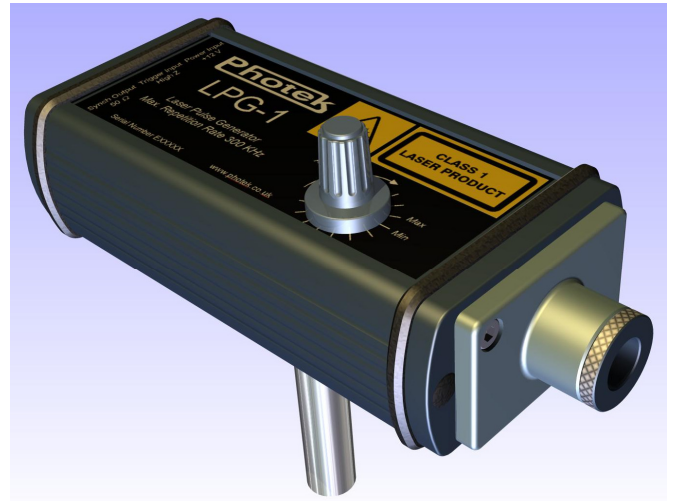


LPG-1



Laser Pulse Generator for Time-Resolved Detector Diagnostics



Applications

- Time response of high speed photomultipliers
- Gating measurement of image intensifiers

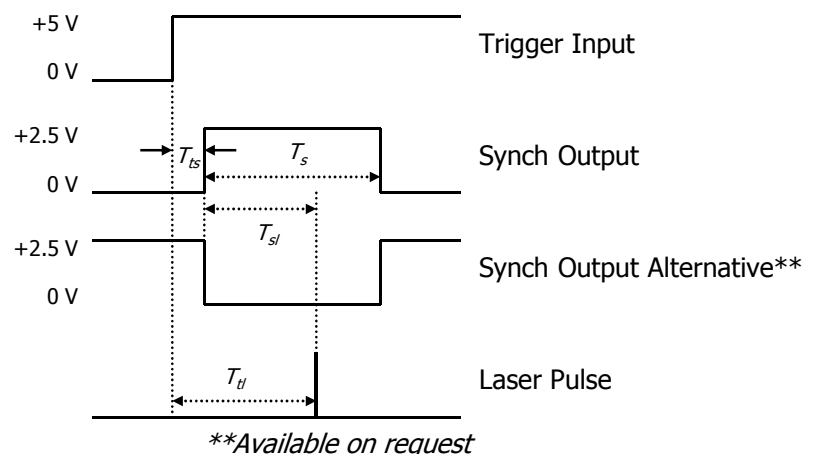
Features

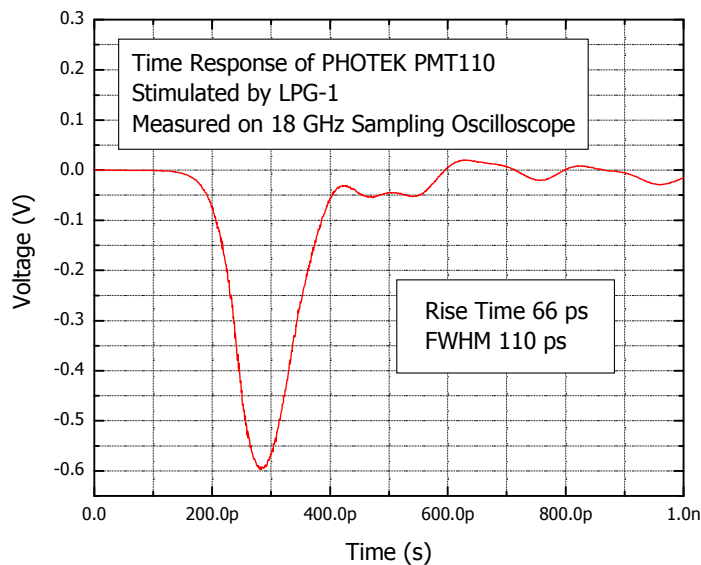
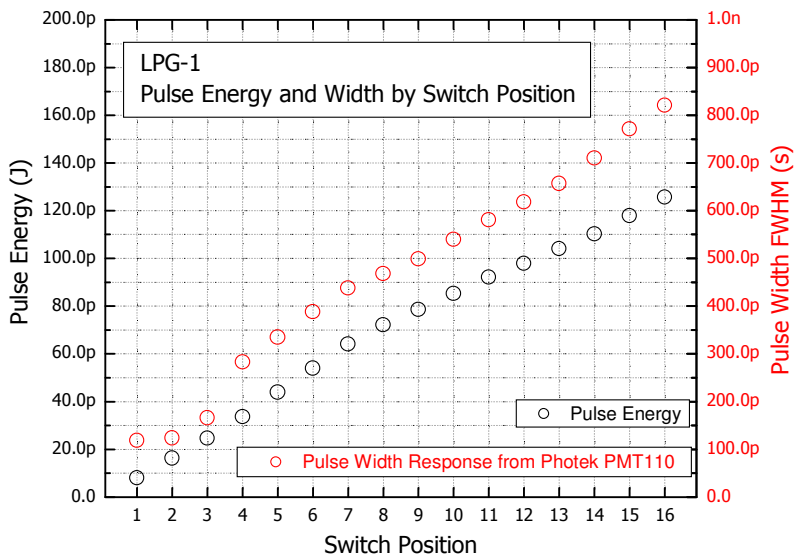
- Specifically designed for time-resolved diagnostics of high speed optical detectors
- Simple to use with only a trigger input and synch output connector
- A lens control allows the beam to be de-focussed and spread across the detector area
- A variable width control allows pulse widths from 50 ps up to 800 ps

