

# Newport's Laser and Detector Selection Guide



Solutions to Make, Manage and Measure Light<sup>SM</sup>



# Newport's Laser and Detector Selection Guide

This selection guide is designed to aid in choosing the most appropriate Newport detectors to measure the output power of your Spectra-Physics Lasers. The choices listed include the best optical power detector option(s) – Photodiode and Thermopile – for each specific laser based on performance and price at the time of this printing.

This selection guide does not cover energy (Pyroelectric) detectors; for guidance on selecting an energy detector for your Spectra-Physics Lasers, please contact a Technical Sales Engineer at 800-222-6440 or tech@newport.com.

## Spectra-Physics Ultrafast Oscillators and OPOs

	Newport - Thermopile Detectors	
	818P-010-12	818P-015-17W
<b>Mai Tai®</b>		
Mai Tai HP	✓	✓
Mai Tai BB	✓	✓
Mai Tai XF	✓	✓
Mai Tai XF-1	✓	✓
<b>Tsunami®</b>		
Tsunami HP fs (15 W pump)	✓	✓ <sup>2</sup>
Tsunami HP fs (10 W pump)	✓	✓ <sup>1</sup>
Tsunami BB fs (10 W pump)	✓	✓ <sup>1</sup>
Tsunami BB ps (10 W pump)	✓	✓ <sup>1</sup>
Tsunami BB fs (5 W pump)	✓	✓ <sup>1</sup>
Tsunami BB ps (5 W pump)	✓	✓ <sup>1</sup>
<b>OPOs</b>		
Opal	✓	✓

- ✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.
- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.
- For multiphoton imaging applications with Mai Tai and Tsunami lasers, 918D series detectors can be used for less than 2 W/cm<sup>2</sup> of output power density.
- For the recommended detectors for Mai Tai DeepSee, see the specific Mai Tai models in the chart above.

### Notes

- <sup>1</sup> can also measure the output power of laser pump source
- <sup>2</sup> can also measure the output power of laser pump source for up to 2 minutes of operation

## Spectra-Physics Ultrafast Amplifiers and OPAs

	Newport - Thermopile Detectors					
	818P-001-12	818P-010-12	818P-015-17W	818P-030-17W	818P-050-17W	818P-015-19
<b>Spitfire® Pro</b>						
Spitfire Pro		✓	✓	✓ <sup>1</sup>		
Spitfire Pro (XP and 5 W models)			✓	✓ <sup>1</sup>		✓
<b>Solstice™</b>						
Solstice			✓			✓
<b>OPAs</b>						
TOPAS	✓					
OPA-800C (fs and ps)	✓					
<b>Empower® Pump Lasers</b>						
Empower 15-xxx				✓		
Empower 30-xxx					✓	

- ✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.
- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.

### Notes

- <sup>1</sup> can also measure the output power of laser pump source for up to 2 minutes of operation

