

Installation and Operation Instructions
iCE LED Surgical Lights
(iCE 25/iCE 30)



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Introduction

Thank you for acquiring our new iCE 25/iCE 30 LED Series Surgical Light.

The Amico iCE LED Series Surgical Lights provide high intensity and shadow free illumination to the patient surgical field during surgical procedures.

The iCE LED Series Surgical Lights are designed for superior shadow control, increased depth of field and light intensity. The iCE 25 and iCE 30 have a CRI of 95 and an R9 greater than 90, allowing surgeons to easily differentiate between tissues. The 4500K color temperature provides a crisp white light, without the color-fringing or color shifting properties of multi-color LEDs, providing natural color to ensure that the surgical field remains clearly illuminated.

Intended User Profile:

- The iCE Surgical Lights are intended to be used by trained medical practitioners in operating rooms, procedure rooms, emergency departments and intensive care units.
- User has to be able to read the words in the mylar control and wall control to operate the light.
- User has to be able to understand the instructions for use (IFU) and the training provided by Amico staff (or other designated personnel)
- User has to be able to position the iCE Light by holding the light through the openings.

Intended Use:

- The iCE LED Surgical Lightning System is designed to illuminate the surgical field with a cool, bright white light and an adjustable pattern size.

Patient Population:

- Age: newborn, bariatric and geriatric
- Weight: not relevant
- Health: not relevant
- Nationality: Multiple
- Patient State: patient is not a user

Application:

- Environment: The iCE Surgical Lamp is intended to be used in the operating rooms, procedure rooms, emergency departments and intensive care units.
- Physical – see Environmental Conditions Section
- Frequency of use: Several times a day
- Mobility: Central Axis is fixed to the supporting structure but the extension arm and spring arm can be moved so as to position the surgical light to illuminate the operating field.

Training:

- Training provided by Amico Sales staff (or other designated) via hands-on demonstration of the equipment along with the Instructions for Use and the Quick Reference Card (File: "IcelightsTrainingCard").

Introduction

SYMBOLS USED IN THIS MANUAL



WARNING: Failure to adhere to these instructions may result in damages to equipment or injury to users.

MARKINGS

The iCE 25 and iCE 30 LED Series Surgical Lights are designed to comply with the following Standards:

Standard(s):	Medical Electrical Equipment - Part 1: General Requirements For Basic Safety And Essential Performance (R2012) [AAMI ES60601-1:2005 +AC1;A2] Medical Electrical Equipment - Part 1: General Requirements For Basic Safety And Essential Performance (R2013) [CSA C22.2#60601-1:2008 Ed.2 +C2] Medical electrical equipment - Part 1-6: General requirements for basic safety and essential performance -Collateral standard: Usability [IEC 60601-1-6:2010 Ed.3] Medical Devices - Application Of Usability Engineering To Medical Devices [IEC 62366:2007 Ed.1] Medical Electrical Equipment - Part 2-41: Particular Requirements For The Basic Safety And Essential Performance Of Surgical Luminaires And Luminaires For Diagnosis [IEC 60601-2-41:2009 Ed.2]
Product:	Surgical Light
Brand Name:	Amico
Models:	iCE-30-6, iCE-25-3, iCE-25-6



WARNINGS

Do not use this equipment prior to understanding the contents of this manual.

To avoid the risk of electric shock, this equipment must only be connected to supply mains with protective earth.

Do not modify this equipment without authorization from Amico Clinical Solutions.

Only connect cameras and spring arms that are compatible with the iCE30/25.

Keep this manual for future reference.

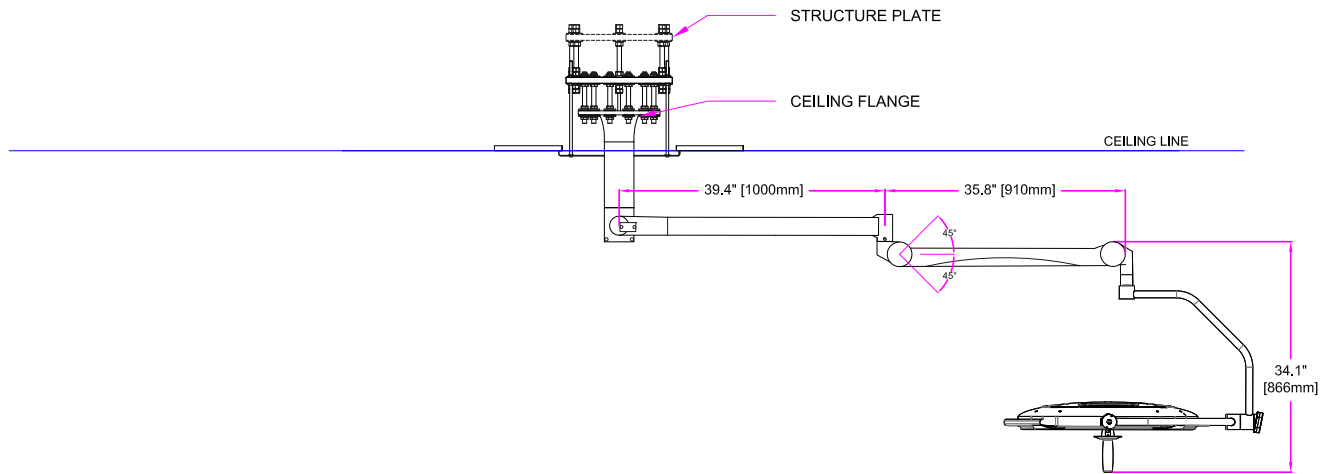
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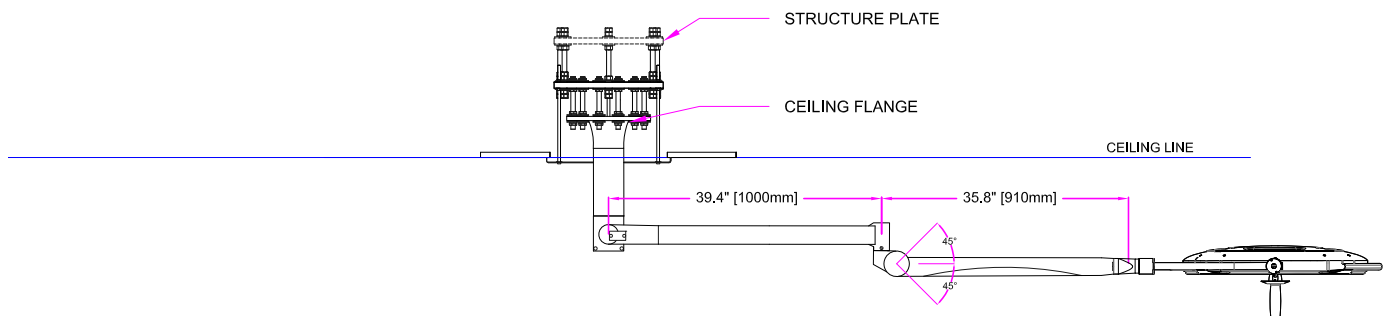
Intertek

