CW Arc Lamp Drivers

The STCW series laser power supplies are made for CW lamp-pumped Nd:YAG lasers. The main circuit of the power supply is based on power electronic module IGBT, adopts PWM technique to yield conversion efficiency more than 90%, and outputs constant current with high accuracy and low current ripple. Ignition circuits which produce a high voltage pulse consists of three steps: series high voltage unit for igniting the lamp, LC unit to relay the power, and low –voltage-constant-current to continue the lamp current. Automatic igniting is achieved with igniting-detecting circuit. The successful ratio of one-time ignition is more than 99%. The high voltage rises smoothly, and its magnitude can be adjusted to meet the dispersible characteristics of the krypton lamps, and to reduce the spattering of the electrode material at the same time, and further to reduce the damage to the krypton lamp caused by high voltage triggering.

The soft-charging circuit and soft-starting circuit are provided to avoid the voltage spiking and in-rush current in the event of starting. Display shows the set current and operation current at different time. The function of “work/sleep” is designed to output normal current at working and low holding current at the time of stand by, so as to increase the efficiency of the power supply, lighten the heat exchanger system, and prolong the lifetime of the lamp as well. Conveniently turns switch to Run/Stop status, adjust output current, and show the working status through the inner/outer control selection.

Excellent design makes the power supply maintained easily and perfect design of circuit protects the device from over voltage, over current and over heat.

There are the following advantages of our products:

- High reliability
- Advanced design of the whole circuits system highly improves the electrical characteristics of the power supply.
- Anti-dust design
- Anti-vibration design
- Easy maintenance
- Malfunction indicators
- Strict testing and 48hour full-load testing in the factory
- Temperature test in -10°C~70°C to ensure that it works stably in the ambient temperature at 0°C~50°C.
- Test in relative humidity 90%.
- Measure the current ripple and test the stability of the output current accurately in factory to make sure the output current meet the requirements of the Kr lamp.
Part Number Description:

**STCWxyzT**

STCW – STCW series CW laser power supplies

X ---------- maximum output current (2 means 20A or 25A, 3 means 30A, 4 means 40A)

Y ---------- Maximum output voltage (4 means 400V, 2 means 200V)

Z --------- input electricity (A means 3-phase 380VAC, B means 1-phase 220VAC)

T ---------- others

<table>
<thead>
<tr>
<th>Model</th>
<th>STCW22A</th>
<th>STCW32A</th>
<th>STCW34A</th>
<th>STCW24A</th>
<th>STCW22B</th>
<th>STCW32B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max output current</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Max output voltage</td>
<td>200V</td>
<td>200V</td>
<td>400V</td>
<td>400V</td>
<td>200V</td>
<td>200V</td>
</tr>
<tr>
<td>Current ripple</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Control accuracy</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Simmer current</td>
<td>7A</td>
<td>7A</td>
<td>7A</td>
<td>7A</td>
<td>7A</td>
<td>7A</td>
</tr>
<tr>
<td>Switching frequency</td>
<td>20KHZ</td>
<td>20KHZ</td>
<td>20KHZ</td>
<td>20KHZ</td>
<td>20KHZ</td>
<td>20KHZ</td>
</tr>
<tr>
<td>Allowed input voltage tolerance</td>
<td>±15%</td>
<td>±15%</td>
<td>±15%</td>
<td>±15%</td>
<td>±15%</td>
<td>±15%</td>
</tr>
<tr>
<td>Environment temperature</td>
<td>0~50℃</td>
<td>0~50℃</td>
<td>0~50℃</td>
<td>0~50℃</td>
<td>0~50℃</td>
<td>0~50℃</td>
</tr>
<tr>
<td>Environment humidity</td>
<td>≤90%</td>
<td>≤90%</td>
<td>≤90%</td>
<td>≤90%</td>
<td>≤90%</td>
<td>≤90%</td>
</tr>
<tr>
<td>Input electricity</td>
<td>380V, 6KVA</td>
<td>380V, 9KVA</td>
<td>380V, 15KVA</td>
<td>380V, 11KVA</td>
<td>220V, 6KVA</td>
<td>220V, 9KVA</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>500x481x135</td>
<td>500x481x135</td>
<td>500x481x135</td>
<td>500x481x135</td>
<td>500x481x180</td>
<td>500x481x180</td>
</tr>
<tr>
<td>Weight</td>
<td>23.5kg</td>
<td>23.5kg</td>
<td>28kg</td>
<td>25kg</td>
<td>23.5kg</td>
<td>23.5kg</td>
</tr>
</tbody>
</table>

