

## RAYVEN UV CURING OVEN INSTRUCTIONS

### **1.1 Purpose of Manual**

The purpose of this manual is to provide installation and operation instructions for the Uvitron International Rayven UV curing oven. It is important the manual be read carefully before any attempt is made to install and operate the equipment. Note that this manual contains instructions specifically related to the Rayven chamber only. For operation and safety information relating to the associated Uvitron flood light curing system, refer to the instruction manual shipped with the related IntelliRay or SunRay lamp system.



### **1.2 Purpose of Equipment**

The Rayven UV curing oven is a fully enclosed chamber that is intended to be used in conjunction with Uvitron IntelliRay and SunRay UV flood lamp heads. The Rayven is a bench top unit, designed to provide protective shielding and positioning of parts during rapid light curing of photo-initiated adhesives and coatings. The unit is suitable for laboratory use or volume industrial production applications.

Fig. 1: Rayven UV Oven

### **1.3 Unpacking**

Visually inspect the shipping carton for physical damage. Damaged shipping cartons should be reported to the carrier. Carefully open the carton and remove the equipment, being careful not to lose or damage any separately packed parts.

Check all parts against the parts list. Any damaged or missing parts should be reported to the carrier and to your UVITRON representative.

All packing material and the shipping carton should be saved in case the unit has to be returned at some future time.

### **1.4 List of Included Parts**

1. One Rayven UV curing oven (UV1080).
2. One adjustable height shelf (UV2568).
3. One male to female 15 position DSUB interconnect cable (UV1196).
4. One Rayven UV curing oven instruction sheet (UV1434).
5. One (optional) IntelliRay shutter control foot pedal (UV0725).

## 2.1 Installation

The Rayven UV curing oven and the associated IntelliRay or SunRay lamp head may be placed on any bench or shelf that has access to a 120/240V 50/60-cycle single-phase power source in a clean operation area. Since Uvitron flood lamps are air-cooled systems, dust or airborne particles can clog the internal cooling passages and cause overheating. Allow a 6 inch clearance on all sides for unrestricted airflow and for rear panel cabling.

## 2.2 Mounting

The lamp head can be easily mounted to the Rayven. Simply hold the head by the carrying handle, and lower its bottom face into the top opening of the curing chamber. The Rayven's top opening is specifically sized to conform to the outside edges of the IntelliRay or SunRay head, and no tools or fasteners are required for positioning or locking.

**WARNING:** The IntelliRay or SunRay Lamp Head should always be mounted on the Rayven oven and held away from any flammable or heat sensitive materials. Never place the lamp housing assembly directly on the work surface with the lamp operating, or before the unit has cooled back to room temperature.

Uvitron flood lamps are also designed to be stand mounted using the optional UV0454 Flood Stand. The unit's rear mounted clamping bracket allows the lamp's height to be slide adjusted when used with this flood stand. When using the flood lamp heads with the Rayven, the clamping bracket is not required and may be removed. This can be accomplished by removing the four 8-32 Phillips head screws from the mounting bracket (see fig. 3). After the bracket is removed, the screws may be reinserted into the mounting holes to prevent them from being misplaced.



Fig. 2: IntelliRay mounted on Rayven Oven

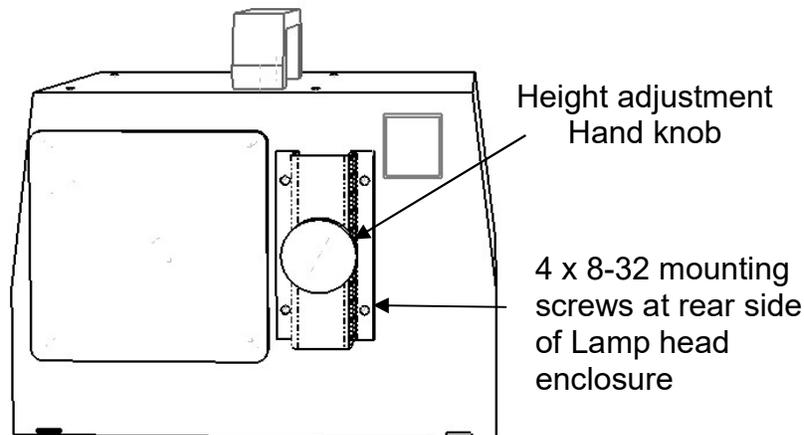


Fig. 3: removing lamp stand mounting bracket

### **2.3 Connecting Cabling and Accessories**

The Rayven is shipped with a male to female 15 position DSUB interconnect cable (UV1196), that interfaces the IntelliRay shutter interlock and accessory control signals to the oven.

**WARNING:** In order for the IntelliRay to detect door opening and subsequently close its shutter to shield the operator, the Interconnect cable must be connected as described below, and the safety interlock must be enabled as described in section 2.4.

To install the cable, connect the male end to the IntelliRay rear panel signal connector, and the female end to the top connector on the Rayven rear panel (see fig. 4). To insure that the cable connectors remain properly secured during operation, tighten the two slotted 4-40 machine screws on each connector using a small flat blade screwdriver.

**NOTE:** Because the SunRay flood lamp head does not include an exposure shutter, the DSUB interconnect cable is not required when the Rayven oven is used with a SunRay.

