Regulatory Models
Lumencor utilizes regulatory model names for all certified and CE marked products. The regulatory model names are traceable to all regulatory documentation, third party reports and certifications.

“Regulatory Model: Celesta” is used as a representative model for all certified and CE marked Celesta Products.

Emissions
This equipment has been tested and found to comply with the limits of EMC directive 2014/30/EU and FCC part 15 (CISPR 11:+A1:2016). 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.

Safety Certifications
TUV SUD America, CB Certification (IEC 61010-1:2010)
TUV SUD America, NRTLus Certification (UL 61010-1:2012-05)
TUV SUD America, cNRTL Certification (CAN/CSA-C22.2 No. 61010-1:2012)
TUV SUD America, EN Certification (EN 61010-1:2010)

CE Marking
Low Voltage Directive (2014/35/EU)
EMC Directive (2014/30/EU)
RoHS Directive (2011/65/EU)
REACH Regulation (EC) No. (1907/2006/EC)

EU Declarations of Conformity can be found at http://lumencor.com/company/regulatory-compliance/

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CELESTA Light Engine® Instruction Manual 2
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1. **Introduction**

The CELESTA light engine consists of individually addressable solid-state laser light sources with integrated electronic control systems. The outputs of the laser light sources are refined by bandpass filters and merged into a common optical train directed to the light output port on the front panel. The light output port has a built-in adapter for connection to an SMA-terminated optical fiber. An onboard photodiode array continuously monitors the light output and generates a reference signal that is applied to the constituent sources in a feedback loop to maintain constant light output over time. The light sources within the CELESTA light engine are controlled by software; via one of two serial interfaces, USB/RS-232 or TCP, to an onboard microprocessor operating Lumencor firmware. The user can enable or disable each source independently by serial commands as well as change the intensity of each source independently. The CELESTA light engine can be controlled by third party microscopy data acquisition software or by a GUI resident on the onboard microprocessor. Alternatively, the light sources may be turned on and off by TTL inputs from a trigger device such as a camera or a real-time controller. Optimal internal operating temperature is maintained by negative pressure air cooling with the air intake at the front of the light engine and the exhaust fan at the the rear.
2. Precautions and Warnings (Précautions et mises en garde)
A few simple practices will ensure trouble-free operation for the life of the light engine.

Les quelques règles simples suivantes permettront d’assurer un fonctionnement fiable pendant toute la durée de service de la source lumineuse.

Safety Instructions:
Please read and follow all safety instructions provided BEFORE using the CELESTA light engine. Failure to comply with the safety instructions may result in fire, electrical shock, or personal injury and may damage or impair protection provided by equipment. Please save all safety instructions.

Instructions de sécurité:
Veiller à lire et à respecter toutes les instructions de sécurité fournies AVANT d’utiliser le CELESTA light engine afin d’éviter les risques d’incendie, de décharge électrique, de blessure corporelle et de possibles dommages ou défaillance de la protection offerte par l’appareil. Conserver toutes les instructions de sécurité.

Safety Definitions (Définitions relatives à la sécurité):

**Warning:** Statements identify conditions or practices that could result in personal injury.

**Avertissement:** déclarations qui identifient des situations ou des pratiques susceptibles d’entraîner des blessures corporelles.

**Caution:** Statements identify conditions or practices that could result in damage to your equipment.

**Attention:** déclarations qui identifient des situations ou des pratiques susceptibles d’endommager le matériel.

Safety Items (Mesures de sécurité):

**Warning:** ONLY use the power supply provided by Lumencor. The Lumencor-supplied 24 VDC, 9.2 A external power supply is required for use with the CELESTA light engine. The equipment is required to be supplied by a properly approved/certified DC power source meeting the minimum electrical ratings of the product. The DC power supply must have the AC power cord connected to a receptacle with a protective safety (earth) ground terminal.

**Avertissement:** utiliser uniquement l'alimentation fournie par Lumencor. Le Lumencor fourni 24 VDC/9.2 A alimentation externe est recommandé pour une utilisation avec le moteur de lumière CELESTA. Il est impératif que l'alimentation DC a la sortie protection contre les surintensités, que la puissance de l’CELESTA est pas fusionné. L'alimentation DC doit répondre aux exigences d’un circuit courant limité par la clause 9.4 de la IEC 61010-1 3rd ed. Branchez le cordon d'alimentation à une prise avec une sécurité de protection (terre) borne de terre.
Warning: DO NOT look into the output of the light engine. The brightness of this light source is higher than most commercial lighting fixtures and is intended to couple directly into a microscope or other bioanalytical instrument.