Typical Drawings

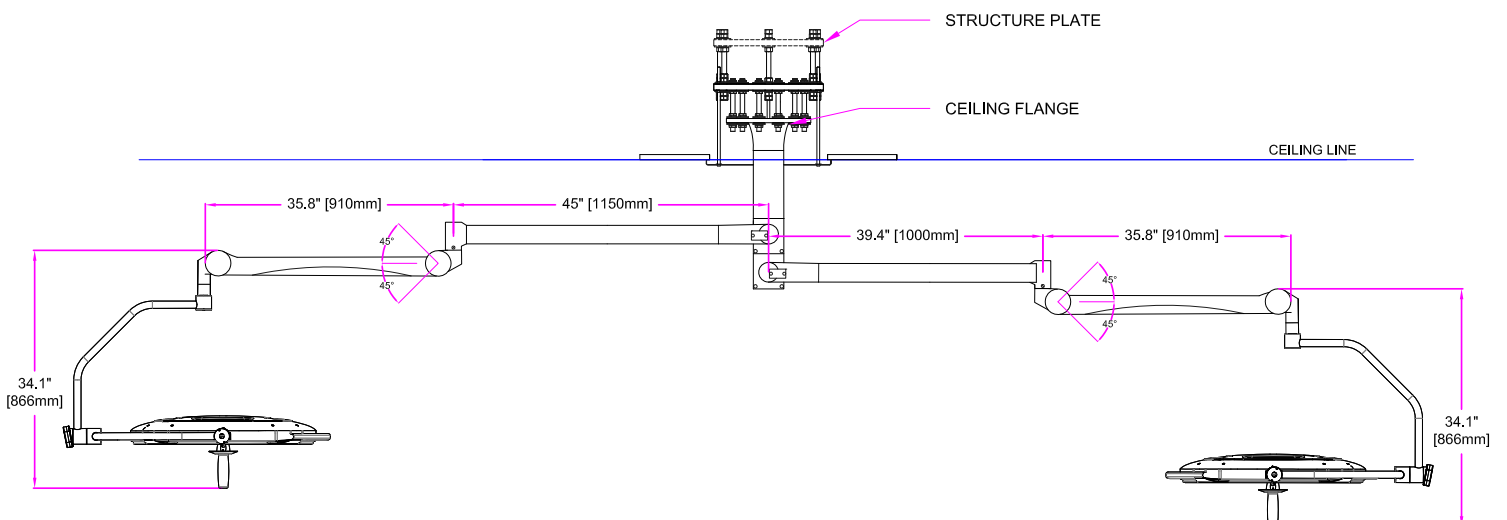
Single Ceiling Mount



Single Ceiling Mount for Low Ceiling Height

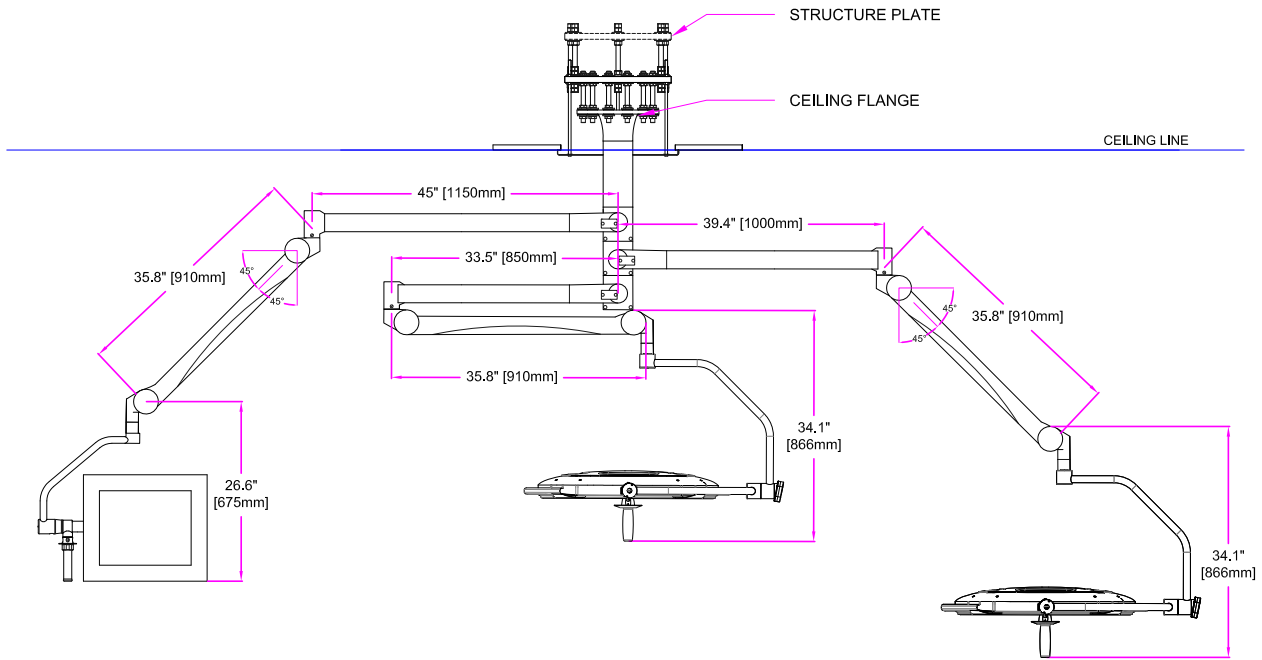


Dual Ceiling Mount

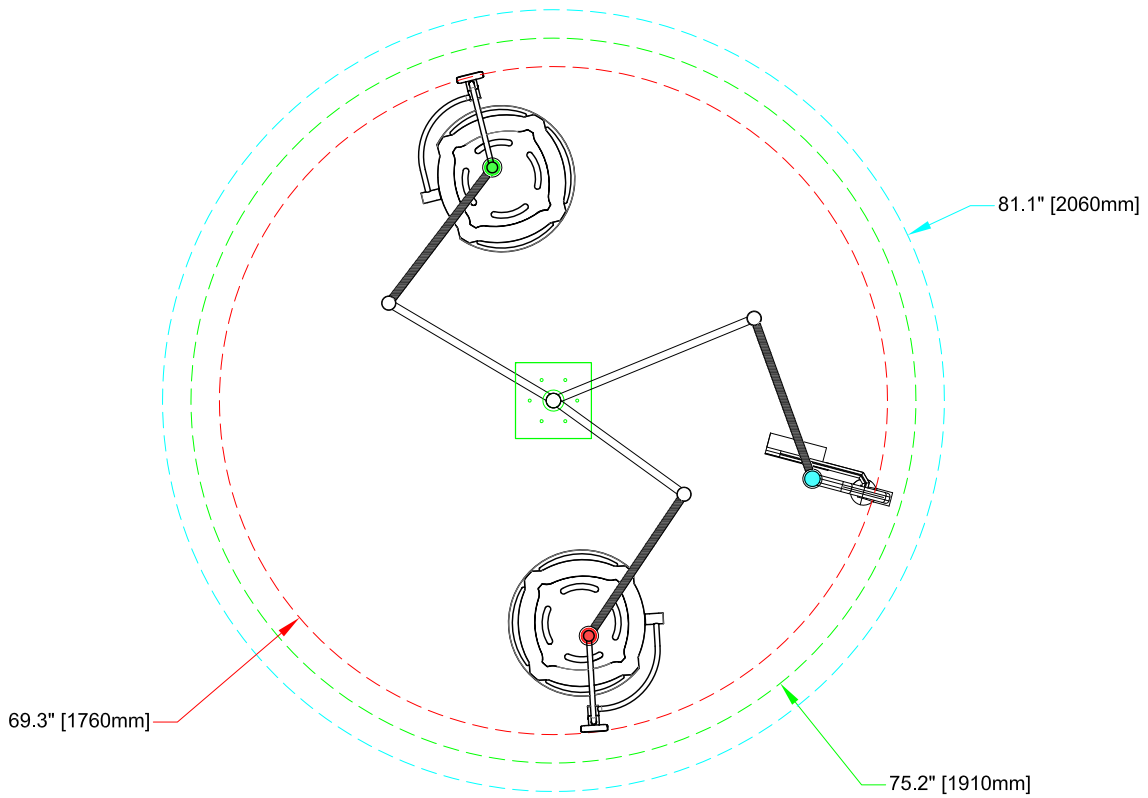


Typical Drawings

Dual Ceiling Mount with Monitor



Range of Motion for Dual Ceiling Mount



Technical Data for iCE Lightheads

Performance	Units	ice 30 ^{LED}	ice 25 ^{LED}	ice 25 ^{LED}
		160,000	160,000	130,000
Lighthouse Diameter	in	30	25	25
Light Intensity (Central Luminance)	lx	160,000	160,000	130,000
Brightness Control	%	5-100	5-100	5-100
Light Field Diameter	in	7.6 - 12	7.6 - 11	7.6 - 11
Depth of Illumination (L1+L2) at 60%	in	27.25 - 48	28.5 - 48.25	28.5 - 48.25
Depth of Illumination (L1+L2) at 20%	in	42	46.20	46.20
Color Rendering Index (Ra)		95 ¹	95 ¹	95 ¹
R9		>90	>90	>90
R13		97 ¹	97 ¹	97 ¹
Color Temperature (Standard)	K	4,500 ²	4,500 ²	4,500 ²
Shadow Dilution				
Single Mask	%	44	41	41
Double Mask	%	41	41	41
Cavity	%	97	100	100
Single Mask with Cavity	%	41	39	39
Double Mask with Cavity	%	40	39	39
Number of LEDs (main)		80	52	52
Number of Other LEDs		320	208	208
LED Service Life	hours	50,000	50,000	50,000
Total Radiant Power at Max Intensity	W/m ²	415.3	519	421.7
Power Consumption at Lighthouse	w @ 24 VDC	200	150	150
Electricity (VAC)		Universal VAC	Universal VAC	Universal VAC
Emergency Bypass		Yes	Yes	Yes
Mounting Options		Ceiling, Wall	Ceiling, Wall	Ceiling, Wall
Certificates		ETL, FDA	ETL, FDA	ETL, FDA

Amico iCE series system ratings: 100-240 VAC, 4-2 A, 50/60 Hz

All tests conducted per 60601-2-41 standard

¹CRI has a tolerance of ± 2.5%

²CCT has a tolerance of ± 15.0%



Never combine beams from more than two lampheads, as the resulting irradiance at the spot can exceed 1000 W/m² resulting in a higher than normal temperature.

Upon request, Amico Clinical will make available the circuit board diagrams, component parts list, descriptions, calibration instructions or other information that will assist service personnel in conducting repairs to the iCE 30/25.

Recommended training for safe use of the iCE Light is approximately 30 minutes for users and 2 hours for biomedical staff.

Installation Considerations

- All Amico lamps are supplied with a flange with a graduated circle diameter of 310 mm (12.2") and six bores with a diameter of 17 mm (0.67"). The flange supports the vertical suspension tube. It is attached to the solid ceiling by means of a ceiling anchorage ring.
- The ceiling anchorage plate has six precisely positioned M16 threaded bolts. This makes it possible to fasten and adjust the lamp without causing dust or dirt after all building work has been completed.
- The ceiling anchorage ring is not required for a combination pendant and LED configuration.
- During mounting, take care to ensure that neither the flange nor the attachment elements are in contact with reinforcement components of the solid ceiling.
- Depending on the stability of the location, it may be necessary to use a counter-plate for the wall attachment.
- The forces arising when the widely extending articulated arms tilt do make it necessary to drill very carefully with a certified hammer drill, paying close attention to the drilling tolerances.
- The suspension tube of the lamp or lamp combination must be adjusted vertically to prevent the lamp body from moving. For this purpose, the M16 counter nuts on the attaching bolt must be adjusted accordingly.
- For false ceilings, the suspension tubes for all lamps can be mounted directly through to the solid ceiling. The opening required for this purpose can be closed once the work has been completed. This can be completed by using the ceiling cover with a diameter of 450 mm (17.7") or a covering plate.
- When using an intermediate flange, preferably for spaces exceeding 400 mm (15.7") and for room heights exceeding 4050 mm (159.4"), the length of the intermediate flange is to be measured to the lower edge of the false ceiling. Also in this case a ceiling anchorage ring has to be used for fixation.
- Amico Clinical Solutions Corp. can only be made responsible for the safety of the light if repairs and alterations are carried out by Amico Clinical Solutions Corp. or a company that guarantees to observe the safety regulations.
- Amico Clinical Solutions Corp. cannot be made liable for personal or material damages if the light is operated inexpediently or incorrectly or used for purposes other than those for which it is intended.
- Please read the instructions carefully to install your lighting system and to avoid any damages to the device. Pay attention to the instructions for use when handling the lamp.
- This device has not been designed for use in potentially explosive areas. According to the Medical Device Regulation the light is classified under class I in Canada and class II in US per FDA.
- This device requires connection to a back-up system (done on site and provided by the facility) in the event of interruption of the supply mains for safety service. The back-up system shall restore power within five (5) seconds.

