ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Newport 8610.8C* at our website: ***Click HERE***

Model 8008

Modular Controller

Key Features

- *Complete system controller for 8 channel applications, EDFA pumping or DWDM signal sources*
- *16 channel controller for 2-D VCSEL arrays*
- *8600.8C combo LDD/TEC modules feature a programmable signal generator (200 Hz–300 kHz)*
- *8501.8D dual output LDD modules have 100 mA current source tailored for use with VCSELs*
- *IEEE-488 and RS-232C interfaces*
- *LabVIEW drivers are provided*



The **Model 8008 Modular Controller** expands on the modular laser diode controller concept to meet the higher channel densities found in Dense WDM (DWDM) applications and 2-D VCSEL arrays. The eight bays accept either 8600C Combo Laser Diode Driver (LDD)/ Temperature Controller (TEC) modules or 8500D Dual Output LDD modules.

8600C Series Combo LDD/TEC modules are designed for use in communication applications and have an internal function generator for testing systems. The user only needs to program the frequency, I_{max}, and I_{min} to modulate the laser diode output. Both sinewave or squarewave (50% duty cycle) waveforms are available from 200 Hz–300 kHz. This range of frequencies meets today's low frequency single-tone and high data rate test requirements for datacom and telecom.

For 2-D VCSEL arrays or high-density laser diode applications, where temperature control is not required for each individual laser diode, the 8500D modules allow the control of up to 16 lasers from a single Model 8008 mainframe.

The mainframe automatically detects which module is installed in each bay and displays the system configuration on a large LCD screen. A sophisticated processor provides enhanced system control and data collection capabilities.

GPIB/IEEE-488 and RS-232C interfaces are included with the Model 8008 for complete remote control and data collection. LabVIEW drivers are supplied with each 8008 mainframe. Automated testing and device evaluation are easily implemented using Newport's extensive library of LabVIEW commands.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Dual LDD Module Specifications

	8501.8D[3]	8505.8D[3]	8510.8D[3]
Laser Output			
Output Current Range (mA)	0–100	0–500	0–1000
Output Current Resolution (mA)	0.0015	0.0076	0.0153
Output Current Accuracy[1]	±(0.03% + 5 µA)	±(0.03% + 15 µA)	±(0.03% + 30 µA)
Compliance Voltage (V)		3	
Temperature Coefficient (ppm FS/°C)		<50	
Short-Term Stability (1 h) (ppm FS)		<10	
Long-Term Stability (24 h) (ppm FS)		<50	
Noise/Ripple (rms) (µA)[2]	<2	<2	<2.5
Current Limit			
Range (mA)	0–100	0–500	0–1000
Resolution (mA)		1	
Accuracy (mA)		±2	
Photodiode Input			
Monitor Current Range (mA)		0–5	
Monitor Current Stability (24 h)		±0.02% FS	
Monitor Current Accuracy[1]		±(0.004% + 0.5 µA)	
Temperature Coefficient		<0.02% FS/°C	
Photodiode Reverse Bias		None	
Measurement Display			
Output Current Range (mA)	0 to 100.00	0–500.00	0–1000.0
Output Current Resolution (mA)	0.01	0.01	0.1
Output Current Accuracy[1]	±(0.02% + 10 µA)	±(0.02% + 20 µA)	±(0.02% + 200 µA)
Forward Voltage Range (V)		0.000–3.000	
Forward Voltage Resolution (mV)		1	
Forward Voltage Accuracy[1]		±(0.005% + 1 mV)	
Photodiode Current Range (µA)		5–5000	
Photodiode Current Resolution (µA)		0.1	
Photodiode Current Accuracy[1]		±(0.01% + 0.5 µA)	
PD Response Range (µA/mW)		0.00–600.00	
PD Response Resolution (µA/mW)		0.01	
Optical Power Range (mW)	0.00–100.00	0.00–500.00	0.00–1000.0
Optical Power Resolution (mW)		0.01	