LPG-1 Parameters	Minimum	Maximum
Wavelength λ	650 nm	
Linewidth $\Delta\lambda$	3 nm	
Laser Class	Class 1	
Pulse Energy	8 pJ	125 pJ
Repetition Rate	0 Hz "Single Shot"	300 KHz Self-limited
Trigger Input	+3.2 V High Ω input	+5.5 V High Ω input
Power Supply	+9 V	+18 V
Supply Current @ +12 V	85 mA (No Trigger)	125 mA
Synch Pulse Output Impedance	50 Ω	

Typical Timing Parameters

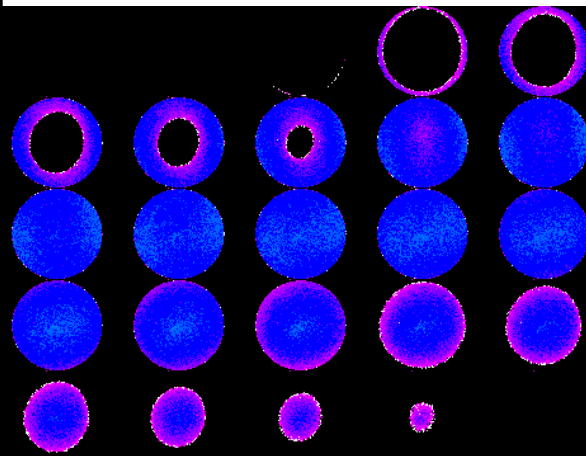
Trigger – Laser Delay T_{tl}^*	46 ns
Trigger – Synch Delay T_{ts}	14 ns
Synch – Laser Delay T_{sl}	32 ns
Synch Pulse Width T_s	90 ns
T_{tl} Jitter	3 ps r.m.s.
T_{sl} Jitter	2 ps r.m.s.
*Can be reduced down to a minimum of 29 ns. This will also reduce T_{sl} to 15 ns.	





Gating Measurement

The true optical gating of an image intensifier is observed by synchronising the LPG-1 laser pulse with the gate unit, then adjusting the relative delay and stepping the laser through the gate pulse.



This result shows a LPG-1 laser pulse being stepped through a 4 ns gate window generated by a PHOTEK GM200-3N gate unit on a PHOTEK MCP118 image intensifier. Each step represents an extra 200 ps delay on the laser pulse.

<i>Mechanical</i>	
Height	54 mm (not including mounting post)
Width	61 mm
Length	149 mm (approx)
Weight	260 g
Mounting Post Length	30 mm, 40 mm, 50 mm, 60 mm*, 80 mm, 100 mm, 120 mm, 150 mm, 200 mm, 250 mm, 300 mm
Mounting Post Diameter	12mm*, 20 mm
Trigger Input Connector	SMA
Power Supply Connector	SMB
Synch Output Connector	SMA
*Standard Issue	

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