

# OmniCure® SC0650

## UV Curing Solutions

Applicable for the following System Controller model:

Model	Part Numbers
SCo650	019-00195R

## Installation/Reference Guide

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# OmniCure® SC0650

UV Curing Solutions

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## Installation/Reference Guide

035-00541R

Excelitas Canada Inc. 2014

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## Revision History

Revision #	Comments
Rev 1.0	Initial release
Rev 2.0	Minor formatting revisions, regulatory section corrected

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## 1 Introduction

The OmniCure® SC0650 System Controller is designed to be used specifically with OmniCure® AC-Series UV LED systems. Designed as a stand-alone unit, this System Controller provides a compact solution for powering AC-series products. Operating over a universal input AC voltage range from a standard receptacle allows easy and quick installation without the need for dedicated electrical resources. The rear-mounted, fused on/off switch provides electrical fault protection and isolation while the front-mounted DC power connector and power indicator provides users with a simple, easy-to-access means of powering AC-series products and assessing power status on a day-to-day basis. An integrated, serviceable air filter allows the SC0650 to be collocated with the UV head where a separate filtered-air power cabinet is unavailable.

OmniCure® has combined next generation optical engineering, state-of-the art electronics and fibre-optics to produce sophisticated technologies that employ light. Today, Excelitas Technologies is a leading developer of light-based systems for sectors ranging from manufacturing to bio-medicine, and is unmatched in commitment to quality and service.

This manual covers the following models:

SC0650      019-00195R

Excelitas Technologies recommends reading this guide to discover all features of the OmniCure® SC0650 System Controller, and how to use it.

## **2 Safety Precautions/ User Warnings**

### **2.1 Glossary of Symbols:**



Caution risk of danger – consult accompanying documents.



Protective Conductor Terminal



Earth (Ground) Terminal



CAUTION, Risk of Electrical Shock

## 3 Getting Started

### 3.1 Packaging Contents

The package contains:

- The SC0650 System Controller (019-00195R)
- AC power cable, selected for mains power receptacles in the destination country
- Documentation CD
- Depending on the exact order, this package may also contain a DC power cable, PLC controller and AC-series UV LED head.

Carefully remove the contents and store the packaging materials for future use.

In addition to the System Controller enclosed, a functional UV curing setup will require:

- At least 1 DC power cable (for example, 018-00559R – 5m power cable)
- At least 1 AC-series UV LED Head.

*Before installation, ensure that the total DC electrical load does not exceed approximately 85% of the rating of the SC-series unit to be installed.*