Avertissement: NE PAS regarde directement la sortie de la source lumineuse. L'intensité lumineuse de cette source est supérieure à celle de la majorité des appareils d'éclairage disponibles dans le commerce et est conçue pour un raccordement direct à un microscope ou autre appareil de bioanalyse.

Warning: DO NOT turn on the light without the output end of the light guide safely directed into an enclosed optical path. DO NOT point the light output directly onto any flammable or burn-susceptible material. This includes all animal or vegetable tissues, plastics, fabrics, paper and liquids.

Avertissement: NE PAS allumer la lumière sans l'extrémité de sortie du guide de lumière dirigée en toute sécurité dans un chemin optique fermé. NE PAS pointer la sortie de lumière directement sur un matériau susceptible d’être inflammable ou susceptible de brûler. Cela comprend tous les tissus, les plastiques, les tissus, le papier et les liquides animaux ou végétaux.

Caution: Use of controls or adjustments or performance of procedures other than this specified herein may result in hazardous radiation exposure.

Attention: L'utilisation de commandes ou de réglages ou l'exécution de procédures autres que celles spécifiées dans le présent document peuvent entraîner une exposition à des radiations dangereuses.

Class 4 Laser Warning

Warning: This product contains Class 4 laser sources. Avoid eye and skin exposure to direct or scattered visible and invisible laser radiation.

Avertissement: Ce produit contient des sources laser de classe 4. Évitez l’exposition des yeux et de la peau au rayonnement laser visible ou dispersé visible et invisible.

Laser Sources

<table>
<thead>
<tr>
<th>Color</th>
<th>Center Wavelength (nm)</th>
<th>Power</th>
<th>Beam Divergence</th>
</tr>
</thead>
<tbody>
<tr>
<td>See label located on product,</td>
<td>300 - 1150</td>
<td>See label located on product.</td>
<td>NA: 0.39 = 23 degrees</td>
</tr>
</tbody>
</table>
Laser Aperture Warning

Warning: Avoid exposure - laser radiation is emitted from this aperture. Do not turn on light engine without first connecting a light guide to the output aperture. The distal end of this light guide must be coupled into an enclosed optical path prior to operation. Each operational control and laser aperture that can be separated by 2m or more from a radiation warning device shall itself be provided with a radiation warning device. Do not exceed 2m without providing a radiation warning device in accordance with EN 60825-1:2007 & 2014.

Avertissement: Évitez l’exposition - le rayonnement laser est émis à partir de cette ouverture. L’ouverture de sortie est interverrouillée et un guide de lumière doit être connecté et couplé dans un chemin optique inclus avant l’opération. Chaque commande opérationnelle et l’ouverture laser qui peuvent être séparées de 2 m ou plus à partir d’un dispositif d’avertissement de rayonnement doivent être munies d’un dispositif d’avertissement de rayonnement. Ne dépassez pas 2m sans fournir un dispositif d’avertissement de rayonnement conformément à la norme EN 60825-1:2007 & 2014.

Warning: DO NOT open the unit. There are no serviceable parts inside and opening the light engine enclosure will void the manufacturer’s warranty.

Avertissement: NE PAS ouvrir l’appareil. Il ne contient aucune pièce réparable et l’ouverture de son boîtier a pour effet d’annuler la garantie.

Caution: DO NOT set liquids on the light engine. Spilled liquids may damage your light engine.

Attention: NE PAS placer de liquide sur la source lumineuse. Les liquides renversés peuvent endommager la source lumineuse.

Caution: DO NOT drop the light engine. It contains glass optical components that could be damaged or misaligned by the shock produced by a drop onto a hard surface.

Attention: NE PAS laisser tomber la source lumineuse. Elle contient des composants optiques en verre susceptibles d’être endommagés ou désalignés par le choc résultant d’une chute sur une surface dure.