1) ± (x% Reading + Fixed Error)
2) True rms, 3 Hz–300 kHz, 1/2 FS, resistive load
3) Configured for Common-Cathode. Please call for Common-Anode configuration.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Temperature Controller Specifications (all modules)

TEC Output	
Type	Bipolar, low noise
Maximum Current (A)	2
Maximum Voltage (V)	4
Typical Power (W)	8
Current Limit	
Range (A)	0–2.0
Accuracy (mA)	±10
Ripple/Noise (rms) (mA)	<1
Short-Term Stability (1 h)	0.0005°C
Long-Term Stability (24 h)	0.001°C
Temperature Coefficient	<0.05°C/°C
TEC Measurement Display	
Temperature	-100.00 to +240.00°C
Resistance (10 µA) (kΩ)	0.01–495
Resistance (100 µA) (kΩ)	0.001–49.5
TE Current (A)	-2.000 to +2.000
Temperature	0.01°C
Resistance (10 µA) (Ω)	10
Resistance (100 µA) (Ω)	1
TE Current (mA)	1
Temperature[2]	Typical ±0.1°C
Resistance (10 µA)[1]	±(0.04% + 16Ω)
Resistance (100 µA)[1]	±(0.05% + 8Ω)
TE Current[1]	±(0.3% + 2 mA)
Temperature Sensor	
Sensor Type	
Sensor Bias (µA)	10/100
Thermistor Calibration	
$1/T = (C1 \times 10^{-3}) + (C2 \times 10^{-4})(\ln R) + (C3 \times 10^{-7})(\ln R)^3$	

1) ± (x% Reading + Fixed Error)
2) Temperature is a value derived from the sensor's parameter (resistance) using the thermistor calibration equation. Accuracy can be computed by applying the sensor's parameter to the above equation at the temperature in question.
3) May be less with common laser anode/thermistor package
4) True rms, 3 Hz–300 kHz, 1/2 FS, resistive load
5) Output current may begin to roll-off at higher frequencies

Combination LDD & TEC Module Specifications

Laser Diode Driver Section	**8601.8C**	**8605.8C**	**8610.8C**
Laser Output			
Output Current Range (mA)	0–100	0–500	0–1000
Output Current Resolution (mA)	0.0015	0.0076	0.0153
Output Current Accuracy[1]	±(0.03% + 5 µA)	±(0.03% + 15 µA)	±(0.03% +30 µA)
Compliance Voltage (V)[3]		3	
Temperature Coefficient (ppm FS/°C)		<50	
Short-Term Stability (1 h) (ppm FS)		<10	
Long-Term Stability (24 h) (ppm FS)		<50	
Noise/Ripple (rms) (µA)[4]	<2	<2	<5
Current Limit			
Range (mA)	0–100	0–500	0–1000
Resolution (mA)		1	
Accuracy (mA)		±2	
Internal Function Generator			
Waveforms		Sinewave, Squarewave	
Frequency Range[5]		200 Hz–300 kHz	
Squarewave Duty Cycle		50 ±5%	
Independent Output Set Points		I_{max}, I_{min}	
Frequency Jitter		<1%	
Frequency Accuracy		±5%	
Amplitude Accuracy		±5%	
Sinewave THD		<2%	
Squarewave Risetime (µsec)	<1	<5	<10
Photodiode Input			
Monitor Current Range (mA)		0–5	
Monitor Current Stability (24 h)		±0.02% FS	
Monitor Current Accuracy[1]		±(0.004% + 0.5 µA)	
Temperature Coefficient		<0.02% FS/°C	
Photodiode Reverse Bias		Contact Newport	
Measurement Display			
Output Current Range (mA)	0–100.00	0–500.00	0–1000.0
Output Current Resolution (mA)	0.01	0.01	0.1
Output Current Accuracy[1]	±(0.02% + 10 µA)	±(0.02% + 20 µA)	±(0.02% + 200 µA)
Forward Voltage Range (V)		0.000–3.000	
Forward Voltage Resolution (mV)		1	
Forward Voltage Accuracy[1]		±(0.005% + 1 mV)	
Photodiode Current Range (µA)		5–5000	
Photodiode Current Resolution (µA)		0.1	
Photodiode Current Accuracy[1]		±(0.01% + 0.5 µA)	
PD Response Range (µA/mW)		0.00–600.00	
PD Response Resolution (µA/mW)		0.01	
Optical Power Range (mW)	0.00–100.00	0.00–500.00	0.00–1000.0
Optical Power Resolution (mW)	0.01	0.01	0.1

