Precision Pulse Control
The PCX-7500-30 is an air-cooled, high power current source designed to drive laser diodes, bars, and arrays. The output current can be set from 10 A to 450 A, compliance voltage dependant on the model of system. The pulse width is adjustable between 4 µs to 5,000 µs, with a frequency of 8 Hz to 10,000 Hz.

Ease of Setup and Operation
The PCX-7500-30 may be operated through its intuitive front panel controls. The color QVGA LCD provides immediate visual confirmation of all operating parameters, including pulsed current set points, internal trigger pulse width, internal trigger frequency, and error/fault messages.

Complete System Integration
For automated applications, complete control of the instrument is provided through RS-232, USB and Ethernet computer interfaces. Up to four system configurations may be stored in internal non-volatile memory, providing instant recall of frequently-used configurations.

Low Inductance Output Cable
The laser diode is connected to the PCX-7500-30 through a low impedance strip line cable, designed to preserve the fidelity of high-speed current pulses. The output connector is interlocked, so that the PCX-7500-30 is disabled when the connector is removed.

Internal or External Triggering
Conveniently located front panel BNC connectors allow the PCX-7500-30 to be externally triggered and synchronized for specialized interconnected equipment applications. The input impedance of the trigger is selectable to either 50Ω or 10,000Ω. The synchronization output pulse is synchronized to the leading edge of the output current pulse and is active with internal or external triggers.

Ordering Information
PCX-7500-xxx See models on next page
TBD Output Strip Line Cable
TBD Laser Output PCBA

PCX-7500-73
450 A, 73V compliance, 8 Hz, 96 µs pulsewidth

PCX-7500-12
10 A, 12V compliance, 8 Hz, 96 µs pulsewidth
Pulse Amplitude
Output Current Range 10 A to 450 A
Setpoint Resolution 0.1 A
Setpoint Accuracy ±1 % of full scale current
Current Overshoot <2 %
Current Rise/Fall Time ≤ 7 µs
Polarity Positive
Compliance Voltage depends on model
Maximum Output Power up to 1000 W, depends on model

Internal Trigger
Frequency Range 8 Hz to 10,000 Hz
Frequency Resolution 1 Hz between 8 Hz to 299 Hz
100 Hz between 300 Hz to 10,000 Hz
Frequency Accuracy ± 1 %
Tijd(cc) (cycle to cycle jitter) ≤ 0.025 µs
Pulse Width Range 32 µs between 8 Hz to 30 Hz
8.0 µs between 31 Hz to 122 Hz
2.0 µs between 123 Hz to 500 Hz
0.5 µs between 501 Hz to 10,000 Hz
Pulse Width Resolution ≤ 0.5 µs

External Trigger
Frequency Range ≤ 10,000 Hz
Input Voltage Levels 0 V, output off
5 V, output on
Trigger Pulse Width 5µs to 5,000µs
Delay (external to output) ≤ 1µs (typical)
Termination Impedance 50 Ω or 10,000 Ω
Connector BNC

Output Connector
Output Connector DB37 pin Female
Pin 1 to 16 = Out +
Pin 20 to 35 = Out –
Pin 18 and 19 cable present loopback
All other pins not connected

Control Signals
Sync Termination 50 Ω
Sync Connector BNC
Current Monitor 0 to 0,800 mV
100 A output current = 170 mV (typical)
Current Monitor Termination 50 Ω
Current Monitor Connector BNC
Voltage Monitor 0 to 0,920 mV
50 V to output = 375 mV (typical)
Voltage Monitor Termination 1 MΩ
Voltage Monitor Connector BNC

Computer Interfaces
Supported Interfaces RS232, Ethernet, USB
USB Driver Support Windows 8, Windows 7, Windows XP, Linux, and Mac OS X

Power Specifications
Voltage Requirements 100 VAC to 120 VAC ± 10%
220 VAC to 240 VAC ± 10%
Line Frequency 50 Hz to 60 Hz
Power Requirements 1800 W
Connector Type IEC 320-C19

General
Size (H x W x D) 15 cm x 44 cm x 54 cm
Weight ~ 20 kg
Operating Temperature 15° C to 35° C
Cooling Air cooled

Available Models

<table>
<thead>
<tr>
<th>Model #</th>
<th>Compliance Voltage</th>
<th>Max Output Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCX-7500-5</td>
<td>0 V to 5 V</td>
<td>100 W</td>
</tr>
<tr>
<td>PCX-7500-12</td>
<td>5 V to 12 V</td>
<td>225 W</td>
</tr>
<tr>
<td>PCX-7500-17</td>
<td>12 V to 17 V</td>
<td>400 W</td>
</tr>
<tr>
<td>PCX-7500-24</td>
<td>17 V to 24 V</td>
<td>450 W</td>
</tr>
<tr>
<td>PCX-7500-30</td>
<td>24 V to 30 V</td>
<td>600 W</td>
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<tr>
<td>PCX-7500-38</td>
<td>30 V to 38 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-48</td>
<td>38 V to 48 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-54</td>
<td>48 V to 54 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-62</td>
<td>54 V to 62 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-66</td>
<td>62 V to 66 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-73</td>
<td>66 V to 73 V</td>
<td>700 W</td>
</tr>
<tr>
<td>PCX-7500-78</td>
<td>73 V to 78 V</td>
<td>750 W</td>
</tr>
<tr>
<td>PCX-7500-86</td>
<td>78 V to 86 V</td>
<td>800 W</td>
</tr>
<tr>
<td>PCX-7500-94</td>
<td>86 V to 94 V</td>
<td>900 W</td>
</tr>
<tr>
<td>PCX-7500-102</td>
<td>94 V to 102 V</td>
<td>950 W</td>
</tr>
<tr>
<td>PCX-7500-110</td>
<td>102 V to 110 V</td>
<td>1000 W</td>
</tr>
</tbody>
</table>

*1 Operation of an instrument outside of the listed compliance voltage and maximum power limits can cause permanent damage to the instrument and/or load. Please see SOA graphs in manual for more information.

Notes
Warranty—One year parts and labor on defects in materials and workmanship.
The PCX-7500-30 current source meets or exceeds these specifications.
All specifications are measured with a low inductance strip line interconnect cable to the laser diode, with less than 4 nH total inductance.
Specifications subject to change without notice.
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