DISCLAIMER: Lumencor shall not be liable for injury to the user or damage to the product resulting from the CELESTA light engine being used in a way for which it was not intended and in complete disregard for all posted safety precautions and warnings.

AVIS DE NON-RESPONSABILITÉ: Lumencor décline toute responsabilité pour les blessures corporelles ou les dommages au produit résultant d’une utilisation du CELESTA light engine autre que celle prévue et du mépris total de toutes les mesures de sécurité et mises en garde affichées.
3. **Installation and Operating Instructions**

3.1 **Contents**

The CELESTA light engine ships with the following list of standard components:

1. The CELESTA light engine, configured with 7 output channels (colors) and an output adapter for connection to an SMA-terminated optical fiber as documented on the certificate of conformance (Figure 1).


3. A region-specific AC power cord for the power supply (see adjacent table).

4. RJ45 ethernet cable

5. Control key, external gate jumper, and remote interlock jumper (Figure 2).

6. Quickstart Guide instruction document (85-10049)

The model name, unique 4- or 5-digit serial number and certification markings of the light engine are carried on a label affixed to the rear panel. Performance specifications for individual light engines are listed on the certificate of conformance included with the shipping documents emailed to the customer (Figure 1).

3.2 **Installation**

When setting the CELESTA light engine up for use, place the unit on a hard surface and avoid blocking or restricting airflow at the air inlets (front panel; Figure 3) or exhaust ports (rear panel) on the enclosure. Restricting the airflow will cause the unit to operate at elevated temperatures and will result in decreased product life and/or premature failure. The CELESTA light engine must be operated in a non-condensing environment (dew point <10°C with controlled ambient temperature <30°C). Thermal overload protection is provided by the on-board computer in conjunction with an on-board temperature sensor. If the internal temperature registered by the sensor exceeds 50°C OR the fan rotor is stopped, all light output channels

<table>
<thead>
<tr>
<th>Color Channel</th>
<th>Red Power (mW)</th>
<th>Green Power (mW)</th>
<th>Blue Power (mW)</th>
<th>Total Power (mW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>51200</td>
<td>102</td>
<td></td>
<td>52220</td>
</tr>
<tr>
<td>Green</td>
<td>59500</td>
<td>102</td>
<td></td>
<td>60520</td>
</tr>
<tr>
<td>Blue</td>
<td>47200</td>
<td>102</td>
<td></td>
<td>48220</td>
</tr>
<tr>
<td>Yellow</td>
<td>142011</td>
<td>102</td>
<td></td>
<td>143033</td>
</tr>
<tr>
<td>White</td>
<td>44200</td>
<td>102</td>
<td></td>
<td>45220</td>
</tr>
<tr>
<td>Total Power</td>
<td></td>
<td></td>
<td></td>
<td>126400</td>
</tr>
</tbody>
</table>

**Figure 1.** Specimen certificate of conformance (C of C) for CELESTA light engine. The C of C identifies the color channels installed in the light engine and the bandpass filters associated with each channel. Full (100%) power outputs measured at the terminus of the optical fiber are recorded in the third column.
automatically turn OFF and are locked in this state until the internal temperature is below 50°C and/or the fan restarts. The current reading of the on-board temperature sensor is displayed on the front panel status display (Figure 3) and in the GUI (Figure 5).

3.3 Operation

3.3.1 Controls and Interlocks

The Master Power Switch button on the front panel (Figure 3) turns the electrical power to the unit on or off. A green power indicator embedded in the button is lit when the power supply is connected to the light engine and the power button is in the on position. Initialization of the onboard computer takes about 30 seconds after the master power switch is turned on. When initialization is complete, the status indicator display (Figure 3) will activate.

The Key Control (Figure 3) must be in the on position before the lasers can be turned on. The key must be removed and stored in a secure location when the product is not in use. ONLY trained individuals should use and have access to the key. The Master Power Switch button, Key control and Remote interlock can be used to shut off laser output.

The Source Enabled indicator LED (below the status indicator display; Figure 3) provides a warning indication that one or more laser sources are active and emitting invisible and/or visible radiation.

The Remote Interlock Connector (Figure 2): is provided to allow for connection of a remote interlock. When this interlock is open it will shut off laser output. After the interlock has been opened, the Manual Interlock Reset button will need to be pushed to resume laser output.

