



# QE65

65 x 65 mm, 10  $\mu$ J - 200 J

MONITORS

ENERGY DETECTORS

POWER DETECTORS

HIGH POWER SOLUTIONS

PHOTO DETECTORS

THZ DETECTORS

OEM DETECTORS

SPECIAL PRODUCTS

BEAM DIAGNOSTICS



## KEY FEATURES

1. **MODULAR CONCEPT**  
Increase the power capability of your detector:  
2 different cooling modules
2. **LARGE APERTURE**  
Effective aperture of 65 x 65 mm
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**  
10  $\mu$ J for the MB coating
5. **TEST TARGET INCLUDED**  
With the MB models
6. **SMART INTERFACE**  
Containing all the calibration data

## AVAILABLE MODELS



QE65LP-S-MB  
(Broadband-Convection)



QE65LP-H-MB  
(Broadband-Heatsink)



QE65ELP-S-MB  
(XLong Pulse-Convection)



QE65ELP-H-MB  
(XLong 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-65 Attenuator  
(Model Number: 201282)



Pelican Carrying Case

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LONG PULSE JOULEMETER	
IN BURST MODE	202153

## QE65



\*Also traceable to NRC-CNRC

## SPECIFICATIONS

	QE65LP-S-MB		QE65LP-H-MB		QE65ELP-S-MB		QE65ELP-H-MB	
<b>MAX MEASURABLE ENERGY (WITH ATTENUATOR)</b>	200 J		200 J		200 J		200 J	
<b>MAX REPETITION FREQUENCY</b>	100 Hz		100 Hz		20 Hz		20 Hz	
<b>EFFECTIVE APERTURE</b>	65 x 65 mm		65 x 65 mm		65 x 65 mm		65 x 65 mm	
<b>MEASUREMENT CAPABILITY</b>								
Spectral Range *	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
	0.19 – 20 $\mu\text{m}$	0.3 - 2.1 $\mu\text{m}$	0.19 – 20 $\mu\text{m}$	0.3 - 2.1 $\mu\text{m}$	0.19 – 20 $\mu\text{m}$	0.3 - 2.1 $\mu\text{m}$	0.19 – 20 $\mu\text{m}$	0.3 - 2.1 $\mu\text{m}$
Maximum Measurable Energy <sup>a, b</sup>	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 $\mu\text{s}$ pulse, Single shot <sup>c</sup>	50 J	200 J	50 J	200 J	50 J	200 J	50 J	200 J
1064 nm, 7 ns, 10 Hz	25 J	125 J	25 J	125 J	25 J	125 J	25 J	125 J
266 nm, 7 ns, 10 Hz	20 J	35 J	20 J	35 J	20 J	35 J	20 J	35 J
Noise Equivalent Energy <sup>d</sup>	10 $\mu\text{J}$		10 $\mu\text{J}$		20 $\mu\text{J}$		20 $\mu\text{J}$	
Sensitivity <sup>e, f</sup>	4 V/J		4 V/J		1.5 V/J		1.5 V/J	
Max Repetition Frequency	100 Hz		100 Hz		20 Hz		20 Hz	
Maximum Pulse Width (typical)	0.7 ms		0.7 ms		5 ms		5 ms	
Rise Time (typical 0-100 %)	1 ms		1 ms		6 ms		6 ms	
Calibration Uncertainty <sup>g</sup>	$\pm 3\%$		$\pm 3\%$		$\pm 3\%$		$\pm 3\%$	
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	12 W	30 W	40 W	90 W	12 W	30 W	40 W	90 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 $\mu\text{s}$ , 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 (@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)	65 X 65 mm (62 X 62 mm)							
Absorber	Multi-Band		Multi-Band		Multi-Band		Multi-Band	
Dimensions	90H x 90W x 20D mm		90H x 90W x 94D mm		90H x 90W x 20D mm		90H x 90W x 94D mm	
Weight	440 g		900 g		440 g		900 g	
<b>ORDERING INFORMATION</b>								
	Standard	With Attenuator <sup>i</sup>	Standard	With Attenuator <sup>i</sup>	Standard	Standard		
Product Name	QE65LP-S-MB	QE65LP-S-MB-QED	QE65LP-H-MB	QE65LP-H-MB-QED	QE65ELP-S-MB	QE65ELP-H-MB		
Product Number (Including stand)	201255	202192	201256	202193	201324	201325		
Add Extension for INTEGRA	-INT	-INT	-INT	-INT	-INT	-INT		
Product Number (Including stand)	202765		202761	202763	202759	202757		

Specifications are subject to change without notice

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

a. Not exceeding Maximum Average Power.

b. Maximum measurable energy depends on the 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 M $\Omega$  and  $\leq$  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.