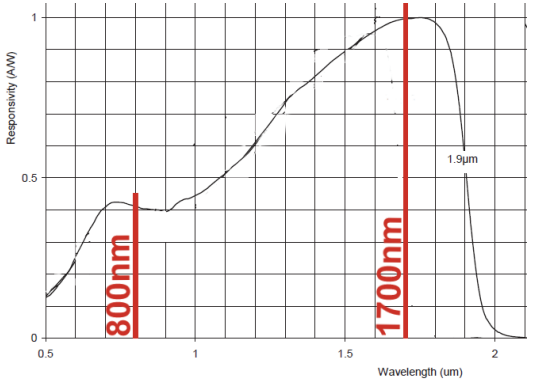
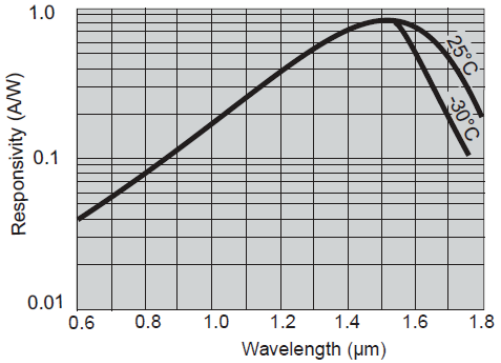
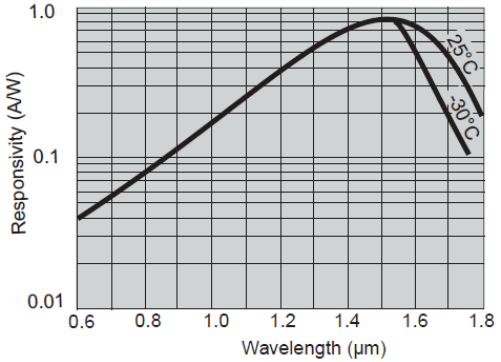
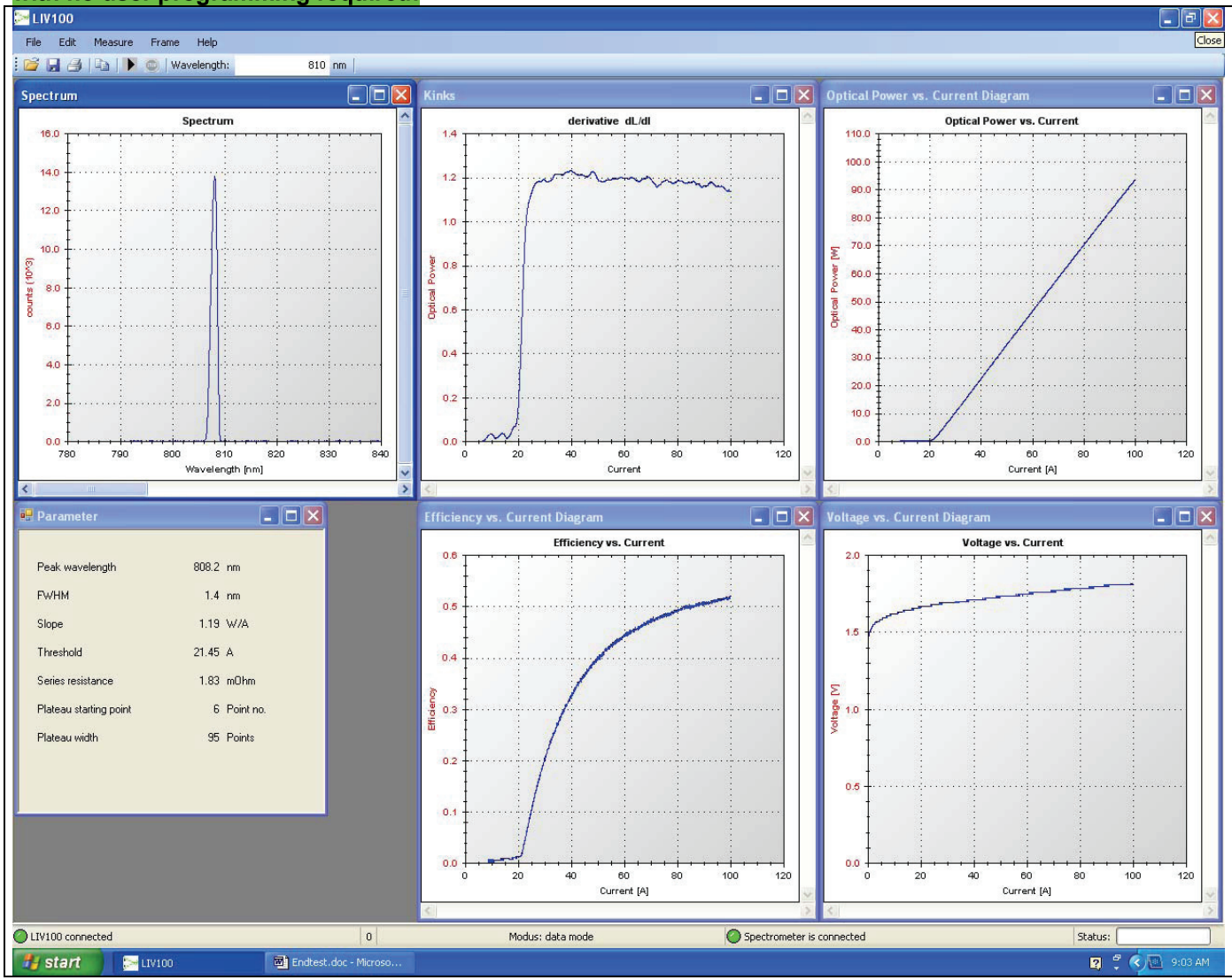
Comparison of Artifex LIV100-F005 with Keithley 2520/Kit1