Tools and Part Requirements

1. Level
2. 2 mm Hex Drive
3. 2.5 mm Hex Drive
4. 2 mm Allen Key
5. 6 mm Allen Key
6. 15/16" Wrench x 2
7. 3/8" Flat Head Screwdriver
8. 3 mm Flat Head Screwdriver
9. Soft Mallet
10. Pliers and Cutters
11. OASYS provided tools included within package

Safety Instructions



WARNING – STORAGE AND USAGE HAZARD

- Store the iCE LED Series Surgical Light in its package for at least 24 hours in the respective room before mounting, in order to equalize temperature differences.
- Make sure that the light is in perfect working order before every use.
- **Attention:** The light works only with an external power supply of 240 VA.



WARNING – SPRING-LOADED CRUSH POINT HAZARD

- The light is to be dismantled from the spring arm in reverse order of its assembly. This may only be carried out after the spring arm has been adjusted to a horizontal position, as the arm is under spring tension and can bounce up.
- Do not remove tension screw from the spring arm joint until the lighthouse has been securely fastened onto the spring arm.
- Never attempt to install or remove the lighthouse unless the tension screw is securely locked in place.
- Extend the spring arm and replace the tension screw to lock the arm in the extended position whenever removing the lighthouse.

Safety Instructions



WARNING – PINCHING HAZARD

Pinch points are created during extreme articulation of the suspension system. Do not place hands on or near the suspension knuckle during lighthead articulations.



WARNING – IMPACT HAZARD

Do not remove the tension screw from the spring arm joint until the lighthead has been securely fastened onto the spring arm.



WARNING – POSSIBLE PATIENT INJURY HAZARD

Failure to engage the light handle cover completely may result in the cover falling from the lighthead.



WARNING – BIOHAZARD

- Sterile disposables are intended for single use only. Universal precautions must be observed when disposing of any single use disposable item.
- Do not use disposable handle covers if its packaging has been damaged, torn or opened as the sterility of the cover may be compromised.
- During surgical procedures, do not use the center focusing handle unless a disposable sterile cover is installed. If the focusing light handle (metal/plastic, provided with lighthead) is used without a disposable cover, the handle is not protected by a sterile covering.
- Sterilizable handles are available through Amico Clinical Solutions Corp.



WARNING – DISPOSAL HAZARD

This product contains materials which may require disposal through appropriately licensed and permitted hazardous waste management firms.



WARNING – PERSONAL INJURY HAZARD

- Do not attempt to replace any LED module unless power is turned off and the lighthead has cooled.
- Do not attempt to replace the lamp unless power to the lighthead is turned off.
- Do not attempt to clean the lighthead unless power is turned off and the lighthead has cooled sufficiently.
- Do not attempt to adjust the suspension system. Refer servicing to qualified service personnel.
- Do not remove the lamp structural screws. Serious injury and equipment damage can occur from the falling lamp. Only Amico certified technicians can service this component if required.
- During operation, the LED panels attain a high temperature. Serious injury can occur if touched. Allow the lamp to cool before performing any maintenance on the lighthead.

Safety Instructions



CAUTION – POSSIBLE EQUIPMENT DAMAGE

- Cleaning and disinfecting agents used on this lighting system must be certified by their manufacturer to be compatible with polycarbonate.
- Use only recommended cleaning/disinfecting and/or anti-static agents on this light. Use of alcohol or aerosol spray cleaner/disinfectants containing a substantial amount of alcohol in the formula can damage the polycarbonate lens. Use manufacturer recommended cleaners only.
- Use of any disinfectant solutions OTHER than Germicidal Surface Wipes and Disinfecting/Deodorizing/Cleaning Wipes may cause discoloration or deformation of the polycarbonate lens surface. Other solutions have NOT been tested for compatibility or effectiveness.
- Cleaners intended for use on floors must NOT be used to clean this equipment.
- Prevent leakage of fluids into interior lighthouse. Do not scratch optical coating on accessible portions of optic assembly when cleaning: always wear rubber gloves and use only a clean, white, lint-free cloth when wiping surfaces.
- Do not touch the glass portion of the lamp with bare fingers. Skin oils can cause deterioration of material leading to possible failure of the lamp.
- Do not bump lighthouses into walls or other equipment.
- During all mounting steps, verify that wires are not pinched between spring arms or lighthouses.
- Avoid cross-threading brake screws, align them with extreme care.
- Accessories or replacement parts not purchased from Amico are not to be used as they may negatively affect the equipment or result in equipment damage.
- During the mounting of the LED lights, the entire system (including the ceiling attachment) must be disconnected from mains. Dismounting of the lights from the spring arms or dismounting the sliding contacts inside the arms is to be done ONLY AFTER DISCONNECTING THE ENTIRE SYSTEM FROM MAINS. Otherwise the main control board will be damaged.
- Use only Amico supplied fuses. Any higher rating could cause damage to the LEDs and reduce their life.

Accessories:

- Cameras - Sony Models EH 6300, EH 6500, EV 7100 and EV 7500
- Handles - From Amico and other approved manufacturers

Static Inspection

The static (structural) inspection must be carried out before installation of the optional structural ceiling plate.

- The strength of the mount must be designed, checked and certified by a structural engineer or construction authority.
- Regional construction regulations that apply must be met.
- If a hole is drilled in an incorrect position, (e.g. drilling of a reinforcement rod) the structural engineer responsible must be contacted for re-assessment since static loading conditions may have changed, endangering the loading distribution.

Declaration of Acceptance:

It is hereby certified that the support ceiling and the ceiling anchoring is safe and adequately strong.

Project: _____

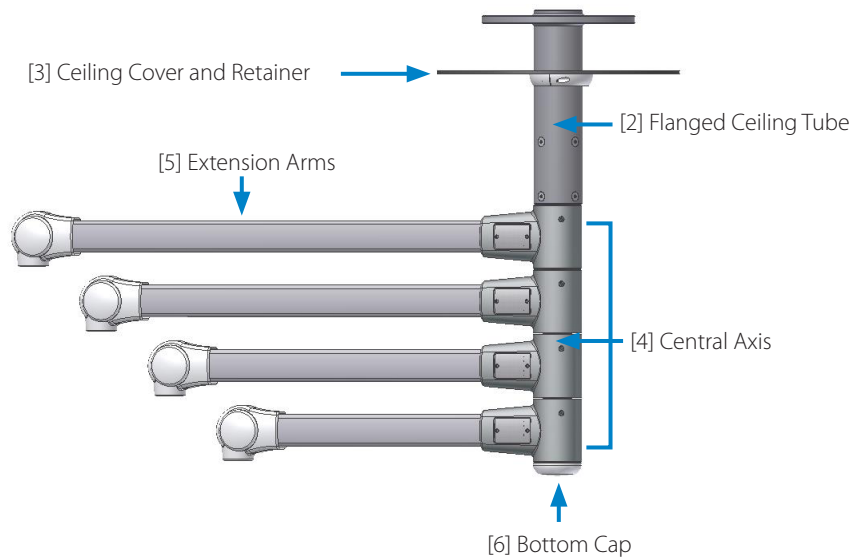
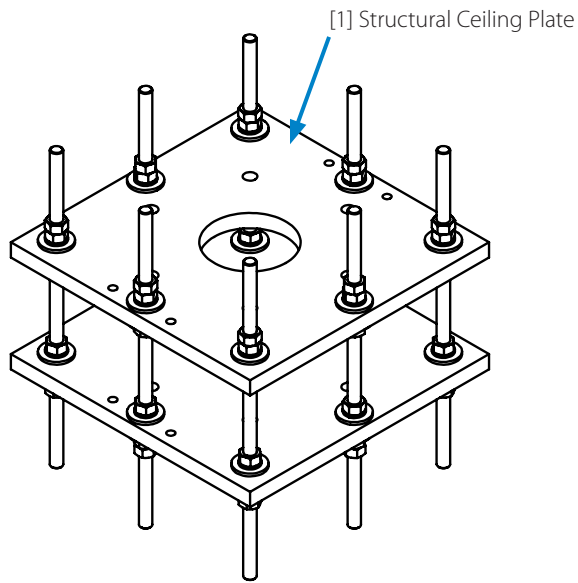
Anchoring (please check the applicable selection):

- With anchors/rods authorized by the structural engineer/construction authority
- With a counter-plate
- Other:

Location: _____

Signature/Stamp of Structural Engineer/Construction Authority:

Components and Scope of Delivery



1. Structural Ceiling Plate (Single or Dual Mount)

- 1 Structural Plate
- 1 Anchor Plate
- Dual Mount
 - 12 x M16 Lock Washers
 - 12 x M16 Flat Washers
 - 12 x M16-2 Hex Nuts
- Single Mount
 - 8 x M16 Threaded Rods
 - 48 x M16-2 Hex Nuts
 - 32 x M16 Lock Washers
 - 32 x M16 Flat Washers

2. Flanged Ceiling Tube

- 6 x M16 Threaded Rods
- 36 x M16-2 Hex Nuts
- 24 x M16 Lock Washers
- 24 x M16 Flat Washers

3. Ceiling Cover and Retainer (Plastic or Metal)

- Plastic Ceiling Cover Assembly
 - Type 1 Dome or Type 2 Flat Ceiling Covers
 - Retainer Ring with Set Screws

4. Central Axis (with 1 to 4 Arm Sockets)

- 8 x M10-1.5x32 Flat Head Socket Screw

5. Extension Arms (options)

- 46" Extension Arm with Slip Ring (9, 7, 5 or 3 pole) or Stop
- 40" Extension Arm with Slip Ring (9, 7, 5 or 3 pole) or Stop
- 34" Extension Arm with Slip Ring (9, 7, 5 or 3 pole) or Stop
- 28" Extension Arm with Slip Ring (9, 7, 5 or 3 pole) or Stop

6. Bottom Cap

7. Approved Spring Arms

- OASYS 2001 Spring Arm (OASYS Low Ceiling Height Spring Arm Inclusive)
- OASYS 3001 Spring Arm