### 3.2 System Controller Unit and Dimensions

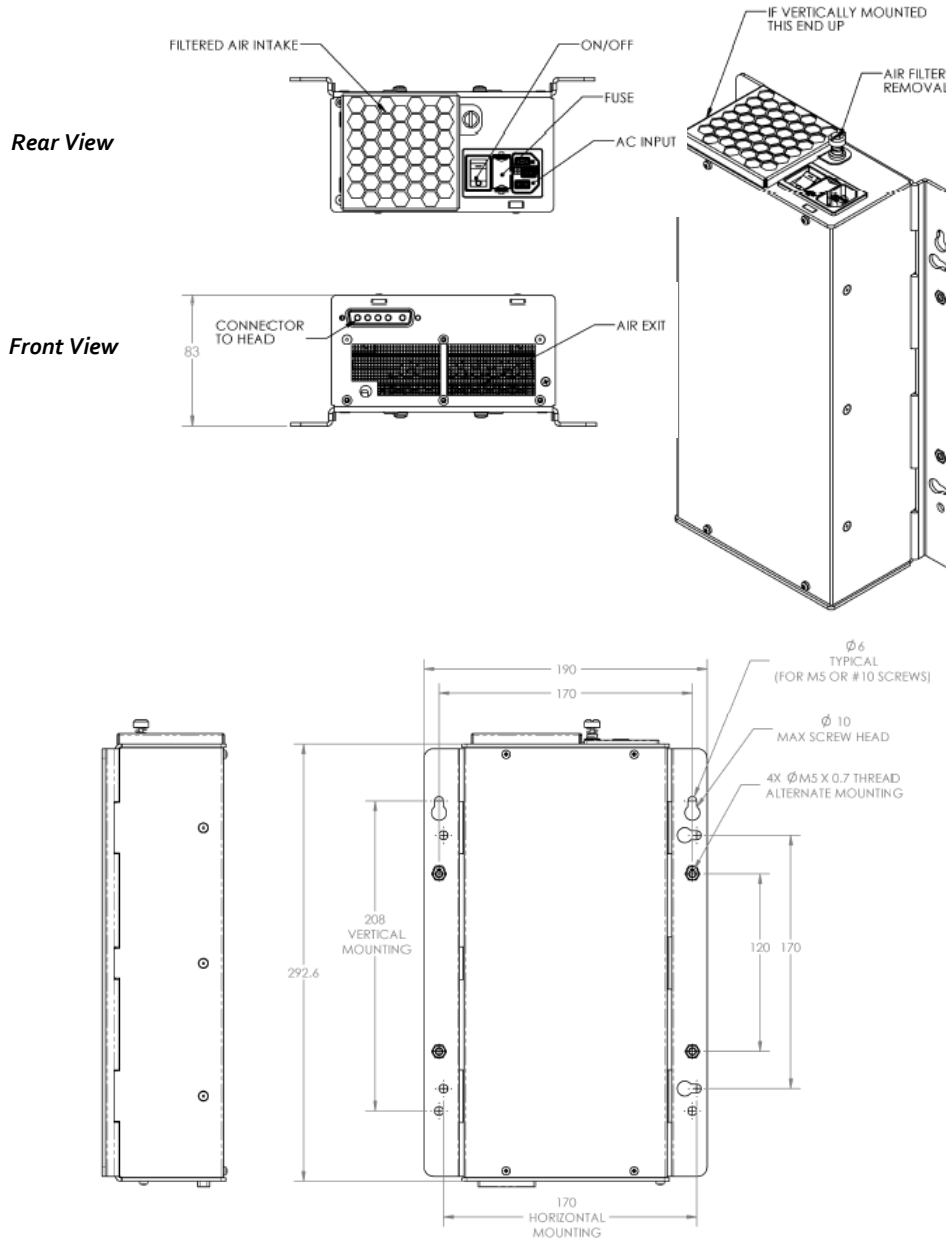


Figure 1 SC0650 Unit



### 3.3 Electrical Connectivity

DC Power Connector

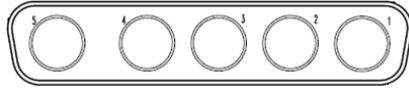


Figure 2 Power Connector (looking at System Controller)

PIN	Name	Description
A1	+ve	48V DC power feed.
A2	–	No connection
A3	-ve	48V DC power return.
A4	–	No connection
A5	Chassis	Chassis ground connection

Table 1 Power Connector Pin Out

## 4 Connecting the System Controller

1. Ensure that the power switch on the rear of the System Controller is set to the "off" position (see Figure 1).
2. Locate the AC power cord and insert into the AC-inlet receptacle on the rear of the System Controller.
3. Locate the 5W5 DC power connector on the front of the System Controller. Connect the DC cable and tighten the jack screws to prevent the connector disengaging during use.
4. Connect the other end of the 5W5 DC cable to the UV LED head and tighten the jack screws as before.
5. Connect any other control cabling to the UV LED head as required and as per the specific product manual for that system.
6. Plug the trailing end of the AC power cord into an AC mains outlet at the wall capable of supplying voltage and current as per the specifications in this manual.
7. Using the power switch on the rear of the System Controller, power on the connected AC-series UV LED equipment. When the output is live, a green status indicator on the front of the System Controller will be lit. The internal power supply circuitry is now energized and the internal fan should now be audible. If the status indicator does not illuminate and the UV LED heads fail to power up, ensure that steps 1-7 have been followed properly.