# Spectra-Physics High Energy Pulsed Lasers

## Newport - Thermopile Detectors

	818P-015-18	818P-030-18	818P-015-18H	818P-030-18H
<b>Quanta-Ray® Series</b>				
INDI-40-10	✓			
INDI-40-20	✓			
LAB-130-10	✓			
LAB-130-30	✓			
LAB-130-50	532, 355, 266	1064		
LAB-150-10	✓			
LAB-150-30	532, 355, 266	1064		
LAB-150-50	532, 355, 266	1064		
LAB-170-10			✓ <sup>2</sup>	
LAB-170-30			355, 266	1064, 532
LAB-170-50			355, 266	1064, 532
LAB-190-10			532, 355, 266	1064
LAB-190-30			355, 266	1064, 532
LAB-190-50			355, 266	1064, 532
LAB-190-100	355, 266	1064 <sup>1</sup> , 532		
PRO-230-10 (1064 nm)				✓ <sup>2</sup>
PRO-230-10 (532, 355, EEO-355, 266 nm)			✓	
PRO-230-30 (1064 nm)				
PRO-230-30 (532, 355, EEO-355, 266 nm)			355, EEO-355, 266	532
PRO-230-50 (1064 nm)				✓ <sup>1</sup>
PRO-230-50 (532, 355, EEO-355, 266 nm)	266		355, EEO-355	532
PRO-250-10 (1064, 532, 355, EEO-355 nm)				✓ <sup>2</sup>
PRO-250-10 (266 nm)	266			
PRO-250-30 (1064 nm)				✓ <sup>1</sup>
PRO-250-30 (532, 355, EEO-355, 266 nm)			355, EEO-355, 266	532
PRO-250-50 (1064 nm)				✓ <sup>1</sup>
PRO-250-50 (532, 355, EEO-355, 266 nm)			355, EEO-355, 266	532
PRO-270-10 (1064, 355, EEO-355, 266 nm)				✓ <sup>2</sup>
PRO-270-10 (266 nm)	266			
PRO-270-30 (1064 nm)				✓ <sup>1</sup>
PRO-270-30 (532, 355, EEO-355, 266 nm)	266			532, 355, EEO-355
PRO-270-50 (1064 nm)				✓ <sup>1</sup>
PRO-270-50 (532, 355, EEO-355, 266 nm)	266			532, 355, EEO-355
PRO-290-10 (1064, 532, 355, EEO-355 nm)				✓ <sup>2</sup>
PRO-290-10 (266 nm)	266			
PRO-290-30 (1064, 532, 355, EEO-355 nm)				✓ <sup>1</sup>
PRO-290-30 (266 nm)	266			
PRO-290-50 (1064 nm)				✓ <sup>1</sup>
PRO-290-50 (532, 355, EEO-355, 266 nm)	266			532, 355, EEO-355
PRO-350-10 (1064, 532, 355, EEO-355 nm)				✓ <sup>2</sup>
PRO-350-10 (266 nm)	266		266	
PIV-200-10	✓			
PIV-200-15	✓			
PIV-400-10	✓			
PIV-400-30	✓			
MOPO-PO	✓			
MOPO-SL	✓			
MOPO-HF	✓			

- ✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. The chart does not necessarily show all the compatible detectors, and is only intended to provide the best recommendation.
- ✓ Recommended detector for noted Spectra-Physics laser at all wavelengths unless otherwise specified.
- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.

### Notes

<sup>1</sup> requires attenuating the beam to less than 30 W of average power; detector damage may occur otherwise.

<sup>2</sup> requires attenuating the beam and expanding the beam to reduce the output power/energy density; detector damage may occur otherwise. Refer to the detector specification for its maximum limit.

# Spectra-Physics CW and Quasi-CW Lasers

	Newport - Thermopile Detectors										Newport - Low Power Detectors	
	818P-001-12	818P-010-12	818P-020-12	818P-015-17W	818P-015-19	818P-030-17W	818P-030-19	818P-050-17W	818P-050-50W	918D-UV-OD3	918D-SL-OD3	
<b>Excelsior®</b>												
EXLSR-375-8											✓	
EXLSR-375-16		✓									✓	
EXLSR-405-50		✓									✓	
EXLSR-405C-50		✓										
EXLSR-440-40		✓								✓	✓	
EXLSR-440C-40		✓										
EXLSR-473-5	✓											
EXLSR-473-10		✓										
EXLSR-473-50		✓										
EXLSR-532-10		✓										
EXLSR-532-20		✓										
EXLSR-532-50		✓										
EXLSR-532-100		✓										
EXLSR-532-150		✓										
EXLSR-532-200		✓										
EXLSR-561-20		✓										
EXLSR-561-50		✓										
EXLSR-635-35		✓								✓	✓	
EXLSR-635C-35		✓										
EXLSR-785-45		✓								✓	✓	
EXLSR-1064-500		✓										
EXLSR-1064-800		✓										
EXLSR-785C-45		✓										
<b>Cyan™</b>												
PCxxxxx (10–50 mW)		✓										
<b>Millennia® Pro</b>												
Millennia Pro 2s		✓				✓						
Millennia Pro 5s		✓				✓						
Millennia Pro 6s			✓			✓						
Millennia Pro 8s			✓			✓						
Millennia Pro 10s			✓			✓						
Millennia Pro 15s			✓					✓				
Millennia Pro 2i		✓				✓						
Millennia Pro 5i		✓				✓						
<b>Centennia™</b>												
Centennia TD5		✓				✓						
<b>Pantera™</b>												
Pantera 355 12W								✓				
<b>Vanguard™</b>												
VG355-250		✓		✓								
VG355-100		✓		✓								
VG355-035		✓		✓								
<b>Integra-MP</b>												
I20-8S-15KS (15W)						✓						
I40-8S-30KS (30W)								✓				
I80-8C-60KS (60W, 1.2mm)									✓ <sup>1</sup>			
I80-8SS-60KS (dual 30W)								✓				
<b>Integra-AG</b>												
IG80-8C-60KS(60W, 1.2mm)									✓ <sup>1</sup>			
<b>MG Laser</b>												
J20-MG-532C-2000				✓								

✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.

- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.
- Output power of most Excelsior lasers can be measured by 918D series detectors by expanding the beam and reducing the output power density (maximum limit for 918D-SL-OD3 is 2 W/cm<sup>2</sup>)

## Notes

<sup>1</sup> can measure the output power up to 2 minutes of operation

# Spectra-Physics Q-Switched Lasers

## Newport - Thermopile Detectors

	818P-010-12	818P-015-17W	818P-030-17W	818P-015-19	818P-040-25
<b>Explorer™</b>					
Explorer-349-060		✓			
Explorer-349-120		✓			
<b>Pulseo™</b>					
Pulseo-355Q					✓
<b>HIPPO™</b>					
HIPPO-106QW			✓		
HIPPO-532QW			✓		
HIPPO-355QW		✓			
HIPPO-266QW	✓			✓	
<b>Navigator™ I</b>					
X15SC-106Q		✓			
X15SC-532Q		✓			
X15SC-355Q		✓			
X15SC-266Q		✓			
X30SC-106Q		✓			
X30SC-532Q		✓			
Y70SC-106Q		✓			
Y70SC-532Q		✓			
<b>Navigator™ II</b>					
YHP40-106Q			✓		
YHP40-532Q			✓		
YHP40-355Q	✓			✓	
YHP40-266Q	✓			✓	
YHP70-106Q			✓		
YHP70-532Q		✓			
<b>Tristar™</b>					
Tristar-1000		✓			
<b>V-Xtreme™</b>					
V-Xtreme		✓			
J20I-V-106C-3000 (3 W) (CW model)		✓			
J20I-V-106C-1000 (1 W) (CW model)		✓			
<b>BL IR series</b>					
BL6-106Q		✓			
BL10-106Q		✓			
BL20-106Q		✓			
J20I-BL-106C (4 W) (CW model)		✓			
<b>BLS Series</b>					
BL6S-106Q		✓			
BL6S-532Q		✓			
BL6S-355Q		✓			
BL6S-266Q		✓			
BL8S-532Q		✓			
BL8S-355Q		✓			

- ✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.
- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.

# Spectra-Physics Tunable Lasers

Newport - Thermopile Detectors

818P-015-17W

<b>Matisse® Ring Lasers</b>	
Matisse (all D and T models)	✓
<b>Sirah Dye Lasers</b>	
Cobra, Cobra Stretch, Precision Scan <sup>1</sup>	
<b>CW Tunable Laser</b>	
3900S	✓

✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.

- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.

## Notes

<sup>1</sup> Sirah dye lasers are pumped by a Quanta-Ray Nd:YAG laser. Use the recommended detector for the specific pump laser models in the Quanta-Ray section.

# Spectra-Physics Gas Lasers

	Newport - Thermopile Detectors			Newport - Low Power Detectors		
	818P-010-12	818P-020-12	818P-015-19	818P-050-17W	918D-UV-OD3	918D-SL-OD3
<b>Stabilite® Lasers</b>						
Stabilite 2017 (all models)			✓			
Stabilite 2018-RM			✓			
<b>BeamLok® Lasers</b>						
BeamLok 2060 (all models)			✓			
BeamLok 2065 (all models)			✓			
BeamLok 2080-KV			✓			
BeamLok 2080-KR			✓			
BeamLok 2080-20S				✓		
BeamLok 2080-25S				✓		
BeamLok 2085-20/7.0S				✓		
BeamLok 2085-25/7.0S				✓		
<b>Ray Entertainment Lasers</b>						
BeamLok 2080-WR (all models)		✓				
BeamLok 2080-RR			✓			
BeamLok 2080-BR				✓		
<b>Air-Cooled Lasers</b>						
117A HeNe Series					✓	✓
161 Series	✓					
163 Series	✓					
177 Series	✓					
183 Series	✓					
185 Series	✓					

✓ Detector heads are selected based on cost effectiveness, power resolution and the ease of use. This chart does not necessarily show all the compatible detectors and is only intended to provide the best recommendation.

- Recommended power meters are 1935-C, 2935-C, 1918-C, 842-PE or 1916-C.
- Output power of most air-cooled ion lasers can be measured by 918D series detectors by expanding the beam and reducing the output power density (maximum limit for 918D-SL-OD3 is 2 W/cm<sup>2</sup>).



ISO 9001  
PM 27207

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