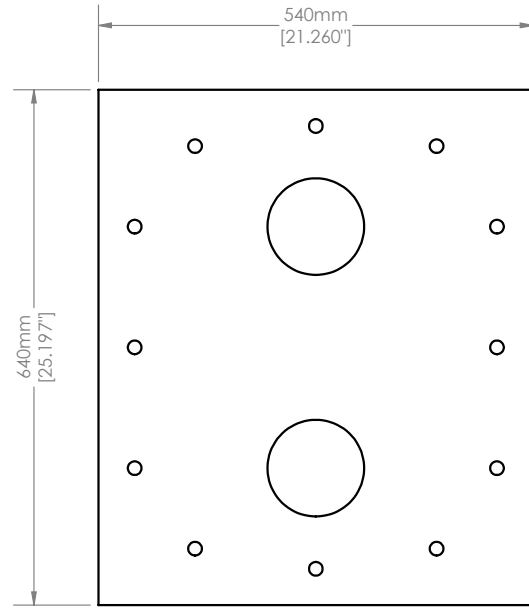
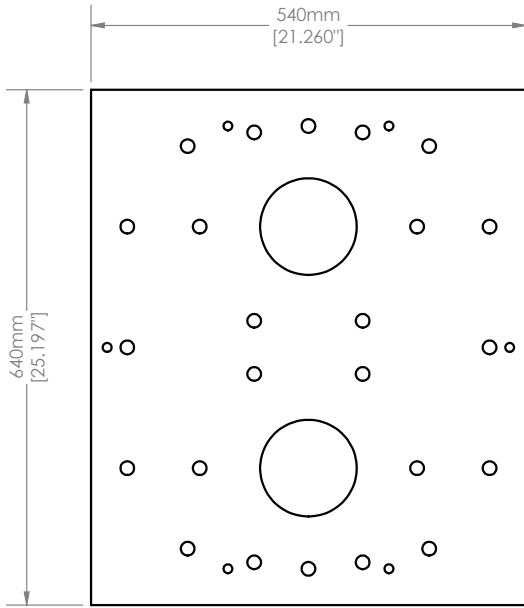
8. Approved Device Attachments

- Operating Lights
- Monitors
- Camera

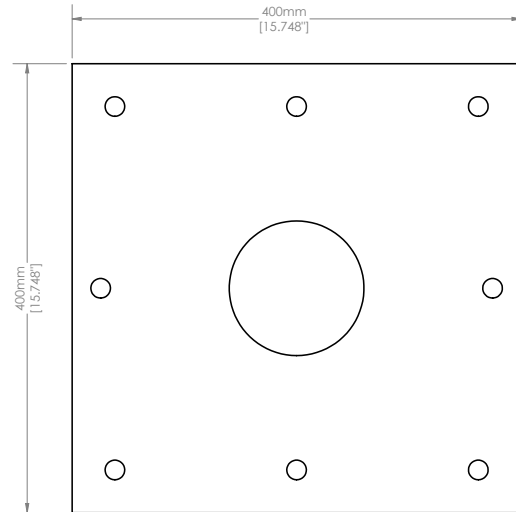
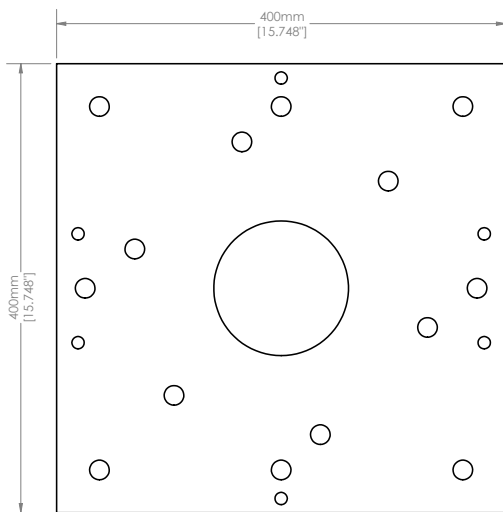
Installation: Structure Plates and Flanged Ceiling Tube

Structure Plate and Anchor Plate

Dual Mount



Single Mount



Installation: Structure Plates and Flanged Ceiling Tube

Order Components for each Threaded Rod:

1. Attach two hex nuts, one lock washer and one flat washer to one threaded rod in the configuration shown below. Then drop the threaded rod through the top of the structural plate at the specified hole locations shown on the previous page.
2. Repeat the above procedure with the remaining rods (12 total for dual mount; 8 total for single mount) that are required for the installation of the anchor plate to the structural plate.
3. Carefully align and raise the anchor plate up to the mounting rods until the bottom face of the anchor plate is 10" (254 mm) above the bottom of the finished ceiling.
4. Attach the associated hex nut, lock washers and flat washers in the correct configuration as shown below. Tighten the M16 hex nuts to 145 lbs-ft using a torque wrench.

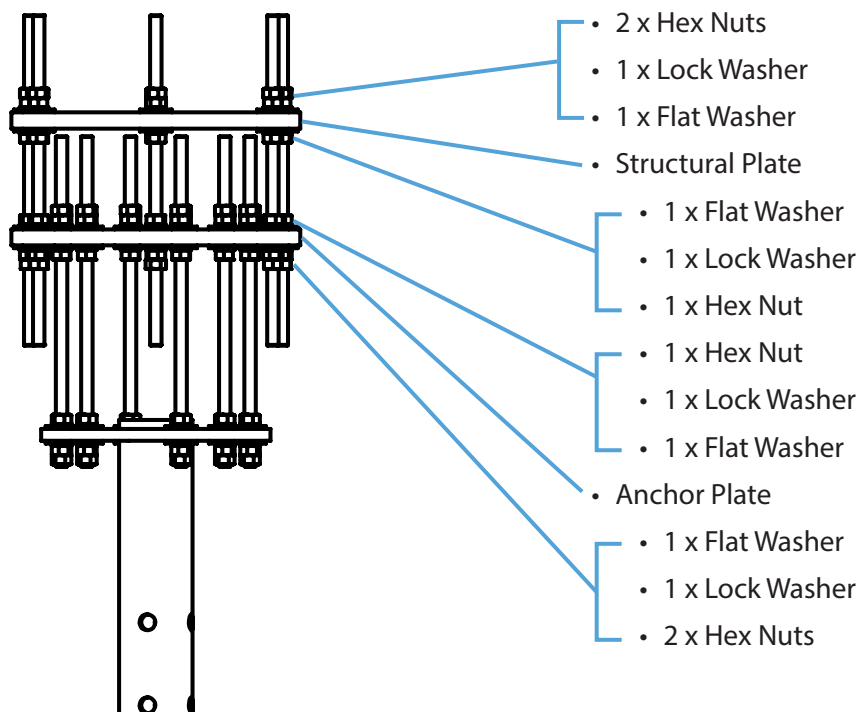


WARNING – Risk of Pendant System Dropping

If the threaded rods are not completely screwed in, it may cause the pendant system to drop suddenly.

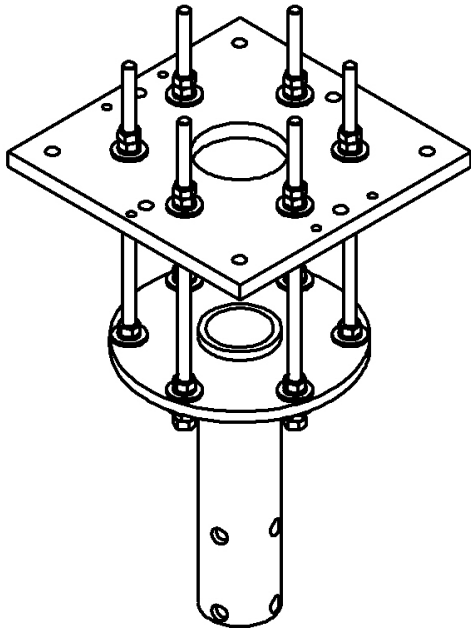
5. Install additional terminal strips for low voltage, video or communication lines on the interface plate according to the order specific configuration sheet in the submittal package.

Order Components for each Threaded Rod:



Installation: Structure Plates and Flanged Ceiling Tube

Installing The Flanged Ceiling Tube



Item	Description
1	6 x M16 Threaded Rods
2	24 x M16 Lock Washers
3	24 x M16 Flat Washers
4	Flanged Ceiling Tube
5	36 x M16 Hex Nuts



WARNING – Risk of Flanged Ceiling Tube dropping:

- If the flanged ceiling tube drops, it may cause serious injury.
- During installation, nobody is allowed to stand under the flanged ceiling tube.
- If your extension arms have stops, you will want to determine the limit of rotation. It is preferred to mark this limit and determine where the limit in the operating room would best be suited.

1. First fit the threaded rods with the necessary components between the anchor plate and the flanged ceiling drop tube.
2. Push the flanged ceiling tube onto the six M16 threaded rods of the anchor plate.
3. Secure the flanged ceiling tube with two M16 hex nuts:
NOTE: Precise horizontal alignment of the flanged ceiling tube is essential to ensure that the pendant system can be removed easily and positioned reliably.
4. Complete the assembly by installing the rest of the hex nuts, flat washers and lock washers to the threaded rods.
5. Align the flanged ceiling tube horizontally by adjusting the M16 hex nuts. Check the horizontal alignment.