WARNING: Prior to turning the light output on, be sure the output end of the optical fiber is safely directed into an enclosed optical path (e.g. a beam dump).

Note: In the event of ANY normal or abnormal interlock fault condition (including high ESD/EMP/EFT conditions ~2kV) you MUST clear the latched fault condition by depressing the manual reset button.

3.3.2 Start Up

1. Insert the optical fiber in the light output port (front, right-hand side) and lock it in place using the integral threaded sleeve.[1].
2. Insert the external gate jumper (Figure 2) in the labeled socket on the front panel (Figure 3). Insert the remote interlock jumper in the labeled socket in the lower left corner of the rear panel.
3. Insert the control key, turn it to the **ON** position.
4. Connect the isolated DC power supply to the light engine.
5. Connect the AC power cord to the DC power supply.
6. As soon the DC power supply is energized, the master power button (top right) will automatically light up. The light engine automatically starts when the power is connected; there is no need to push the master power button [2].
7. Wait 30–45 seconds for the initiation sequence (onboard microprocessor boot-up) to complete. Do not press any buttons or insert any plugs during this time.
8. When the initiation sequence completes, “LUMENCOR” will flash on front display panel and then be replaced by a display showing the current light engine IP address, the internal temperature and the fan status. At the same time, the fan will come on at HI for about 2 seconds and then shut off automatically.
9. The light engine is now ready for use.

**Notes**

[1] Ensure that the distal end of the optical fiber is safely directed into an enclosed optical path (e.g., microscope epilluminator or a beam dump) before turning the light output on. If the light engine is equipped with an output adapter for an SMA-terminated optical fiber, connect the fiber to the output adapter using the integral threaded sleeve.

[2] For subsequent start ups, use the master power button to start or shut down the light engine. Shut down can also be accomplished using the “Shut Down” button in the Control GUI (Figure 4).

**3.3.3 Ethernet Connection and Control GUI**

The Web GUI provides a quick and easy way to control the light engine, providing the ability to turn each source on/off, adjust the power of each source independently from off to full power (Figure 4). The GUI also tracks the total on time for each laser light source and display output power readings from the onboard photodiode array. A channel map stored on the onboard computer is used to define the association of control addresses with light sources. The channel map can be viewed by sending the command GET CHMAP to the LAN port. To access the Web GUI on a Windows workstation, follow the protocol below:

1. Go to Start menu > Control Panel > Network & Internet and/ or Network & Sharing Center
2. Click Change Adapter Settings
3. Right-click on Local Area Connection
4. Click on Properties (in pop-up)
5. Select Internet Protocol Version 4 (TCP/IPv4)
6. Click Properties button
7. Use the following IP addresses:
   - IP Address: 192.168.201.201
   - Subnet Mask: 255.255.255.0
   - Default gateway and DNS Server are OK to leave blank
8. Connect the RJ45 cable (supplied with the light engine) between the LAN port on the light engine and an ethernet port on the computer.
9. Type the Light Engine IP address (Figure) into any web browser address bar to access the resident Web GUI. The factory default IP address is 192.168.201.200.

![Figure 4. CELESTA GUI, Control Tab. The GUI is accessed by typing the light engine IP address (192.168.201.200 in this example) into a web browser. The filled radio button indicates that Cyan channel output is active.](image)

![Figure 5. CELESTA GUI, System Tab. The GUI is accessed by typing the light engine IP address (192.168.201.200 in this example) into a web browser.](image)

Control of the CELESTA light engine is implemented through a built-in library of software commands. A complete listing of the commands is provided in the Lumencor Light Engine Command Reference (Document Number 57-10018). These commands can be delivered using Transmission Control Protocol (TCP) to the LAN input. The IP address of the light engine required for LAN communication is shown on the front panel status display (Figure 3) or can be obtained using the GET IP command addressed to the RS-232 or USB serial ports. The light engine software commands can also be delivered via the USB or RS-232 serial ports (Figure 3) from various third-party data acquisition software packages.
3.3.4 Control via Serial Ports

