

685-0.5 ComboPak, 500mA/10V Laser, 3A/3.5V TEC



The **685-0.5 ComboPak** offers excellent laser performance, useful for a wide range of laser and LED devices. With 20uA set point resolution and less than 5uA of noise, the 685-0.5 provides a transparent driver that won't interfere with the performance of your laser or LED devices. Couple that with a high performance TEC controller that supports excellent long term stability and high resolution.

Develop with a ComboSource, Deploy with a ComboPak

The ComboPak is command-set compatible with the ComboSource and also features the same laser and TEC interfaces. This means you can start your development with the ComboSource, a robust benchtop instrument with a full user interface and display, then move to the lower cost ComboPak as you roll out the application to production or your end-users.

- Laser
 - 500mA / 10V
 - 0.02mA resolution
 - <5 uA noise
 - Analog modulation
- TEC
 - 3A / 3.5V / 10.5W
 - Thermistor input
 - Fully adjustable PID
- USB interface

Analog or Computer -- Your Choice

The 685 Series ComboPaks provide both a robust analog interface as well as USB computer control for precise remote operation (you can even use both interface simultaneously). The analog interface provides on/off control and status, while the computer interface provides complete control over all operating parameters.

Analog Modulation

The 685-0.5's analog interface supports modulation rates up to 100kHz.

Simple Multi-Channel System

Using the [1402C-RM Rack Mount Tray](#), you can quickly rack groups of 3 or 5 Paks into a rack for a quick multi-channel system.



Universal AC Input

The ComboPak features a universal AC input, eliminating the need to reconfigure the instrument when moving your application internationally.

Specifications

Summary

Laser Driver	500mA, 10 Volt
Temperature Controller	3 Amp, 3.5 Volt, 10.5 Watt

Laser Driver

LASER CURRENT	
Range (mA)	0 – 500
Resolution (mA)	0.01
Accuracy (\pm [% set + mA])	0.025% + 0.03
Stability (ppm, time)	< 10, 1 hour
Temperature Coeff (ppm/°C)	50
Noise/Ripple (μ A rms, low BW)	< 5
Transients (μ A)	< 100
Compliance Voltage (V)	10
Modulation Bandwidth (kHz)	100
Modulation Input Range	0 – 10V, 10k Ω
PHOTODIODE CURRENT	
Range (μ A)	5 – 5,000
Resolution (μ A)	0.1
Accuracy (\pm [% set+ μ A])	0.05% + 1
Stability (ppm, time)	< 200, 24 hours
Temperature Coeff (ppm/°C)	< 200
PD Bias (V)	-2.5V, fixed
LASER VOLTAGE	
Range (V)	0 – 10
Resolution (V)	0.001
Accuracy (\pm [% set+V])	0.05% + 0.005
Stability (ppm, time)	< 50, 1 hour
Temperature Coeff (ppm/°C)	< 100
Four-wire Measurement	Yes
LIMITS	
Current Limit Accuracy (mA)	5
Voltage Limit Accuracy (\pm % FS)	2.5%

Temperature Controller

Power (A, V, W)	\pm 3A, \pm 3.5V, 10.5W
TEMPERATURE	
Stability (1 hour, °C)	0.002
Stability (24 hours, °C)	0.005
Range (°C)	-99 to 250
Resolution (°C)	0.01
Temperature Accuracy at 25°C (°C)	0.03
Sensor	
Type	Thermistor
Accuracy (\pm [% reading + k Ω])	0.05 + 0.005
Range (k Ω)	0.02 – 45
Resolution (k Ω)	0.001
Bias (μ A)	100
CURRENT	
Range (A)	\pm 3
Compliance Voltage (V)	> \pm 3.5
Max Power (W)	10.5
Resolution (A)	0.01
Accuracy (\pm [% value + A])	0 + 0.03
Noise/Ripple (A, rms)	< 0.005
Current Limit Accuracy (A)	0.05
VOLTAGE (measurement only)	
Accuracy (\pm [% reading + V])	0 + 0.05
Range (V)	> \pm 3.5
Resolution (V)	0.01

General

Laser Connector	DB-9, female
TEC Connector	DB-15, female
Computer Interface	USB 2.0 Full Speed (USB Type B)
Power	Universal 90 - 250 VAC, 50/60 Hz
Size (H x W x D) [inches (mm)]	2.6 (66) x 4.5 (114.3) x 8.5 (215)
Operating Temperature	+10°C to +40°C
Storage Temperature	-20°C to +60°C