Installation: Structure Plates and Flanged Ceiling Tube



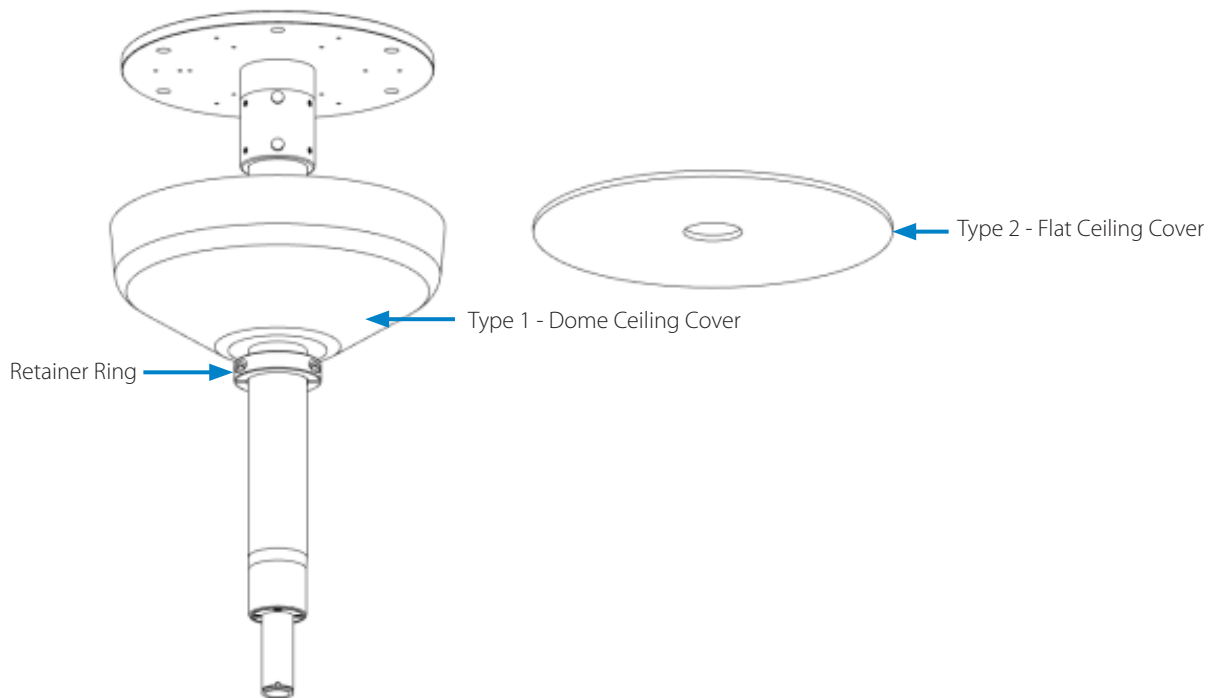
WARNING – Risk of Pendant System dropping:

Tighten the M16 hex nuts to 75 lbs-ft (torque).

6. Check that the flanged ceiling tube is securely in place.

Installation: The Central Axis

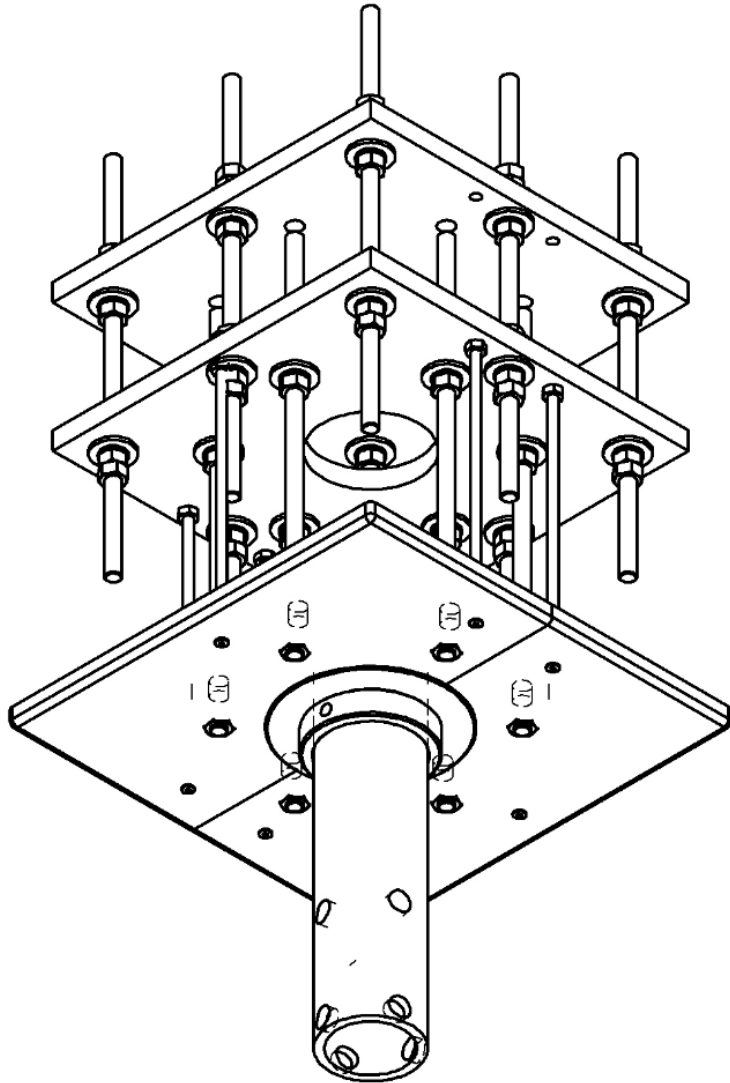
Installing The Ceiling Cover



1. Insert ceiling cover to the flanged ceiling tube.
2. Slide the retainer ring right under the ceiling cover and tighten with the set screw to hold it in place.

Installation: The Central Axis

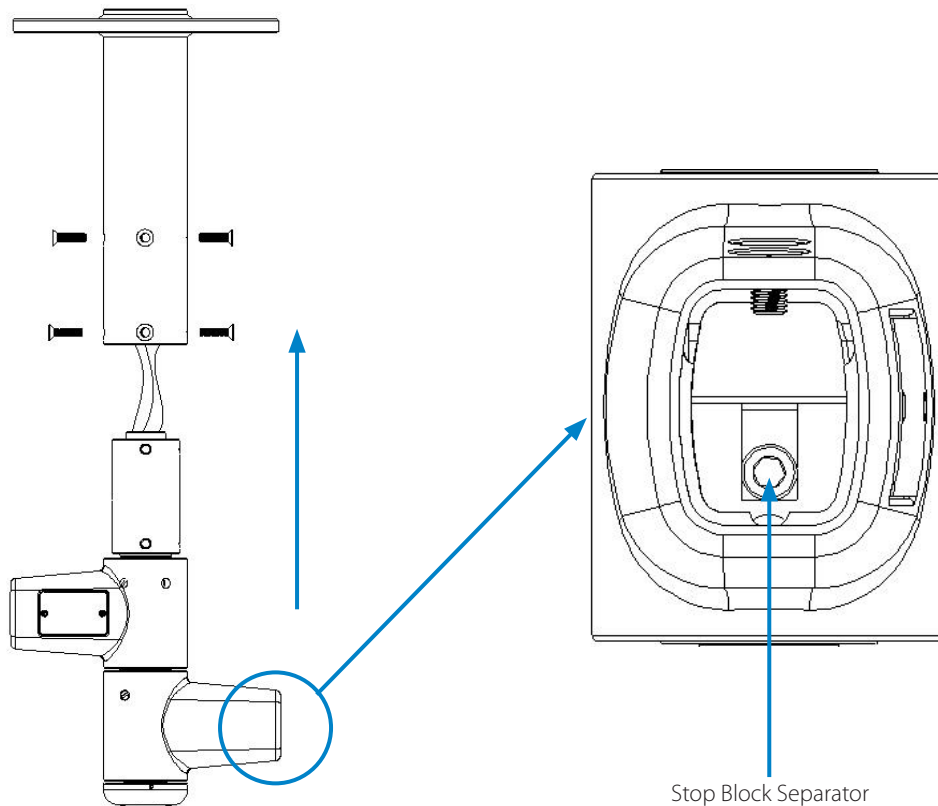
Amico Ceiling Covers



1. Secure the six M10 threaded rods on the anchor plate so that it drops down enough to the ceiling.
2. Slide the cover disk up the tube.
3. Install the ceiling covers on the M10 rods using #10-32 screws.
4. Install the plastic screw covers.

Installation: The Central Axis

Installing The Central Axis Core

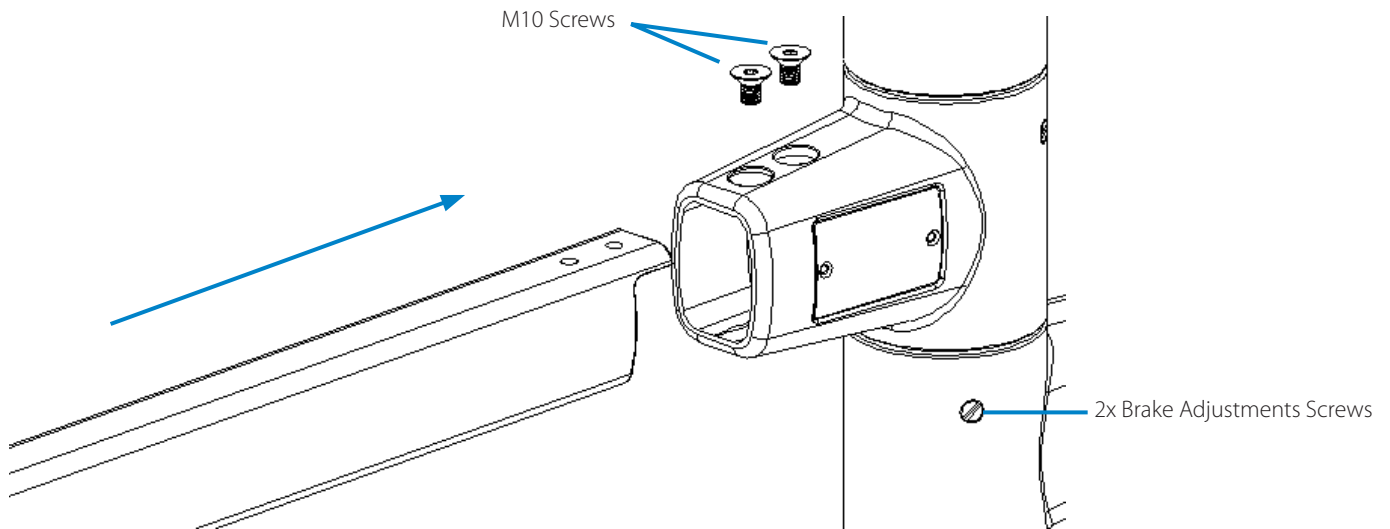


1. Position the central axis below the drop tube.
2. If your central axis has wiring pre-installed, carefully guide the electrical wires up through the drop tube and out of the top.
3. Install the central axis into the drop tube, and fasten it into place using the eight M10 screws.
 - The fastening threads in the flanged ceiling tube are 90° offset. The central axis can thus be mounted on the flanged ceiling tube at an offset of 90°. This can help align the stops in the proper orientation.
 - Extra provisions to relocate each arm stop at 90° increments is made possible by:
 - relocating the stop block separator by unfastening the M10 screw.
 - rotating the arm stopper to the desired position.
 - refastening the M10 screw.