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Mainframe Specifications

Display Type	LCD graphics display, 128 H x 240 W pixels
Display Backlighting	Green LED
Display Controls	Brightness, contrast (contrast optimizes viewing angle) and invert screen
Laser Diode On Indicator	Green LASER ACTIVE LED indicates at least one laser diode is on
Output Connectors	
Output Connectors Dual LDD	Two 9-pin female D-sub
Output Connectors Combo LDD/TEC	9-pin female D-sub (LDD), and 15-pin female D-sub (TEC)
Chassis Ground	4 mm banana jack
GPIB	24-pin IEEE-488
RS-232C	9-pin male D-sub
Power Requirements	90–132 V (max. 5 A), 198–250 V (max. 2.5 A), 50–60 Hz
Size (H x W x D) [in. (mm)]	5.25 (133) x 16.75 (426) x 14 (356)
Mainframe Weight [lb (kg)]	31.5 (14.3)
Module Weight [lb (kg)]	3.5 (1.6)
Operating Temperature	0°C to 40°C (<70% relative humidity non-condensing)
Storage Temperature	-20°C to + 60°C (<90% relative humidity non-condensing)
Laser Safety Features	Laser enable keyswitch, interlock, output delay (meets CDRH US21 CFR 1040.10)
Isolation/Crosstalk	All modules electrically isolated with respect to each other and from earth ground

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Ordering Information

Model	Description	Option Code
8008 Series	Modular Mainframe Controller	
Model 8008 Dual LDD Modules		
8501.8D	Dual LDD Module (100 mA)	01
8505.8D	Dual LDD Module (500 mA)	02
8510.8D	Dual LDD Module (1000 mA)	03
Model 8008 Combination LDD/TEC Modules		
8601.8C	Combo LDD/TEC Module (100 mA)	06
8605.8C	Combo LDD/TEC Module (500 mA)	07
8610.8C	Combo LDD/TEC Module (1000 mA)	08
Accessories		
300-02[1]	Temperature Controller Cable	
300-04[1]	TEC/Mount Cable	
300-16	10.0 kΩ Thermistor (±0.2°C)	
500-02[1]	Laser Diode Driver Cable	
500-04[1]	LDD/Mount Cable	
8000-RACK	Rack Mount Kit	

1) Please see page 64 for cable diagrams.

Ordering Instructions

There are two simple ways to order Newport's Model 8008 Modular Controller.

I. When ordering your customized system configuration, specify the following Model number:

8008-OPT-□□-□□-□□-□□-□□-□□-□□-□□

Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6 Bay 7 Bay 8

Indicate the Option Code number for the specific module you would like us to install in any of the eight available bays. Please indicate NN, if you do not require a module in a particular bay.

8008-OPT-06-06-06-06-06-06-06-06

Model 8008 Modular Controller with Model 8601.8C, 100 mA, Combo LDD/TEC Module in each of the eight bays.

II. Any one of Newport's Model 8008 Modules can be ordered separately, in the event that you would like to upgrade your Modular Controller in the future. Please use only the Model number as shown in the table above, for ordering stand alone modules.

For the modular system that best meets your laser diode control needs, call Newport's Application Sales Engineers.



Model 8008 Rear Panel

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP