Definitions of the following Symbols and Words should be understood before working with this manual and/or the equipment with this manual.

The definitions are:

"Caution" - indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

"Warning" - Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

"Danger" - Indicates an eminently hazardous situation which, if not avoided, will result in death or serious injury.
OAI Constant Intensity Controller
For 200W, 350W & 500W NUV Lamps

TABLE OF CONTENTS

SAFETY PRECAUTIONS 2
DESCRIPTION 4
PANEL DESCRIPTION 4
SPECIFICATIONS 6
OPERATING INFORMATION 7
OPERATING TEMPERATURE 8
OPERATING PROCEDURE 9
REGULATORY SECTION 11

DRAWINGS 14
DWG# 2105-040 (VOLTAGE SELECT 2105 C2 NUV)
DWG# 2105-020 (TOP SCHEMATIC 2105 C2 NUV)
DWG# 2105-042 (POWER SELECT 2105 C2 NUV)
SAFETY PRECAUTIONS

There is a major hazard to personnel:

- Electrical shock

Hazards Due to AC Line Voltage.

The unit uses AC line voltage to provide it’s working power. This voltage is present inside the cover. Only qualified persons should remove the cover. Care should be taken not to touch any wiring inside the cover that is attached to the AC line, switch, or AC fuse.

WARNING! While working inside of the UV Power Supply, having the circuit breaker in the off position does not affect the line filter nor the input side of the circuit breaker; it will continue to have live AC voltage on it.
<table>
<thead>
<tr>
<th>部件名称</th>
<th>有毒有害物质和元素</th>
</tr>
</thead>
<tbody>
<tr>
<td>转换器印刷线路组合</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>Converter PCA</td>
<td>X</td>
</tr>
<tr>
<td>通用印刷线路组合</td>
<td>X</td>
</tr>
<tr>
<td>Universal PCA</td>
<td>X</td>
</tr>
<tr>
<td>外壳组合</td>
<td>X</td>
</tr>
</tbody>
</table>

**Part Name**

<table>
<thead>
<tr>
<th>Toxic or Hazardous Substances and Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>铅 (Pb)</td>
</tr>
</tbody>
</table>

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006规定的限量要求。

紫外线控制器的电源线包括在外壳组合的声名中。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T 11363-2006.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement is SJ/T11363-2006.

The power cord for the UV controller is included in the chassis assembly declaration.
**DESCRIPTION**

The OAI Constant Intensity Controller is a solid state line and load regulated power supply, designed to operate gas discharge short arc lamps. The unit employs an optical feedback to maintain constant intensity control within bounds of the specified wattage range.

The power of the lamp is limited to approximately 325W for 200W units, 425W for 350W units and 625W for 500W units. When the limiting power is achieved an audible alarm will sound. This lets the operator know, when in Constant Intensity mode, that the lamp wattage cannot go any higher and therefore the “asked for” intensity (as defined by the intensity set control) is not being achieved.

**PANEL DESCRIPTION**

*ALSO SEE FOLLOWING DRAWING*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>POWER SWITCH</strong></td>
<td>Turns power supply on and off.</td>
</tr>
<tr>
<td>2. <strong>POWER LED</strong></td>
<td>Lights on, indicating power is on.</td>
</tr>
<tr>
<td>3. <strong>START SWITCH</strong></td>
<td>Momentary contact. Provides the high voltage to start the lamp.</td>
</tr>
<tr>
<td>4. <strong>POWER/INTENSITY METER</strong></td>
<td>Reads either power in watts or intensity in mW/cm^2.</td>
</tr>
<tr>
<td>5. <strong>POWER/INTENSITY SELECT SWITCH</strong></td>
<td>Reads power when moved to the right or intensity to the left.</td>
</tr>
<tr>
<td>6. <strong>CURRENT/VOLTAGE METER</strong></td>
<td>Reads either current in Amps or voltage in volts.</td>
</tr>
<tr>
<td>7. <strong>CURRENT/VOLTAGE SELECT SWITCH</strong></td>
<td>Reads voltage when moved to the left or current when moved to the right.</td>
</tr>
<tr>
<td>8. <strong>CHANNEL SELECT SWITCH</strong></td>
<td>Allows selection between the 2 feedback probes (channel A is always the lower wavelength). Provides feedback to power supply in CI mode.</td>
</tr>
</tbody>
</table>
9. CHANNEL A-CAL KNOB  A 10 turn control knob that calibrates the intensity meter of the power supply to your meter for the lower wavelength feedback probe. **Must be in CP mode when performing Calibration.**

10. CHANNEL A-SET KNOB  A 10 turn control knob that sets desired intensity for the lower wavelength feedback probe. **Must be in CI mode for this feature to work.**

11. CHANNEL B-CAL KNOB  Same function as Channel A Cal knob except for the higher wavelength feedback probe.

12. CHANNEL B-SET KNOB  Same function as Channel A Set knob except for the higher wavelength feedback probe.

13. MODE SELECT SWITCH  (CP/CI MODE)  Switches operating mode from CP (Constant Power) to CI (Constant Intensity) and vice-versa.

