



# QE95

95 mm Ø, 15 µJ - 250 J



## KEY FEATURES

- 1. MODULAR CONCEPT**  
Increase the power capability of your detector:  
2 different cooling modules
- 2. EXTRA LARGE APERTURE**  
Effective aperture of 95 mm Ø
- 3. QED ATTENUATOR AVAILABLE**
  - Measure up to 5X higher energies
  - Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
- 4. LOW NOISE LEVEL**  
15 µJ for the MB coating
- 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

QE95LP-S-MB  
(Broadband-Convection)QE95LP-H-MB  
(Broadband-Heatsink)QE95ELP-S-MB  
(Long Pulse-Convection)QE95ELP-H-MB  
(Long Pulse-Heatsink)

## ACCESSORIES

Stand with Delrin Post  
(200428, For -S Model)Stand with Delrin Post  
(201284, For -H Model)DB-15 to BNC Adaptor  
(Model Number: 200036)QED-95 Attenuator  
(Model Number: 201323)

Pelican Carrying Case

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## APPLICATION NOTE

LONG PULSE JOULEMETER  
IN BURST MODE

202153

## QE95



\*Also traceable to NRC-CNRC

## SPECIFICATIONS

	QE95LP-S-MB		QE95LP-H-MB		QE95ELP-S-MB		QE95ELP-H-MB	
<b>MAX MEASURABLE ENERGY (WITH ATTENUATOR)</b>	250 J		250 J		250 J		250 J	
<b>MAX REPETITION FREQUENCY</b>	40 Hz		40 Hz		10 Hz		10 Hz	
<b>EFFECTIVE APERTURE</b>	95 mm Ø		95 mm Ø		95 mm Ø		95 mm Ø	
<b>MEASUREMENT CAPABILITY</b>								
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	0.3 - 2.1 µm	0.19 – 20 µm	0.3 - 2.1 µm
Maximum Measurable Energy <sup>a,b</sup>	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 µs pulse, Single shot <sup>c</sup>	35 J	250 J	35 J	250 J	70 J	250 J	70 J	250 J
1064 nm, 7 ns, 10 Hz	35 J	150 J	35 J	150 J	35 J	150 J	35 J	150 J
266 nm, 7 ns, 10 Hz	30 J	50 J	30 J	50 J	30 J	50 J	30 J	50 J
Noise Equivalent Energy <sup>d</sup>	15 µJ		15 µJ		30 µJ		30 µJ	
Sensitivity <sup>e,f</sup>	2 V/J		2 V/J		0.6 V/J		0.6 V/J	
Max Repetition Frequency	40 Hz		40 Hz		10 Hz		10 Hz	
Maximum Pulse Width (typical)	1.5 ms		1.5 ms		5 ms		5 ms	
Rise Time (typical 0-100 %)	2 ms		2 ms		6 ms		6 ms	
Calibration Uncertainty <sup>g</sup>	±3 %		±3 %		±3 %		±3 %	
Repeatability	<0.5 %		<0.5 %		<0.5 %		<0.5 %	
<b>DAMAGE THRESHOLDS</b>								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	20 W	45 W	40 W	90 W	20 W	45 W	40 W	90 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 µs, 10 Hz	1.2 J/cm <sup>2</sup>	14 J/cm <sup>2</sup>	1.2 J/cm <sup>2</sup>	14 J/cm <sup>2</sup>	1.2 J/cm <sup>2</sup>	14 J/cm <sup>2</sup>	1.2 J/cm <sup>2</sup>	14 J/cm <sup>2</sup>
1064 nm, 7 ns, single shot	0.6 J/cm <sup>2</sup>	16 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	16 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	16 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	16 J/cm <sup>2</sup>
1064 nm, 7 ns, 10 Hz	0.6 J/cm <sup>2</sup>	8 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	8 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	8 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	8 J/cm <sup>2</sup>
532 nm, 7 ns, 10 Hz	0.6 J/cm <sup>2</sup>	6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	6 J/cm <sup>2</sup>
266 nm, 7 ns, 10 Hz	0.5 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	0.5 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	0.5 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	0.5 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>
Maximum Average Power Density (at 12 W)	10 W/cm <sup>2</sup>	600 W/cm <sup>2</sup>	10 W/cm <sup>2</sup> <sup>h</sup>	600 W/cm <sup>2</sup>	10 W/cm <sup>2</sup>	600 W/cm <sup>2</sup>	10 W/cm <sup>2</sup> <sup>h</sup>	600 W/cm <sup>2</sup>
<b>PHYSICAL CHARACTERISTICS</b>								
Effective Aperture (with Attenuator)	95 mm Ø (90 mm Ø)							
Absorber	Multi-Band		Multi-Band		Multi-Band		Multi-Band	
Dimensions	122H x 122W x 20D mm		122H x 122W x 98D mm		122H x 122W x 20D mm		122H x 122W x 98D mm	
Weight	0.78 kg		1.2 kg		0.78 kg		1.2 kg	
<b>ORDERING INFORMATION</b>								
Product Name	Standard	With Attenuator <sup>i</sup>	Standard	With Attenuator <sup>i</sup>	Standard	Standard		
Product Name	QE95LP-S-MB	QE95LP-S-MB-QED	QE95LP-H-MB	QE95LP-H-MB-QED	QE95ELP-S-MB-D0	QE95ELP-H-MB-D0		
Product Number (without stand)	201307	202194	201309	202195	201311	201313		
Add Extension for INTEGRA (USB)	-INT	-INT	-INT	-INT	-INT	-INT		
Product Number (without stand)	202778	202780	202774	202776	202772	202770		
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 stands: P/N 200428, 201284

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

a. Not exceeding Maximum Average Power.

b. Maximum depends on monitor.

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. Excludes non-linearities.

h. At 12 W. Maximum Average Power Density is 5 W/cm<sup>2</sup> @ 40 W

i. 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.