The Rayven's 2<sup>nd</sup> (lower) DSUB connector is intended for interface to control signals of a customer supplied PC, programmable controller, remote switches or optional accessories. For example, with the IntelliRay connected to the Rayven (allowing the shutter to close when the oven's door is opened), the 2<sup>nd</sup> connector can be attached to an optional foot pedal for hands-free control of the IntelliRay shutter.

For additional information regarding IntelliRay remote control and DSUB connector signal descriptions, refer to External Interface in section 7 of the IntelliRay Instruction Manual. For additional information regarding power cord connection and flood lamp head operation, refer to sections 5 and 6 of the IntelliRay or SunRay manual.

### **2.4 Enabling the Rayven Door Safety Interlock Signal**

The Rayven oven includes a safety interlock feature that automatically forces the IntelliRay shutter to close whenever the curing chamber door is opened. The electrical signal that controls this interlock is carried from the oven to the IntelliRay by the wiring of the DSUB interconnect cable. In order for the IntelliRay to react to the interlock switch signal of the oven door, this feature must first be enabled in the IntelliRay Setup menu. By default, IntelliRay systems shipped with a Rayven oven will have this feature enabled at the factory. However, if the units were purchased separately (or if the door interlock is not activating), then the operator should verify that this feature is enabled in the IntelliRay Setup menu. Refer to sections 6.5 and 6.6 of the IntelliRay manual for instructions on enabling the safety interlock.



Fig. 4: Connecting DSUB cable between Rayven and IntelliRay

## **2.5 Shelf Installation**

The Rayven oven includes an adjustable height shelf for optimizing part position during curing. For fastest curing, the shelf height should be set such that the top of the part to be cured is approximately 1 to 3 inches from the bottom face of the UV flood lamp head.

To install the shelf, slide it into the unit along the appropriate height side wall positioning ribs such that the short shelf handle flange is oriented facing downward at the door opening when fully inserted into the curing chamber (see Fig. 5). For a list of possible curing heights, refer to the specifications table below.

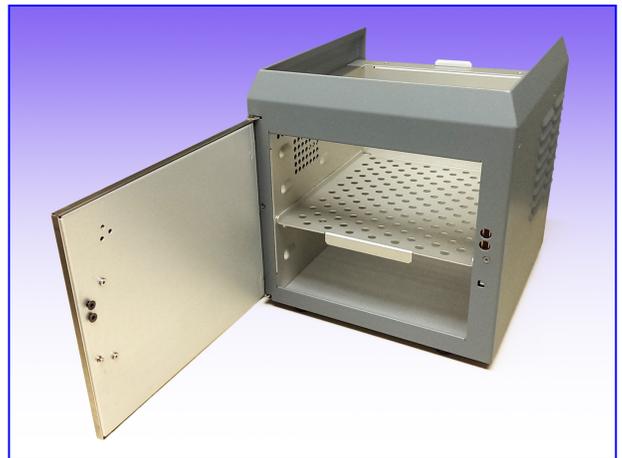


Fig. 5: Rayven curing shelf

## **2.6 Shielding**

The Rayven oven is designed to provide the full UV light shielding required for protection of the system operator (refer to Safety Considerations in section 3.1 of the UV flood lamp manual). When the oven is being used in conjunction with an IntelliRay shuttered flood lamp with the interlock enabled (see section 2.4 above), the shutter will close to shield the operator any time the curing chamber door is opened. When the door is closed during curing, the Rayven enclosure will block the UV light from scattering into the work area.

**WARNING:** If the Rayven oven is to be used with an un-shuttered SunRay flood lamp, UV protective glasses and skin protection (e.g. cotton gloves and shirt sleeves) are required to be worn by the operator during loading and unloading of parts in the curing chamber, or any time the oven door is opened. To prevent risk of eye or skin burn, all personnel must be protected from direct or indirect exposure to the UV light produced by the UV flood lamp curing system. Additionally, UV protective glasses and protective clothing should be used at all times while working in the vicinity of unshielded UV light.

Note that when light exposure is in progress, the three light pipes in the upper right corner of the door will glow to indicate that the lamp is on and illuminating the Rayven curing chamber.

## **3.0 Cleaning of the Rayven**

The outside shell of the Rayven oven is finished with a durable powder coated finish. The curing chamber side walls, inside floor, rear panel, and parts tray are anodized aluminum. All these surfaces can be cleaned with a soft clean cloth, wetted with Simple Green or a non-solvent based mild cleaning solution. The door of the curing chamber is made from stainless steel, and can be cleaned in the same manner. However, for maximum shine of this surface, a commercial or industrial grade stainless steel cleaner-polish is recommended.

**4.0 Specifications**

Category	Parameter	Value	Conditions/Notes
<b>General</b>	Model	RAYVEN Curing Oven	
	Part Number	UV1080	
	Cooling	Forced air w/ louvers	Channeled from lamp head
	Interconnect Cable	Dual 15 position DSUB	Male/Female, 1.25 ft. length
<b>Dimensions</b>			
H x W x D (inches)	Inside	9" x 9" x 10.25"	w/ adjustable shelf
	Outside	11.5" x 11.5" x 12"	D= 13.25 w/ door handle
	Tray	1" x 9" x 10"	
	Weight (lbs.)	9 Pounds	Without lamp head & cable
<b>Cure Distance</b> (inches)	Shelf Positions	1.75", 3.5", 5.25", 7"	Bottom of lamp to shelf
	Distance to floor	9"	Bottom of lamp to floor

**Support**

If any further assistance is required, contact Uvitron Customer support at the number shown below, and a representative will be glad to assist you.

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