Item	Description from Keithley 2520 specification sheet	Remarks	Remarks
1	Integrated, synchronized system for source and measure pulsed and continuous LIV (light-current-voltage) testing.	**Artifex Engineering LIV100-F005**	Competitor: Keithley 2520 + 2520INT
1.1	Laser Diode Pulse up to 5A; DC current source up to 1A.	Pulsed system. Includes burst mode (rapid pulsing at one current level).	
1.2	PULSE ON TIME: 500ns to 5ms, 100ns programming resolution.	150ns to 2ms 50ns programming resolution	
1.3	PULSE OFF TIME: 20µs to 500ms, 10µs programming resolution.	100µs to 500ms 50µs programming resolution	
1.4	VOLTAGE COMPLIANCE: 3V to 10V, 10mV programming resolution.	10V (for any load) No need for programming	
1.5	OUTPUT OFF: <200mΩ short across laser diode; measured at Remote Test Head connector.	✓	
1.6	Programmable pulse on time from 500ns to 5ms up to 4% duty cycle	150ns to 2ms 12% duty cycle	
1.7	14-bit measurement accuracy on three measurement channels (VF, front photodiode, back photodiode)	13-bit measurement accuracy on four measurement channels (VF, front photodiode, back photodiode, actual current)	
1.8	Laser Diode voltage measure range: 10V; MAX. LEAD RESOLUTION: 100Ω for rated accuracy.	✓	
1.9	Photodiode voltage bias source range: 0 to ±20VDC; PROGRAMMING RESOLUTION: 10mV.	Bias fixed internally and optimized for high speed. No need for programming.	
1.10	PHOTODIODE CURRENT MEASURE range: 100mA.		
1.11	Interface: GPIB, RS-232, 5 user-definable power-up states	USB with industrial USB connector and cable.	
1.12	01 Inch Integrating Sphere with Built-in Germanium Detector to test devices with 500ns pulse width.	30mm integrating sphere with fibre optic power pickup for interference free measurements down to 150ns pulse width.	

1.13	FULL ACCEPTANCE ANGLE1: 90° vertical, 50° horizontal (max.).	✓	
1.14	OPERATING WAVELENGTH RANGE: 950–1550nm.	✓ High responsivity throughout the wavelength range 500-1700nm! 	Keithley uses Ge which has strong temperature dependance >1540nm! Responsivity is very low (<0.2A/W) at 800-1000nm leading to poor S/N-ratio. 
1.15	CONTINUOUS WAVE (CW) CALIBRATION WAVELENGTH RANGE2: 950–1010nm and 1280 - 1620nm.	✓ InGaAs with best linearity and temperature coefficient up to 1750nm. Calibration 400-1650nm.	Keithley uses Ge which has strong temperature dependance >1540nm! 
1.16	MAXIMUM REVERSE BIAS: 5V	Set internally.	
1.17	DARK CURRENT AT MAX Reverse BIAS: 4µA (typ.); 10µA (max.).	DARK CURRENT AT MAX Reverse BIAS: 0.1µA (typ.); 1µA (max.).	

1.18	FIBER TAP PORT: Connector Type: SMA. Numerical Aperature (NA): 0.22 (typ.).	✓	
1.19	INPUT PORT DIAMETER: 0.25 in (6.35mm).	5mm	
	Accessories		
1.20	3ft Triax cable x1	One fully configured strip line connector included. Many contact formats available for packaged lasers, chips or bars.	
1.21	Quick Start guide and Calibration data	Full operating manual and calibration data. System included graphical user interface with sweep mode, scope mode and burst mode. Software development kit includes LabVIEW VI, visual basic code and command list for custom integration.	
1.22	Base and ¼ -20 post for mounting	✓	

Graphical user interface (GUI) included which performs a full analysis with no user programming required:



The Keithley 2520 does not come with software. Instead, Keithley offers some selection of LabVIEW demo VIs. Their instrument is designed to be programmed by the user which involves a large amount of work.