14. POWER SET KNOB  A 10 turn knob that sets the power level in Watts for CP (Constant Power) mode.

15. HOUR METER  Displays number of hours the unit had been on.
## SPECIFICATIONS

### MECHANICAL

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>18.0 in.</td>
</tr>
<tr>
<td>Width</td>
<td>10.3 in.</td>
</tr>
<tr>
<td>Height</td>
<td>6.5 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>27 lbs.</td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>120 or 230 VAC, 1Phase, See Fig. 1</td>
</tr>
<tr>
<td>Line Frequency</td>
<td>50-60 Hz</td>
</tr>
<tr>
<td>Power Regulation</td>
<td>2%</td>
</tr>
<tr>
<td>Open Ckt. Voltage</td>
<td>340 VDC max.</td>
</tr>
<tr>
<td>Max Lamp Current</td>
<td>12.5 amps</td>
</tr>
</tbody>
</table>

### INTERFACE

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamp Connectors</td>
<td>Amp 862435-3</td>
</tr>
<tr>
<td>Sensor Control</td>
<td>Switchcraft A3F</td>
</tr>
<tr>
<td>Status Connector</td>
<td>Amphenol 91-PC4F</td>
</tr>
<tr>
<td>Interlock &amp; Remote Start</td>
<td>Cinch Jones 4 pin P404-AB</td>
</tr>
<tr>
<td>120 VAC Fan Output</td>
<td>Cinch Jones 3 pin P303-AB</td>
</tr>
</tbody>
</table>
AC POWER:
This Constant Intensity Controller is intended to operate from a three wire, earth referenced single-phase power source.

The safety earth terminal of the line plug is connected directly to the chassis of the power supply. For safety, always use a source that provides an earth ground connection.

WARNING- Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

CAUTION- No operator-serviceable parts inside unit.

UV POWER SUPPLY INTERLOCKS:

The UV POWER SUPPLY Personal Safety interlock removes power from the UV power supply when the cover is removed from the UV POWER SUPPLY. The cover should only be removed by qualified maintenance persons.
OPERATING TEMPERATURE

This unit can be operated where the ambient air temperature is between 10 to 35 degrees C. The unit is cooled by air being drawn in and exhausted through the side panels. Adequate clearance should be provided to allow unrestricted airflow. Blocking or restricting the airflow may result in damage to the unit.

With normal temperature operating conditions, the lamp will achieve full power in approximately five minutes with voltage and current parameters approximating those specified by the lamp manufacturer. **With over-cooling conditions**, the mercury in the lamp may not completely vaporize and the lamp will not come up to full power and proper intensity. If a voltage reading is not within a few volts of that specified, check to see that the cooling associated with the lamp housing is working according to specifications. **Over-cooling of the lamp will result in severely reduced lamp life.**

--------The following lamp criteria must always be followed.--------

1) Always operate the lamp in a vertical position and the appropriate electrode (anode or cathode) in the up position as specified by the lamp manufacturer.

2) Always operate the lamp with the positive lead connected to the anode terminal.

3) The anode and cathode terminals of the lamp must always be isolated from ground and any other conductive parts or materials. The cathode should be isolated for a minimum of 600 volts and the anode should be isolated for a minimum of 5,000 volts.
OPERATING PROCEDURE

When the operator is assured that the power supply is properly installed, the correct lamp is in place with a heatsink and the High Voltage lead connected, the unit can be set up with the following step-by-step procedure:

INITIAL FRONT SETTINGS:

POWER SWITCH OFF
INTENSITY/POWER METER SELECT SWITCH POWER
CURRENT/VOLT METER SELECT SWITCH VOLTS
MODE CONTROL SELECT SWITCH CP (CONSTANT POWER)
ALL KNOBS AT THE MIDDLE
CHANNEL SELECT SWITCH DESIRED WAVELENGTH (CHANNEL A LOWER WAVELENGTH)

1) Turn power switch to ON position. The Voltmeter should indicate full scale pass 100volts. Switch voltage/current switch to current. The meter should go back to zero.

