

SC10000 System Controller

Application Overview

The OmniCure® AC Series air-cooled UV LED area curing systems are used in applications such as optical coatings, wood coatings and sealants, hydrogel films, as well as wide area printing which require uniform curing across larger widths ranging from 0.9m to greater than 5m. In order to accommodate these applications, OmniCure AC Series systems can be stacked end-to-end to allow for almost limitless curing lengths.



When multiple AC Series' curing heads are used, the demand for power supplies to power each LED head increases, which can significantly increase the cost for such applications. The SC10000 system offers the ability to operate multiple AC heads from a single power supply making integration for these larger customizable lengths, simpler and more cost effective.

For example, the OmniCure AC8300 LED head typically requires 2.2KW of electrical power to operate at full capacity. Adjoining four of the AC8300 heads to create a 1.2m wide optical source to cure wood panels will require four of the SC3000 power supplies. These must be mounted into a rack-mount style cabinet with four AC input cables, four AC receptacles, and all of the necessary support hardware. Alternatively, a single SC10000 power supply could be used to power all four AC8300 LED heads, saving installation time and money.



OmniCure SC10000 installed in custom housing.

SC10000 System Controller

The Challenge

The ability to control multiple AC Series UV LED area cure systems cost-effectively, while minimizing the footprint occupied by the installation. Uniformity optimization controls, as well as master control mechanisms, are necessary for most multi-unit applications.

The Solution

The SC10000 system controller has been designed to provide sufficient electrical power to operate four x AC8300; six x AC8225; nine x AC8150 and even three of our new AC8300-HD LED sources. It can produce up to 10,000W of power, with a 48 VDC output, and will source up to 210A of current. Power output cable splitters can be employed that will take one +48VDC 5W5 connector and create two to ten additional power connectors. With this configuration, up to 40 of our OmniCure AC2110 LED heads can be powered at once. Additionally, protective and indicator features have been designed into the SC10000. In rapid production environments, the SC10000 system controller is an ideal solution to accommodate multi-step power sourcing to simplify the process and ultimately optimize energy use.



The Benefit

A cost-effective, multi-channel power source with an overall reduced footprint will simplify installation of multiple AC Series UV LED systems while maintaining full protection and connectivity. One larger power supply enclosure is easier and less costly to integrate, requires fewer mounting brackets, and is more convenient to maintain and service. AC input power to the SC10000 is accomplished with one 5-wire connection using multiple smaller power sources such as the SC3000 and several AC input cables, receptacles, and AC breakers. Additional output current protection is implemented into the SC10000 such that each +48V output connector has its own circuit breaker to prevent DC power cable overloading.

Extra features added on to the SC10000:

Feature	Type	Benefit
AC phase fail-unbalance	<ul style="list-style-type: none"> • Audible alert • Visual indicator • Optional PLC O/P 	<ul style="list-style-type: none"> • If poor AC quality conditions occur, preventative maintenance can be done to minimize line fall-out
Cooling fan fail	<ul style="list-style-type: none"> • Audible alert • Visual indicator • Optional PLC O/P 	<ul style="list-style-type: none"> • Preventative maintenance can be employed before complete SC10000 shutdown • Minimizes/prevents line fall-out
Over-temperature	<ul style="list-style-type: none"> • Audible alert • Visual indicator • Optional PLC O/P 	<ul style="list-style-type: none"> • If an over-temperature condition occurs, preventative maintenance can be done to minimize line fall-out