NOTE: This must be done before proceeding to the next step of installation of the arms.

Installation: The Central Axis

Installing Central Axis Arms



1. Install the arms by sliding them into their respective positions and securing them with the two M10 screws.
2. Any electrical connections can be made by removing the two M4 screws securing the access cover. Once the cover is removed all connections can be easily made.



WARNING – Risk of Pendant System dropping:

Tighten the M10-1.5 countersunk screws to 7.5 lbs-ft (using torque wrench).

3. Check that the central axis is securely in place.
4. Tighten brake adjuster screws on the central axis to prevent the arm from drifting.

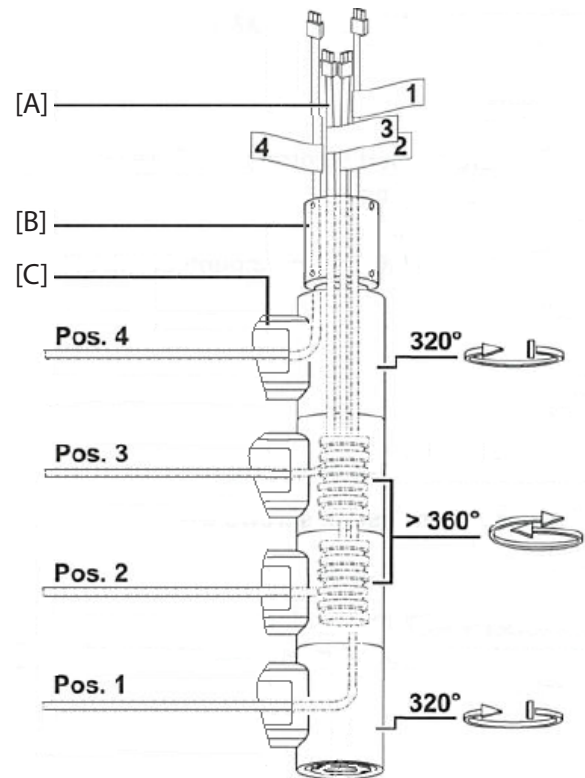
Installation: Electrical

Labelling of The Extension Leads

Supply lines in the central axis:

The supply lines [A] in the central axis [B] are identified with numbers. The numbers identify which supply leads [A] are for which extension arm [C]. For example, number 1 identifies the supply lines [A] for the lower extension arm [C] in Position 1.

Item	Description
A	Extension Leads
B	Central Axis
C	Extension Arm
D	Flanged Ceiling Tube

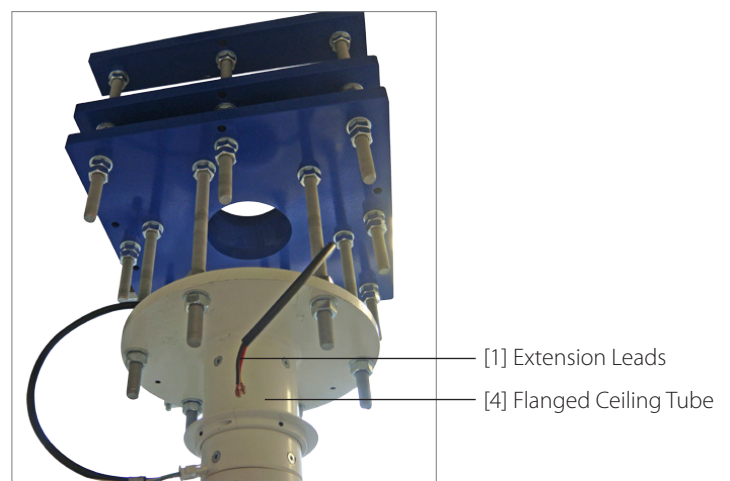


Routing The Extension Leads



WARNING – Electric Shock Hazard:

- If the extension leads are damaged, the pendant system may be live.
- Carefully route the extension leads [A] through the flanged ceiling tube [D] with gentle force.
- For extension arms without stop: route the extension leads [A] through the flanged ceiling tube [D] to the interface plate [A].



Installation: Electrical

Routing The Supply Lines Through The Ceiling Tube



WARNING – Electric Shock Hazard

- If the supply lines, position 2 and position 3 are damaged, the pendant system may be live.
- Carefully route in the supply lines, position 2 and position 3 with gentle force.

Cable routing in the top extension arm with stop:

- Route the supply line, position 2 through the 320° castings, looping the supply line around the shaft for slack.
- Leave approximately 50 cm (500 mm) of the supply line sticking out of the flanged ceiling tube.

Grounding The Flange



WARNING – Electric Shock Hazard Due To Defective Insulation:

- If the insulation is defective, the pendant system central axis may be live.
- Always ground the pendant system central axis.
- Strip the 2.5 mm² ground conductor (not supplied) and connect it to the grounding point on the flange.

Connecting The Power Supply

Qualification:

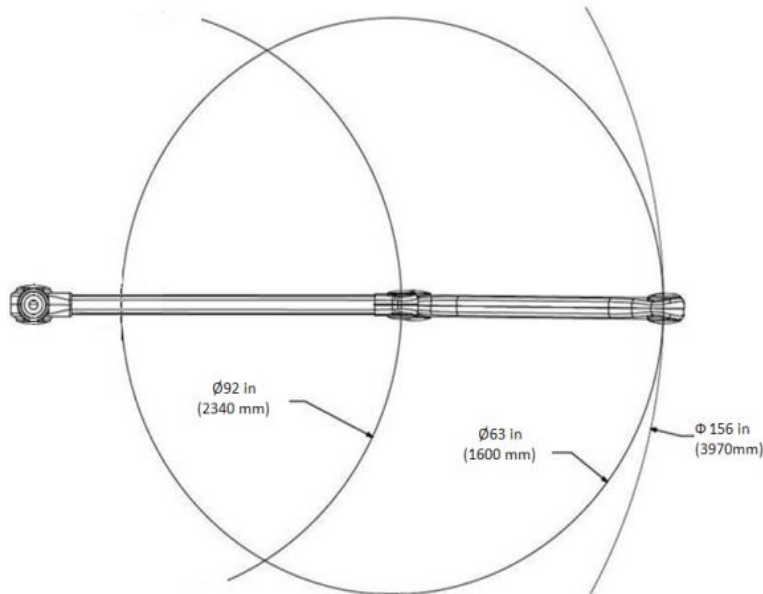
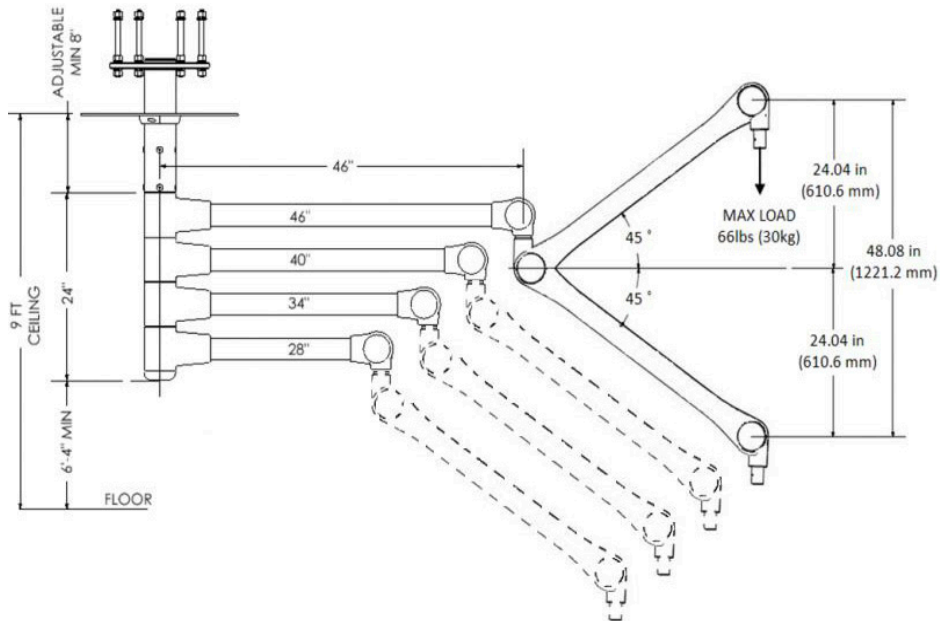
- Electrical connection of the pendant system central axis may only be carried out by a qualified electrician as per NEC 70.
- Follow the Safety Instructions, pages 9-11.
- Stranded supply lines installed by the customer must be fitted with wire end connector sleeves.
- It is the customers responsibility to provide either a switch or breaker to allow for the disconnection of mains from the power supply.

1. All conductors must be secured to the interface plate using the strain relief.
2. Feed the power supply leads through the strain relief.
3. Connect the power supply lines to the terminal block, as shown in pages 39-42.

Installation: Spring Arms

Standard Spring Arms on the Central Axis

The following diagram illustrates possible spring arm configurations.

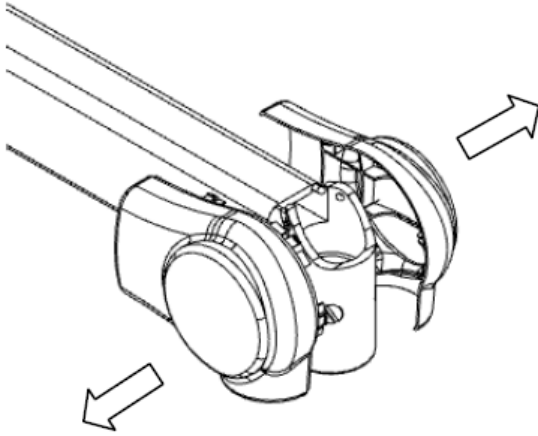


Operating Modes

- The pendant system central axis and the mounted spring arms are not intended for operation in potentially explosive atmospheres.
- The pendant system central axis is suitable for continuous operation.
- The ID plate can be found on the top extension arm.