2) Depress Start switch momentarily, releasing when the lamp ignites. Within 10 mins, power meter should read between 180-325W for 200W, 275-425 for 350W and 350-625W for 500W. Adjust Power knob to 200 for 200W, 350 for 350W and 500 for 500W. Before starting the UV lamp make sure all electrical components are powered down. Surge from Constant Intensity controller upon start up may damage electrical components.

3) Switch voltage/current switch back to voltage. At the RATED WATTAGE monitor the operating voltage of the lamp is to match the rated lamp voltage written on the lamp casing. Adjust AIRFLOW damper to achieved rated voltage. The lamp should operate +/- 2 volts of the rated voltage. Your lamp is being overcooled, if your voltage is lower than the rated voltage of the lamp.

4) With the aid of the power knob, adjust the lamp wattage to idle wattage. For 200W system idle at 180 watts, for 350W system idle at 275W and for 500W system idle at 450W.
5) Peak the lamp. **(LAMP PEAKING NEEDS TO BE DONE ONLY IN CP MODE)**

6) Set INTENSITY– POWER switch to intensity and open shutter.

7) Turn UV meter ON and place probe with appropriate wavelength at the center of the exposure plane. Adjust CAL Knob of CHANNEL A so that both intensity readings from constant intensity controller and UV meter are approximately the same.

8) Set mode switch to CI (CONSTANT INTENSITY).

9) Adjust SET knob for Channel A clockwise then counterclockwise. Check to see if the intensity reading on the power supply is tracking the intensity on the UV meter. For example, when you move the SET knob to go to a higher intensity, the UV meter should also go to a higher intensity approximately equal to the intensity reading indicated in the power supply and vice versa.

10) Switch to Channel B and repeat steps 7 - 9. Perform calibration using the CAL and SET knobs for Channel B.

11) Adjust the intensity set control for the appropriate channel on the power supply to the desired intensity.

This completes the setup procedure. The unit is now ready for production exposures.

After the initial setup is accomplished, it is not necessary to go through the setup procedure each time the lightsource is turned on. Simply turn on the power supply with the system shutter closed and the unit will be ready to operate in approximately 10 minutes.

In the Event of Malfunction Check the following:

1. **AC power Connection and proper line voltage.**
2. **Lamp Exhaust.**
3. **Interface.**
4. **Lamp Connections.**
5. **Full lamp cool down before attempting restarts.**
6. **Proper sensor installation.**
Manufacturer’s Name: Radiation Power Systems, Inc.

Manufacturer’s Address: 2261 Fortune Drive, Suite D
San Jose, California 95131

Declares that the product
Product Names: Illumination Controller

Model Numbers: 2105C2

Product Options: All

Conforms to the following Product Specifications
EN 60204-1: 1993
EN 61010-1: 1993

EN 55011: (Class A) 15 Sept 1998
EN50082-1-3: IEC 801-3: 1988 / prEN55024-3: 1991 3 V/M, 26 – 1000 MHz
EN50082-1-4: IEC 801-4: 1988 / prEN55024-4: 1992 0.5 kV Signal Lines,
1.0 kV AC Power Lines
IEC 1000-3-2:1995 / EN 61000-3-2:1995
IEC 1000-3-3:1994 / EN 61000-3-3:1995
FCC Title 47 CFR, part 15 Class A3) / ICES-003, Issue 2 / VCCI-21)

Supplementary Information
The product herewith complies with the requirements of the following Directives and exhibits the CE mark accordingly:
· the EMC Directive (89/336/EEC)
· the Low Voltage Directive (73/23/EEC)

1.0 The product was tested in a typical configuration with a maximum normal resistive load.
2.0 This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

11 April 2001
For Compliance Information ONLY, contact:

USA Contact: Radiation Power Systems, Inc., Office of the Quality Manager, 2261 Fortune Drive, Suite D, San Jose, California 95131, USA.

Evaluation Laboratory: Pulver Laboratories Inc., Office of the President, 320 North Santa Cruz Avenue, Los Gatos, California 95030 USA, http://www.PulverLabs.com/

Attached is the Certificate of Conformance from Pulver Laboratories Inc. Copies of the complete Technical Reference Files can be ordered from:

Pulver Laboratories Inc.
320 North Santa Cruz Avenue
Los Gatos, California 95030-7243
www.PulverLabs.com
Voice: 408.399.7000
Fax: 408.399.7001
E-mail: support@PulverLabs.com

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences due Règlement sur le matériel brouilleur du Canada.
INFORMATION FOR THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The user may find the following publication prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems" (Stock Number 004-000-00345-4).


FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance to Part 15 of the FCC Rules could void the user's authority to operate the equipment.