Remark: the power supply can be externally controlled.
STLDP series pulse laser power supplies are designed to drive xenon lamps in pulse Nd:YAG lasers. It is a constant-current switching power supply.

A pulse shape can be programmed and be divided into maximum 15 segments as shown in the figure. Each segment consists of a width (tn) and a current (An). The width and current can be individually and independently set. The capacitor is 16400uF, maximum output electrical pulse energy is 1200J and maximum output voltage is about 540V.

A power supply consists of two boxes: one control box and one capacitor box.

<table>
<thead>
<tr>
<th>Model</th>
<th>STLDP-1-10</th>
<th>STLDP-2-10</th>
<th>STLDP-3-08</th>
<th>STLDP-4-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max output average power (kW)</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Output current range (A)</td>
<td>100-600</td>
<td>100-600</td>
<td>100-600</td>
<td>100-600</td>
</tr>
<tr>
<td>Pulse width (ms)</td>
<td>0.1-10</td>
<td>0.1-20</td>
<td>0.1-10</td>
<td>0.1-20</td>
</tr>
<tr>
<td>Pulse repetition rate (Hz)</td>
<td>0.1-100</td>
<td>0.1-200</td>
<td>0.1-100</td>
<td>0.1-200</td>
</tr>
<tr>
<td>Electricity requirement</td>
<td>380VAC</td>
<td>380VAC</td>
<td>380VAC</td>
<td>380VAC</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>480x202x600</td>
<td>480x202x600</td>
<td>480x202x600</td>
<td>480x202x600</td>
</tr>
<tr>
<td>Net weight</td>
<td>Box I: 21kg;</td>
<td>Box II: 31kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross weight</td>
<td>72kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following power supplies are used to drive two lamps in series. They are suitable for the lasers with output laser powers above 200W. The power supply consists of three boxes: one control box and two capacitor boxes.

<table>
<thead>
<tr>
<th>Model</th>
<th>STLDP-1-10</th>
<th>STLDP-2-10</th>
<th>STLDP-3-08</th>
<th>STLDP-4-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max output average power (kW)</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Output current range (A)</td>
<td>100-600</td>
<td>100-600</td>
<td>100-600</td>
<td>100-600</td>
</tr>
<tr>
<td>Pulse width (ms)</td>
<td>0.1-10</td>
<td>0.1-20</td>
<td>0.1-10</td>
<td>0.1-20</td>
</tr>
<tr>
<td>Pulse repetition rate (Hz)</td>
<td>0.1-100</td>
<td>0.1-200</td>
<td>0.1-100</td>
<td>0.1-200</td>
</tr>
<tr>
<td>Electricity requirement</td>
<td>380VAC</td>
<td>380VAC</td>
<td>380VAC</td>
<td>380VAC</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>480x202x800</td>
<td>480x202x800</td>
<td>480x202x800</td>
<td>480x202x800</td>
</tr>
<tr>
<td>Net weight</td>
<td>Box I: 21kg;</td>
<td>Box II &amp; Box III: 31kg each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross weight</td>
<td>115kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The control panel may be fixed with the control box (as shown above) or is separated from the control box but is connected via the cables (as shown as follows). Please show your selection of the panel when placing a purchase order.

The following power supplies are specially designed for pulsed Nd:YAG lasers, which are suitable to laser cutting.