**\*\*WARNING\*\***

*The System Controller should only be connected to a mains outlet using the style and rating of cable provided. This regional cable is of the 3-pin variety and carries a protective earth connection. For user safety, do not substitute this cable with any 2-pin variety.*

## 5 Mounting the System Controller

While the SC0650 System Controller can be left as a free-standing unit, it is intended to be easily installed through mechanical fixing using the mounting features on the chassis. The design is flexible enough that it can be installed in any physical orientation

To install the System Controller (refer to [Figure 1](#)):

1. Disconnect any electrical cables that are connected to the body of the SC0650 System Controller.
8. Select a location for mounting. This location should be free from obstructions to the front and rear of the unit to allow easy connection/disconnection of cables and no impedance to the airflow of the unit.
9. Select a mounting orientation and whether the unit will be installed on a horizontal or vertical surface. The SC0650 can be mounted in any orientation
10. Select an appropriate fastener type and identify the correct fastener spacing from figure 1.
11. Ensure that the mounting surface has both provision for the mounting scheme intended and adequate mechanical stiffness to support the mounted controller in the desired location.
12. If using the keyhole mounting features,
  - install the keyhole fasteners first and tighten to leave approximately 3mm of the fastener stem protruding from the mounting surface
  - Lower the system controller onto these fasteners and reposition it such that the fasteners engage in the narrow end of the keyhole. Tighten the two fasteners.
  - The remaining two mounting holes should now be registered directly under two circular holes on the system controller chassis. Insert two more fasteners into these locations and tighten to secure the final location of the installed controller.
1. If using the threaded mounting option
  - ensure that the mounting surface has holes spaced as per figure 1 through which M5 x0.7 fasteners can be threaded (preferred option) or inserted and bolted on the reverse side of the mounting surface.
  - Position the SC0650 over the mounting holes and thread the fasteners until finger tight.
  - Tighten the fasteners using a wrench. Bolt and secure from the rear of the mounting surface, if necessary.
13. Reconnect all electrical cables.

**Note:** The mounting system is designed to retain the System Controller chassis only. It is not designed to support any additional loading placed on the unit. Placing additional mechanical loading on the unit may damage the mounting brackets or the mounting hardware itself. *Excelitas Technologies considers evidence of such cases as outside of warranty.*

*It is recommended that both AC and DC-side cabling be tied off and mechanically supported to prevent undue stress on the electrical connectors.*

## 6 Troubleshooting

*Service to be completed by qualified Excelitas Technologies personnel only!*

### If the green LED indicator fails to illuminate:

1. Validate that mains voltage is reaching the receptacle intended for use by powering an independent electrical load from it, (e.g. a light).
2. Check that the AC mains cable is connected securely to the AC mains and AC inlet receptacle on the SC-series unit.
3. Ensure that the fuse is present and in good condition.
4. Ensure that the rear on/off switch is set to the on position.
5. If the indicator remains unlit, try disconnecting the DC-side cables and repeating steps 1-4. This will isolate the fault, if any, to the supply or the downstream connectivity.

### If the UV LED heads are running and then power appears to be disconnected from them:

- Ensure that the electrical load from the connected AC-series head is a supported configuration for the System Controller employed.
- Ensure that there is adequate ventilation for air intake and exhaust. If the System Controller is installed in a cabinet, the ambient temperature must be less than 40 degrees Celsius.

### If the UV LED heads appear to be running at a reduced intensity:

- Verify that the AC mains voltage is within the range of 100-240V AC @50/60Hz. Of particular concern is the low end AC voltage.



**Caution:** Inspect the AC cable for any signs of wear or mechanical damage. If any point along the cable looks damaged, contact [Excelitas Technologies Service department](#) for replacement (refer to Section 10, "Contact Information").

- Verify that the DC voltage at the point of load is greater than 47V.



**Caution:** Inspect the DC cable(s) for any signs of wear or mechanical damage. If any point along the cable looks damaged, contact [Excelitas Technologies Service department](#) for replacement.