Installation: Spring Arms

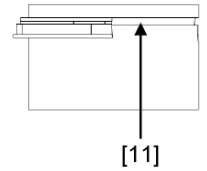
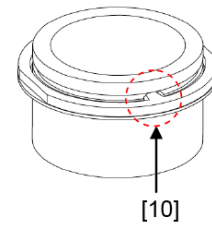
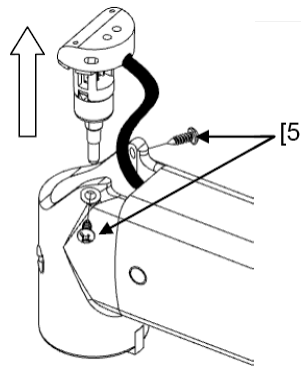
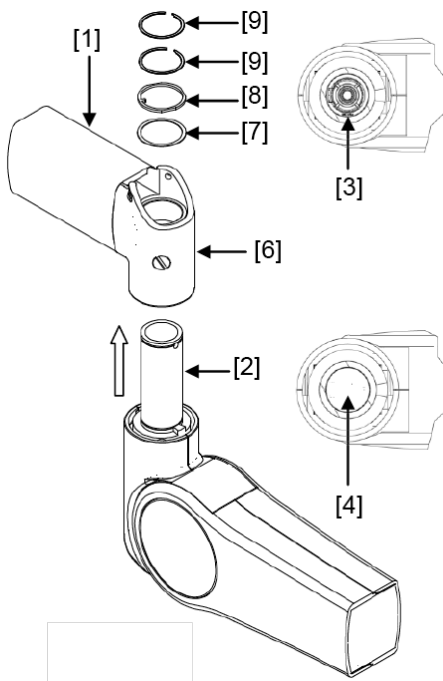
Initial Setup



In order to install a spring arm or conduct brake adjustments, the extension arm covers must be installed/removed. Observe the following instructions:

1. Firmly grasp the ends of the covers and pull them apart until they separate from one another and are free from the arm.
2. To install the covers, line up the tabs and slots and press in.

Installing/Removing the Spring Arm



Item	Description
1	Extension Arm
2	Mounting Stem
3	Slip Ring
4	Without Slip Ring
5	2 x Screws
6	Arm Joint
7	Washer
8	Safety Washer
9	2 x Retaining Rings
10	Tooth
11	Groove

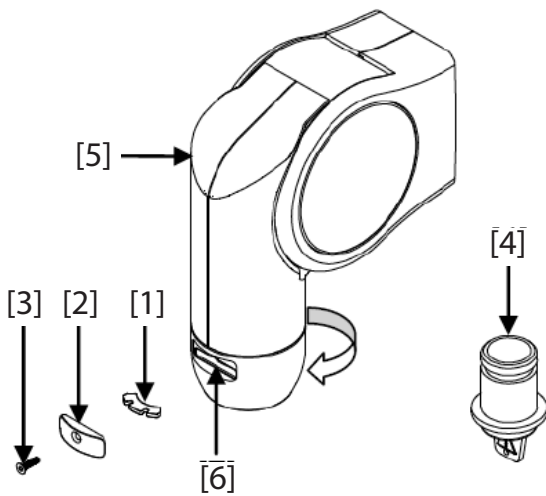
Installation: Spring Arms

1. Ensure the ceiling mount and the extension arm [1] are securely installed and the covers are removed.
2. Locate the mounting stem [2] of the spring arm and examine the electrical connection inside. If the stem is fitted with a slip ring [3] proceed to step 3. If the stem is not fitted with a slip ring [4] proceed to step 4.
3. Remove the two screws [5] holding the slip ring to the extension arm, and lift the slip ring up and out of the way.
4. Slide the mounting stem upwards into the extension arm sleeve [6] and securely hold in place.
5. Have a second person install the following hardware (in order):
 - Washer [7]
 - Safety Washer [8]
 - 2x Retaining Rings [9]
6. While installing the safety washer, ensure that its tooth [10] fits into the hole at the top of the mounting stem.
7. Ensure that both retaining rings snap into the groove [11] at the top of the mounting stem.
8. Insert the slip ring back into the spring arm and secure with two screws [5].
9. In order to remove a spring arm, please conduct the preceding steps 2-8 in reverse.

Installation: Spring Arms

Removing the Safety Plug

1. Use a 2 mm Allen key to unscrew the M3 screw [3] and take out the locking key door cover [2].
2. Rotate the nose cone 180° so that the slot in the nose cone [5] lines up with the slot in the stem. The locking key [1] should be exposed.
3. Using a small flat head screwdriver, remove the locking key [1] from the groove in the device end stem.
4. Once the locking key has been removed, slide the safety plug [4] out from the lighthouse end of the spring arm.



Item	Description
1	Locking Key
2	Locking Key Door Cover
3	M3 Screw
4	Safety Plug
5	Nose Cone
6	Groove

Installation: Amico iCE LED Light



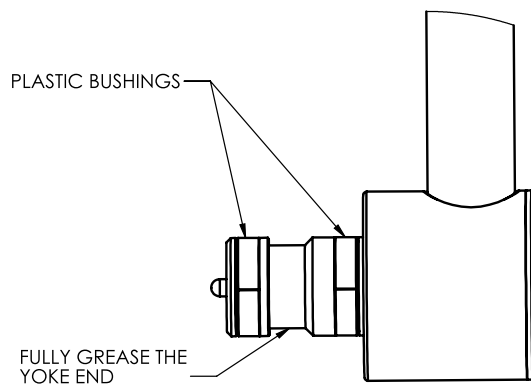
CAUTION - Installation and removal for service or inspection must be carried out by a hospital technician or a person with similar qualifications who has been trained by Amico Clinical Solutions Corp.

- Never perform an installation or removal of the LED light alone. Always have a second person to assist with the installation or removal.
- Always disconnect the spring arm system from the power supply when installing or removing the LED light. Failure to do so may result in electric shock.
- Always make sure the spring arm is at the highest position when removing the light. Failure to do so will cause the spring arm to spring upwards, and may cause serious injury.
- The LED light may separate from the spring arm if the key is not properly in place. This may cause serious injury. Always make sure that the key is installed properly.
- Failure to comply with load specifications may cause serious or fatal injuries. Ensure that the LED light load is within the specifications.

Installing the Lighthead

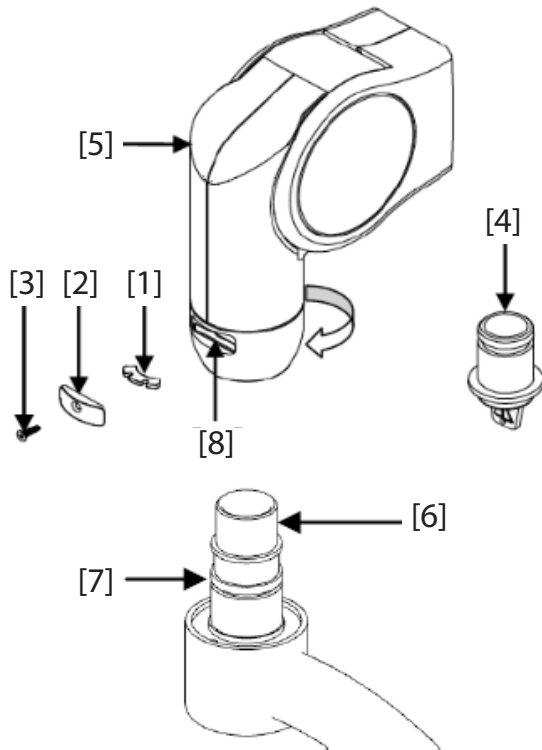
Normal System/LCH

1. Ensure the unit is disconnected from the power supply, with no possible accidental reconnection.



2. Apply approved grease to the male end of the lighthead and locking key before installation, to ensure smooth movement.
3. Ensure the safety plug is removed prior to lighthead installation.

Installation: Amico iCE LED Light



Item	Description
1	Locking Key
2	Locking Key Door Cover
3	M3 Screws
4	Safety Plug
5	Nose Cone
6	Yoke
7	Groove
8	Nose Cone Cover

Note: Two people are required for steps 4-10.

4. Rotate the nose cone cover [8] until the slot lines up with the slot on the spring arm.
5. Have one person hold down the spring arm and another person hold the lighthead [7].
6. Insert/mount light yoke [6] into the spring arm stem. Take care when inserting the lighthead. Ensure the wiring does not catch or pinch between the spring arm stem and device.
7. Insert the locking key [1].
8. Turn the nose cone 180° until the locking key door screw slot is lined up.
9. Install the locking key door [2] with the M3 screw [3] using the 2 mm Allen key.
10. Insert the brake screw [4] (if applicable) to assure the lighthead is securely fastened and free to move/rotate.

Installation: Amico iCE LED Light

Normal System/LCH with Camera

1. Ensure the unit is disconnected from the power supply, with no possible accidental reconnection.
2. Ensure the brake screw is backed out or removed all together.
3. Apply OASYS approved grease to the male end of the lighthead and locking key before installation to ensure smooth movement.
4. Fish the camera and power cables from the top of the drop tube, until it comes out the end of the spring arm. Do not fish the camera controller box cable through the drop tube.
5. Remove protective cap from the light.



