W/cm ² ⁱ	600 W/cm ²
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	50 X 50 mm (47 X 47 mm)							
Absorber	Multi-Band		Multi-Band		Metallic		Metallic	
Dimensions	75H x 75W x 15D mm		75H x 75W x 44D mm		75H x 75W x 15D mm		75H x 75W x 44D mm	
Weight	209 g		338 g		209 g		338 g	
ORDERING INFORMATION								
	Standard	With Attenuator ^j	Standard	With Attenuator ^j	Standard	With Attenuator ^j	Standard	With Attenuator ^j
Product Name	QE50LP-S-MB-D0	QE50LP-S-MB-QED	QE50LP-H-MB-D0	QE50LP-H-MB-QED	QE50SP-S-MT-D0	Call	QE50SP-H-MT-D0	Call
Product Number (without stand)	200479	202186	200481	202187	200484		200485	
Add Extension for INTEGRA (USB)	-INT	-INT	-INT	-INT	-INT	Call	-INT	Call
Product Number (without stand)	202750	202752	202746	202748	202756		202754	
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 QE50ELP-MB for pulse widths up to 5 msec, custom-tuned for rep. rate, sensitivity, and pulse width.

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

a. 0.19 - 0.3 μm with QEAS Attenuator, 0.3 - 2.1 μm with QED Attenuator.b. 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. Nevertheless, each detector is individually scanned and the wavelength correction factor (PWC) is NIST traceable in the range of 248 nm to 2.5 μm .

c. Not exceeding Maximum Average Power.

d. Increasing pulse width increases the maximum measurable energy.

e. Nominal value, actual value depends on electrical noise in the measurement system.

f. Load: 1 M Ω and ≤ 30 pF.

g. Maximum output voltage = sensitivity x maximum energy.

h. Excludes non-linearities.

i. At 10 W. Maximum Average Power Density is 5 W/cm² @ 20 W for -H versions.

j. 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.