CELESTA light engines have two serial ports, labeled USB and RS-232 (Figure 3), which can be set to receive either LEGACY or STANDARD mode commands. Connection to the computer requires a USB-A-to-USB B cable (29-10058) or USB-to-RS-232 cable (29-10011). LEGACY commands are limited to controlling on/off switching and intensity adjustment of selected individual color channels. Only one of the two serial ports can be set to LEGACY mode at one time. The STANDARD mode command set gives access to an extensive panel of operating status reports and configuration settings in addition to the basic control functions of the LEGACY command set. A complete listing of STANDARD mode commands is provided in Lumencor Light Engine Command Reference (Document number 57-10018). Note that LEGACY and STANDARD mode communications use different serial protocols (9600,8,N,1 and 115200,8,N,1 respectively). Changes to the command mode setting for a serial port can be made via the Settings screen of Web GUI (Figure 5). Changes are applied instantaneously and are retained between power cycles.

Select the command mode setting for the serial port that is compatible with the light engine device driver in the control software. This selection is typically found under the “Devices” tab. The COM port address assigned by the computer to the light engine USB serial port must be correctly registered in control software at the same place.

3.3.5 Control From Light Engine Control Pod

1. Connect the CELESTA to pod (p/n 83-10007) using USB A-to-USB B cable (p/n 29-10058).
2. Open the Web GUI control interface as described in Section 3.3.3.
3. Go to the SETTINGS page in the Web GUI. Make sure that the USB port configuration is set to LEGACY mode and USB 5V is set to ENABLED.
4. The pod must be set in CELESTA control mode. The light engine control mode setting is shown in green letters at the bottom of the pod display screen. If the pod is not in CELESTA control mode, change the setting by holding down the MODE button on the pod until the light engine selection menu appears. Move the cursor to “CELESTA” by turning the pod control knob. Press the MODE button again to select CELESTA control mode and return to the main control screen.
5. Follow the instructions on Lumencor’s Light Engine Control Pod Operation sheet (p/n 54-10036). In brief, press the COLOR button to select output light output channel, press the MODE button to toggle light output on and off and turn the control knob to adjust intensity for the current light output channel selection.

3.3.6 TTL Control

The TTL Interface provides users with a faster method of switching color channel outputs on and off. Individual TTL inputs are provided for each color channel, as shown in the adjacent table. As a safeguard against unintended light output when the inputs are initially connected, the light engine TTL port is disabled and must be enabled by a serial command. To enable the TTL input, click the Enabled button next to “TTL inputs” in the GUI under the Settings tab (Figure 5) or send the standard mode command SET TTLENABLE to the LAN port. Input TTL signals can be conveniently addressed using an accessory BNC breakout cable.

<table>
<thead>
<tr>
<th>TTL Connector Pin Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OUTPUT</strong></td>
</tr>
<tr>
<td>RED</td>
</tr>
<tr>
<td>GREEN</td>
</tr>
<tr>
<td>CYAN</td>
</tr>
<tr>
<td>TEAL</td>
</tr>
<tr>
<td>Gnd</td>
</tr>
</tbody>
</table>

\[V_{\text{high}} \,(\text{min}) = 2.0V, \, V_{\text{high}} \,(\text{max}) = 5.5V\]
\[V_{\text{low}} \,(\text{min}) = 0.0V, \, V_{\text{low}} \,(\text{max}) = 0.8V\]
(Lumencor part no. 29-10156 or 29-10216; Figure 6) connected to the front panel TTL port. The breakout cable also provides a global shutter input (labeled “shutter”). TTL signals input to the global shutter will synchronously toggle all currently enabled source channels on and off.

4. Light Output Characteristics
The solid state laser sources installed in the CELESTA light engine and the bandpass filters associated with each are shown on the Certificate of Conformance included with the shipping documents e-mailed by Lumencor to the customer. The certificate of conformance also shows full (100%) power outputs for each source measured at the terminus of the optical fiber (Figure 1). Not all sources may be turned on simultaneously. To prevent exceeding the capacity of the DC power supply, power consumption is tracked by the on-board computer. If a set limit (see Governor, Figure 5) is exceeded, either by increasing intensity settings for sources that are already on, or by turning on additional sources, all light output is terminated and an error message will be displayed on the control screen. To clear the error condition, click on the System tab in the GUI and then click the Restart button under Governor.