**Caution:** It is normal for electrical cables and connectors to warm up while in use. If a cable or connector is too hot to be comfortably handled, there may be an electrical problem associated with it. Contact [Excelitas Technologies Service department](#) for guidance.

## 7 Care and Maintenance

The System Controllers are designed to provide years of trouble-free operation with little maintenance activity. Here are some guidelines for ensuring long-life from the System Controller.

- Do not locate the System Controller directly in an environment with significant air-borne contamination. Although the SC0650 has an integrated filter, very small particulates may still pass through into the unit. Observe the air flow direction of the SC-series (back to front) and do not install in a location or environment that would impede the airflow (e.g. vents against an enclosure or a strong air current blowing against the exhaust vent)
- Ensure all air-intakes and exhaust vents are at least 50mm away from obstruction and free from dust and debris. If necessary, wipe with a dry cloth or use compressed air to dislodge particulate matter which may be stuck to the vents.
- The air-filter may be removed by unscrewing the thumbscrew on the filter retainer and moving the filter. The filter can then be cleaned using compressed air or alternatively, washed using water. If water is used, allow the filter to dry completely before reinstalling.
- Do not run the SC0650 for long period of time without the air-filter being installed. This may lead to the accumulation of airborne contamination inside the unit over time and potentially premature failure.



**Caution:** Do not use a wet cloth or any aerosol-type cleaning fluids as this may be ingested by the unit, causing damage and the risk of electrical shock.

- If the unit needs to be cleaned more thoroughly, first disconnect from the AC mains. Using a damp cloth (impregnated with either with water or alcohol), wipe the surfaces of the unit. Take care to ensure that the cloth is not dripping. If using alcohol, avoid the labels to prevent them from being smeared or detaching from the unit and avoid heavy rubbing. Do not use acetone.
- Ensure that AC-side and DC-side cables are connected firmly to the chassis and (where applicable) screwed in to prevent damage to the connectors. Cables should be tied off to provide strain relief to the electrical connectors.

## 8 Technical Specifications

### 8.1 Environmental and Unit Specifications

		SC0650
Operating Temperature Range (degrees C)		10-40C
Dimensions (mm) (not including mounting brackets)	Length	293
	Depth	190
	Height	83
Weight (kg)		2.0kg (4.5 lbs)
Input Voltage		100-240V AC 50/60Hz
Maximum AC input current (A)		7.5-3.1
Fuse Rating		8A (dual fuse)
Maximum DC power (W)		650
DC output voltage		48V, +/-1V
Maximum DC current (A)		13.5
Number of DC output connectors		1
Certifications		CE, RoHS, WEEE

Table 2 Technical Specifications

### 8.2 Regulatory Compliance

The SC0650 System Controller has been designed to meet the requirements of the following standards:

**Product Safety:**

**IEC61010-1:2010 (Third Edition)-** Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use Part 1: General requirements.

**CAN/CSA C22.2 No. 61010-1 - Issue 2012/05/11 Ed: 3/ UL 61010-1 – Issue:2012/05/11Ed: 3 -** Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use Part 1: General Requirements.

**General Requirements**

IEC Equipment Class: I  
Installation Category: II  
Pollution Degree: 2

Requirements for MAINS cords or cord sets are contained in ANSI/UL 817 and CSA C22.2 No. 21.

Requirements for general use receptacles, attachment plugs, and similar wiring devices are contained in ANSI/UL498 and CSA C22.2 No. 42, CSA C22.2 No. 182.1, CSA C22.2 No. 182.2, and CSA C22.2 No. 182.3.

**For Canadian and United States Standards for MAINS connectors:**

Requirements for plugs of MAINS cords are contained in ANSI/UL 498 and CSA C22.2 No. 42, CSA C22.2 No. 182.1, CSA C22.2 No. 182.2, and CSA C22.2 No. 182.3.