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Voltage</th>
<th>Output Power</th>
<th>Max. Output Voltage</th>
<th>Pulse Width</th>
<th>Frequency</th>
<th>Dimension(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STLDP-C08</td>
<td>3Φ380VAC</td>
<td>8KW</td>
<td>400V</td>
<td>0.05-1ms</td>
<td>1-1000Hz</td>
<td>Single/dual box</td>
</tr>
<tr>
<td>STLDP-C10</td>
<td>3Φ380VAC</td>
<td>10KW</td>
<td>400V</td>
<td>0.05-1ms</td>
<td>1-1000Hz</td>
<td>430x600x200</td>
</tr>
<tr>
<td>STLDP-C12</td>
<td>3Φ380VAC</td>
<td>12KW</td>
<td>600V</td>
<td>0.05-1ms</td>
<td>1-500Hz</td>
<td>438x470x183, 2pcs</td>
</tr>
<tr>
<td>STLDP-C14</td>
<td>3Φ380VAC</td>
<td>14KW</td>
<td>800V</td>
<td>0.05-1ms</td>
<td>1-400Hz</td>
<td>Dual/triple box</td>
</tr>
<tr>
<td>STLDP-C16</td>
<td>3Φ380VAC</td>
<td>16KW</td>
<td>400V</td>
<td>0.05-1ms</td>
<td>1-300Hz</td>
<td>430x450x180, 2pcs</td>
</tr>
</tbody>
</table>
Pulsed Flashlamp Power Supply (STLDF Series)

STLDF series flashlamp-pumped laser power supplies are designed to drive solid state-state lasers and EO Q-switches. Power supplies are complete pumping solutions and include all required modules - bank of storage capacitors, charging module and discharging circuit with triggering and simmer modules.

Power supplies are performed accordingly to 19-inch specification. Height is 4U. Embedded touchscreen controlled computer allows changing of all principal parameters such as output voltage, flashlamp pulse duration and pulse repetition rate.

**Description of Part Number: STLDF-xx-yyyy**

- **STLDF**: STLDF series drivers
- **xx**: max output power. 17 means 1.75kW; 35 means 3.5kW
- **yyy**: Pockels cell driver. QBD or QBU.

For example, STLDF-35-QBD: 30.5kW output power with an EO Q-switch driver QBD.

**Input:**
- Voltage: 230VAC *

**Output:**
- Max. voltage: up to 1000 V *
- Max. output power: up to 3.5 kW *
- Pulse width: 0.1-20 ms *
- Repetition rate: up to 200 Hz *

**Simmer supply:**
- Simmer current: up to 800 mA
- Triggering voltage: 1000 V
- Triggering pulse width: 1us
- Triggering pulse energy: 110 mJ
- Restrike rate: approx. 30 Hz
- Capacitor bank: 28000 uF *
- Efficiency: 85-90%
- Protection: overvoltage, overheating, flashlamp breakdown, interlock

**Environment:**
- Operation Temperature: 0…+40 C
- Humidity: 90%, non-condensing
- Size (LxWxH): 500 x 315 x 172 mm
- Weight: 10 kg

* -other values are available on request

By default the laser power supply is supplied in serial triggering and partial discharge modification. Modifications for external triggering or complete discharge are available on request. Also the laser power supply can be equipped with Pockels cell driver (Q-switch driver). In this case user obtains a possibility to control output voltage level and delay between flashlamp pulse start and Q-switch pulse (pulses). This ability is significant for adjusting user system for best performance. Synchro pulse delay is regulated in 0-300us range after beginning of flashlamp pulse. Other values are available on request.

**Options**

Three standard output power levels are available:
- 1.75kW, PFC > 0.85
- 3.5kW, PFC > 0.85
- 2 kW, PFC > 0.98

A variety of output voltages, longer pulse duration, complete discharge, parallel or serial triggering,
embedded or external Pockels cell driver are available on request.