Light source outputs are refined by bandpass filters. The specifications of these bandpass filters are recorded on the certificate of conformance as CWL/FWHM where CWL = center wavelength and FWHM = full width at half-maximum transmission, both measure in nanometers (nm). Bandpass filters are not user-exchangeable and changes require return of the light engine to Lumencor’s factory for service (see Section 7). A new certificate of conformance will be provided as part of this service.
5. Operational Specifications

The CELESTA light engine must be operated and stored within the environmental conditions specified in the table below. Performance specifications for individual light engines are listed on the certificate of conformance included with the shipping documents e-mailed to the customer (see example shown in Figure 1). It is important to retain the certificate of conformance for reference. In the event that the light engine is sold, the certificate of conformance should be transferred to the new owner. Certificates of conformance are also recorded in Lumencor’s database and copies can be requested by e-mail to techsupport@lumencor.com. The request message must include the 4- or 5-digit serial number of the light engine.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>32 to 86°F (0 to 30°C)</td>
</tr>
<tr>
<td>Non-operating</td>
<td>-4 to 158°F (-20 to 70°C)</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td></td>
</tr>
<tr>
<td>Operating and non-operating</td>
<td>0 to 80% relative humidity, non-condensing#</td>
</tr>
<tr>
<td><strong>Altitude</strong></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>0 to 10,000 feet (3,048 meters)</td>
</tr>
<tr>
<td>Non-operating</td>
<td>0 to 45,000 feet (13,176 meters)</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
</tr>
<tr>
<td>Size (W x L x H)</td>
<td>145 mm x 340 mm x 203 mm (5.7 in x 13.4 in x 8.0 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>8.7 kg / 19.1 lbs</td>
</tr>
<tr>
<td><strong>Lifetime</strong></td>
<td>Time for light engine output to decrease to 70% of the values recorded on the original certificate of conformance#</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>24VDC / 9.2A</td>
</tr>
<tr>
<td><strong>Warm-up Period</strong></td>
<td>1 s</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Thermal overload (Section 3.2), Power overdraw (Section 4)</td>
</tr>
<tr>
<td><strong>Sound Level</strong></td>
<td>Sound level at 1 meter &lt; 65dB(A)</td>
</tr>
<tr>
<td><strong>Control Interfaces</strong></td>
<td>USB, RS-232, TCP, TTL</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>18 months parts and labor</td>
</tr>
</tbody>
</table>

# The CELESTA light engine must be operated in a non-condensing environment (dew point <10°C with controlled ambient temperature <30°C). # The corresponding number of days/months/years may vary considerably depending on the duty cycle implemented by the user and the prevailing environmental conditions during operation.
6. Routine Maintenance and Trouble Shooting
No routine maintenance is required. There are no user-replaceable components or sub-assemblies in the CELESTA light engine. Opening the light engine enclosure will void the manufacturer’s warranty. In the event that the light engine fails to perform in accordance with the specifications listed on the certificate of conformance, please contact Lumencor Technical Support for assistance, as directed in Section 7.

7. Customer Support
For technical support of the CELESTA light engine, please contact Lumencor by phone at 503-213-4269 or through e-mail at techsupport@lumencor.com. Please be prepared to provide the 4- or 5-digit serial number of the light engine. Any light engine returned to Lumencor for repairs or upgrades requires a pre-issued return material authorization (RMA) number. To obtain a RMA number, submit the online request form at http://lumencor.com/support/lumencor-rma-request-form. It is the customer’s responsibility to properly package and safely ship products to Lumencor. Instructions for shipping will be provided in the e-mail giving notification of the RMA number.

8. Warranty
The CELESTA light engine is backed by a 18 month warranty to end users. Warranty coverage starts on the original date of shipment from Lumencor. Light Engines qualifying for warranty service must be verifiably delivering performance that is substantially at variance with the levels documented in the certificate of conformance. The light engine must also have been used and maintained under operating conditions consistent with the specifications given in Section 5, and observing all the Precautions and Warnings notified in Section 2. This warranty does not extend to light engines that have been subject to misuse, accident, tampering or improper installation. Accessories including (but not limited to) optical fibers, collimators, cables and control consoles are not covered by the warranties attached to light engines. Please fill out and submit the online warranty registration form. This will facilitate provision of warranty service should it be required.