**Electromagnetic Compatibility:**

**EN 55022: (1998 w/A1:00+A2:03) (Class A)**

Information technology equipment-Radio disturbance characteristics - Limits and methods of measurement

**EN 61204-3(2000) Low Voltage Power Supplies, D.C. Output – Part 3:**  
Electromagnetic compatibility (EMC) – Generic Standards

**\*\*WARNING\*\***  
*This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.*

**CE Marking:**

**EU Council Directives:**  
Low Voltage 2006/95/EC  
EMC 2004/108/EC  
WEEE 2012/19/EU  
RoHS 2011/65/EU



### 8.3 China RoHS

The following table contains substance information for the OmniCure® system as required by China RoHS regulations:

**Names and Content of Toxic and Hazardous Substances or Elements**

Parts Name	Toxic and Hazardous Substances or Elements					
	Pb	Hg	Cd	Cr6+	PBB	PBDE
UV LED Head	o	o	o	o	o	o
<p>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/T11363-2006</p> <p>x: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006 (Enterprises may further provide in this box technical explanation for marking "X" based on their actual conditions.)</p>						

**Table 3 China RoHS**

### 8.4 WEEE Directive (2012/19/EU)



The symbol above indicates that this product should not be disposed of along with municipal waste, that the product should be collected separately, and that a separate collection system exists for all products that contain this symbol within member states of the European Union.

The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way.

The crossed-out wheeled bin symbol indicated above invites you to use those systems.

If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration.

## **9 Warranty**

Excelitas Technologies warrants the original purchaser for a period of one (1) full year, calculated from the date of purchase, that the equipment sold is free from defects in material and workmanship.

In the event of a claim under this warranty, the equipment is to be sent postage and carriage paid to the [Excelitas Technologies Service Centre](#). Returned equipment will not be received without a Return Authorization (RA) Number, issued by the appropriate Service Centre.

In order for us to serve you better, include a written description of the fault and the name and telephone number of a contact person who may be contacted for additional service related questions.

Any claims for units received with defects in material or workmanship must be reported to an authorized Excelitas Technologies Service Centre within 30 days from the original date of receipt and returned within 30 days of reporting to a an authorized Excelitas Technologies Service Centre. Excelitas Technologies will repair or replace these reported defects free of charge. The equipment must be sent postage and carriage paid.

Package the equipment in its original shipping case or as appropriate to prevent damage during transport.

In the case of damage caused by wear and tear, careless handling, neglect, by the use of force or in the case of interventions and repairs not carried out by an Excelitas Technologies Authorized Service Centre, the warranty ceases to be valid. This warranty may not form the basis for any claims for damages, in particular not for compensation of consequential damages.

This warranty is not transferable.

### **9.1 Returning your System Controller to Excelitas Technologies for Service**

Please make a note of the problem encountered, the steps followed to isolate the problem and the result of any trouble shooting steps taken.

Telephone the nearest Excelitas Technologies Service Centre to obtain a Return Authorization Number so that repairs may be completed quickly and efficiently. In North America, request for Return Authorization number can be made online at <http://www.excelitas.com/Pages/Contact/Service-Request-Form.aspx> Enclose details of the problem with the unit and return both to the Excelitas Technologies Service Centre. The unit should be returned in its original packaging if possible.

Include a phone number and contact person who may be reached for any additional service-related questions.



## 10 Contact Information

Excelitas Canada Inc.  
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Fax: +1 905 821-2055

[http://www.excelitas.com/Pages/Contact/Contact\\_OX.aspx](http://www.excelitas.com/Pages/Contact/Contact_OX.aspx)

[www.excelitas.com/omnicure](http://www.excelitas.com/omnicure)

### Technical Assistance:

[Techsupport@excelitas.com](mailto:Techsupport@excelitas.com)

<http://www.excelitas.com/Pages/Contact/Service-Request-Form.aspx>

For a complete listing of Authorized OmniCure Distributors and Service Centres please go to

<http://www.excelitas.com/Pages/Support/Service-Centers.aspx>