## Compact STLD Power Supply: STLD-17-2U

![Compact STLD Power Supply](image)

### Input:
- Voltage: 230 VAC (other on request)

### Output:
- Max. output voltage: 450 V (up to 2000 V on request)
- Max. output power: 1.75 kW (other on request)
- Pulse width: 0.1-20 ms (other on request)
- Repetition rate: 1-200 Hz (other on request)
- Efficiency: 85-90%

### Protection
- Overvoltage, overheating, flashlamp breakdown, interlock etc

### Cooling
- Forced air (built-in fans)

### Simmer supply
- SCA-2008 (other on request)

### Capacitor bank
- 14000 uF (other on request)

### Environment:
- Operation temperature: 0 ... +40 °C
- Storage temperature: -20 ... +80 °C
- Humidity: 90%, non-condensing

### Size (LxWxH)
- 500x315x86 mm

### Weight
- 6 kg

### Options
- By default laser power supply is supplied in serial triggering and partial discharge modification.
- Modifications for external triggering or complete discharge are available on request.
- Also on request the laser power supply can be equipped with Pockels cell driver.
### IPL Power Supply

<table>
<thead>
<tr>
<th>Model</th>
<th>Input</th>
<th>Output power</th>
<th>No. of driven lamps</th>
<th>Max. output voltage</th>
<th>Display</th>
<th>Weight</th>
<th>Dimension (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST-IPL-03-1</td>
<td>220VAC</td>
<td>300W</td>
<td>1</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>3kg</td>
<td>16x18x14</td>
</tr>
<tr>
<td>ST-IPL-04-1</td>
<td>220VAC</td>
<td>400W</td>
<td>1</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>3kg</td>
<td>16x18x14</td>
</tr>
<tr>
<td>ST-IPL-10-1-A</td>
<td>220VAC</td>
<td>1000W</td>
<td>1</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>5kg</td>
<td>20x27x14</td>
</tr>
<tr>
<td>ST-IPL-10-1-B</td>
<td>220VAC</td>
<td>1000W</td>
<td>1</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>5.2kg</td>
<td>19x24x14</td>
</tr>
<tr>
<td>ST-IPL-08-2</td>
<td>220VAC</td>
<td>800W</td>
<td>2</td>
<td>400V</td>
<td>240x128 LCD</td>
<td>5.7kg</td>
<td>20x30x14</td>
</tr>
<tr>
<td>ST-IPL-10-2</td>
<td>220VAC</td>
<td>1000W</td>
<td>2</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>5.7kg</td>
<td>20x30x14</td>
</tr>
<tr>
<td>ST-IPL-10-2-1</td>
<td>220VAC</td>
<td>1000W</td>
<td>2</td>
<td>360V</td>
<td>colour touch screen</td>
<td>6kg</td>
<td>25x30x14</td>
</tr>
<tr>
<td>ST-IPL-10-3</td>
<td>220VAC</td>
<td>1000W</td>
<td>3</td>
<td>360V</td>
<td>240x128 LCD</td>
<td>8kg</td>
<td>38x31x14</td>
</tr>
</tbody>
</table>

**Description of Model:**  : ST- IPL-XX-YY-Z  
ST- IPL XX YY Z  
Model  IPL driver  Output power, Number of driven lamp  Others  
unit=100W

**Remark:** When multi-lamp is driven, the lamps are not simultaneously driven. If all lamps are simultaneously driven, the total output power will be summed by all lamps.

**Typical Specifications Setting of ST-IPL-10-2-1:**

![Typical Specifications Setting](image)

Fluence: setting of pulse energy, range 05 to 35, corresponding to output voltages 130 to 360V.  
Pulsewidth: setting of pulse width, range 05 to 35ms.  
Number of pulses: setting of pulse number, range 01-07.  
Interval between pulses: spacing of neighbour pulses.  
Pulse counter: counting the pulse number.
Single-lamp Power Supply

190x240x140mm

Dual-lamp Power Supply

240x300x140mm

200x300x140mm

| 240x360x170mm |
3-lamp Power Supply

Treatment handles without the cover
Illumination area: 8x40mm
Dimension: LxHxW: 135x75x32, the water nozzle is included. The dimension is for the use of a lamp STX7x61x125 (external diameter 7mm, arc length 61mm, overall length 125mm).

Model ILP-TH-520-1200; high transmission from 520 to 1200nm.
Model: ILP-TH-560-1200; high transmission from 560 to 1200nm.
Model: ILP-TH-640-1200; high transmission from 600 to 1200nm.

Remark: when you order treatment handles, please tell us the dimension of the lamp to be used. It is better to give us its drawing for our design.