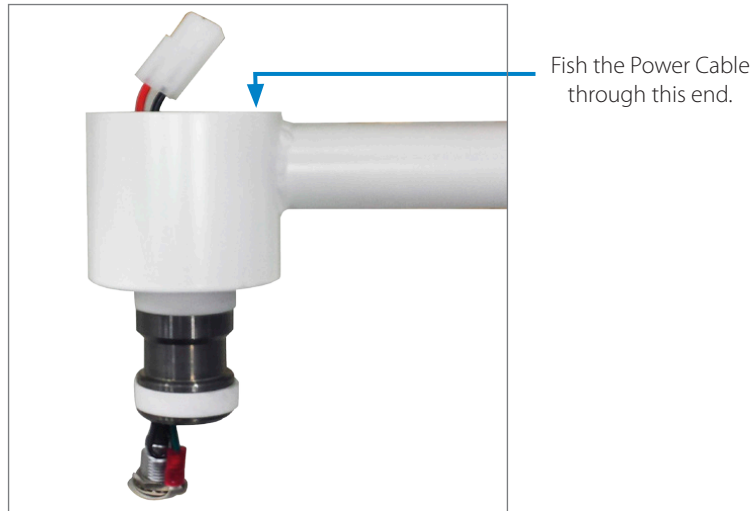
Camera cable.

NOTE: Three people are required for steps 6-15.



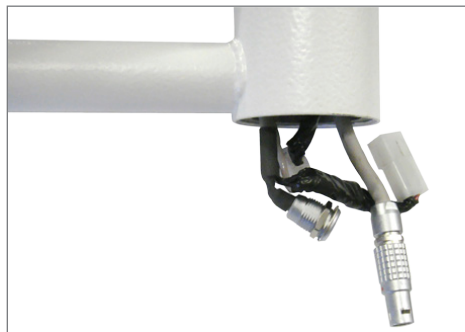
Installation: Amico iCE LED Light

6. Have one person hold down the spring arm, and another person position the lighthead close to the spring arm stem.
7. Have a third person fish the power cable from the spring arm through the yoke axle.
8. Fish camera cable through the yoke axle. The cables should now be arranged as shown below.



Power Cable

9. Align lemo connectors.
10. Connect lemo connector and two pin connector, and push the cables into the yoke axle as seen below.



Lemo Connector & Two Pin Connector



Lemo Connector Alignment

Installation: Amico iCE LED Light



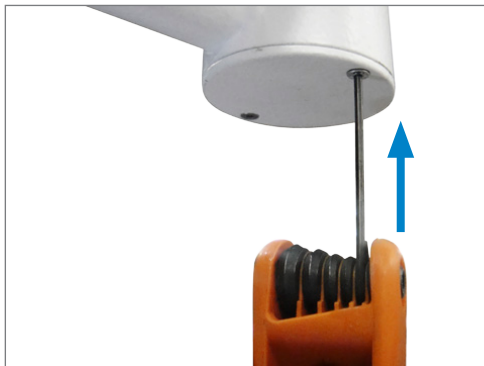
WARNING: Be very careful not to bend the lemo cables.

11. Install protective cap of the light yoke with the Allen Key.



Connect Cables and push them up

12. Re-install or re-tighten the brake screw as necessary.

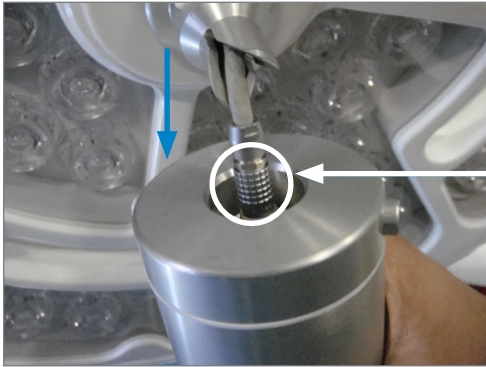


Protective Cap of the Light Yoke

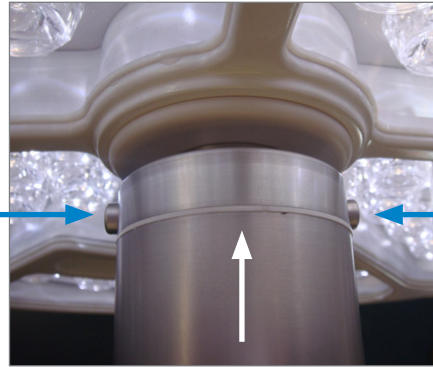
Installation: Amico iCE LED Light

Installing in Light Camera (Optional Accessory)

1. Connect the Lemo Connector to the camera.



Connector Jacket



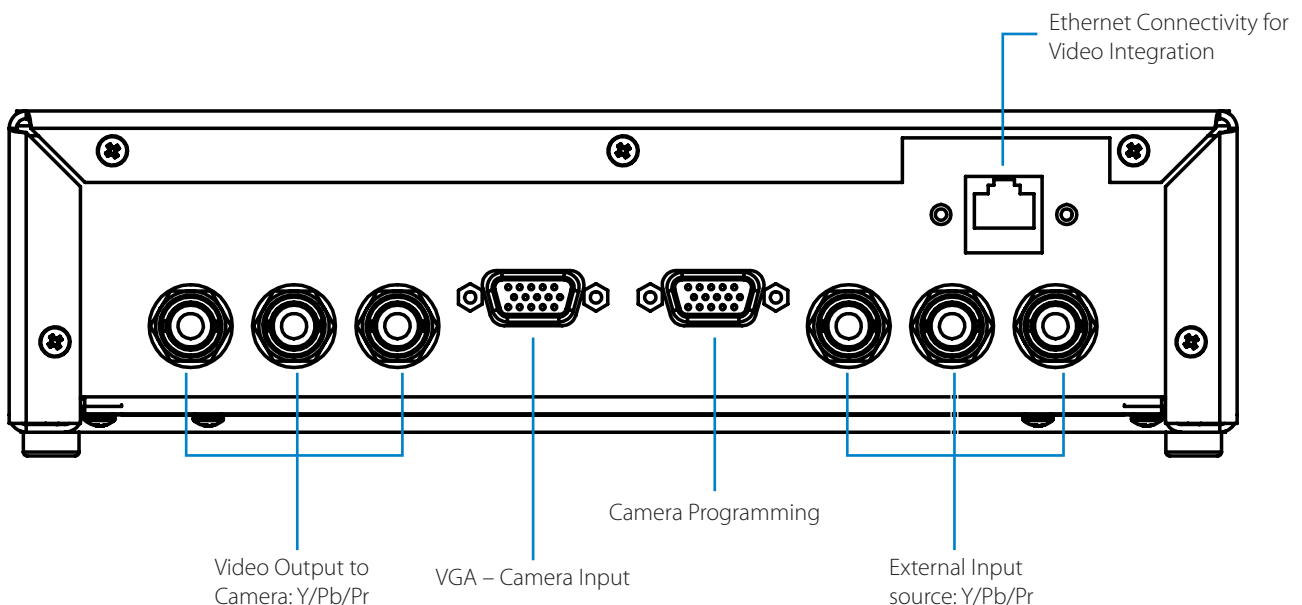
Release Button

Release Button

2. Install camera on light.
3. In order to remove the camera press the two release buttons highlighted by the arrows above.
4. To disconnect the connection, pull on the connector jacket only.
NOTE: Do not pull on cable.

Connecting the Camera Controller Box

1. Insert the 15-Pin VGA Cable into the Camera Controller Box's Input.
2. Connect the Output of the Camera Controller Box to the monitor's Input.

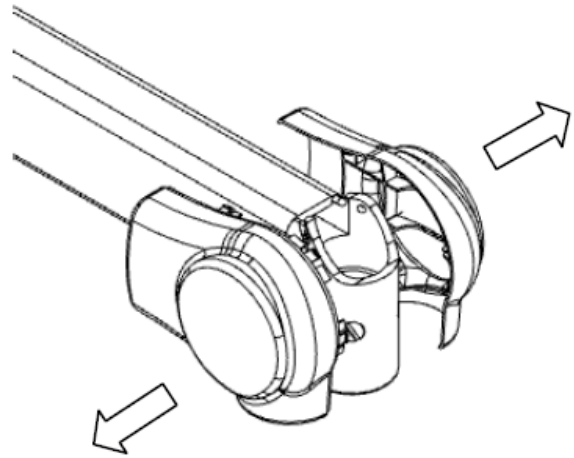


Installation: Adjustments

Brake Adjustment

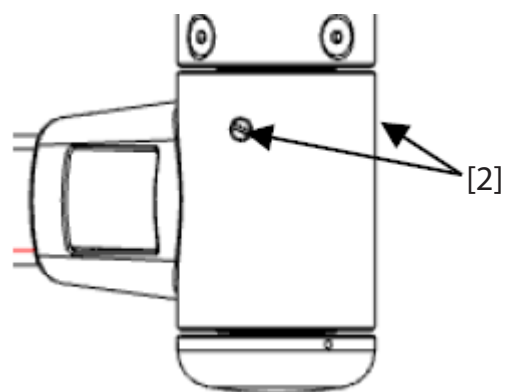
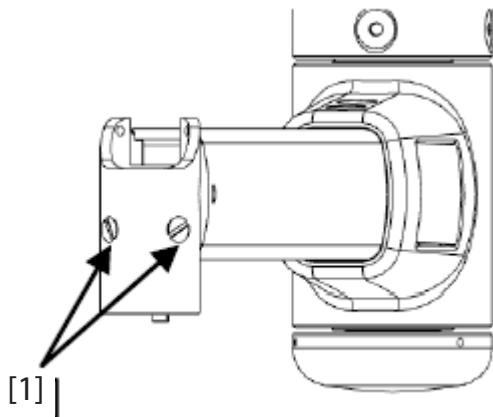
In order to conduct brake adjustments, the extension arm covers must be installed/removed. Observe the following instructions:

1. Firmly grasp the ends of the covers, pull them apart until they separate from one another and are free from the arm.
2. In order to install the covers, line up the tabs and slots and then press in.



In order to carry out brake adjustments, observe the following instructions:

1. Ensure that the adaptor or lighthead has been installed.
2. Locate the brake screw on the extension arm or core module.
3. On an extension arm, two brake screws are located on the end, under the covers [1].
4. On a core module, two brake screws [2] are located on the rear.
5. Using a large flat head screwdriver, tighten the brake screw to stiffen the lighthead's movement, or loosen the brake screw to loosen the lighthead's movement.



Installation: Adjustments

Installation/Removal of the Spring Arm

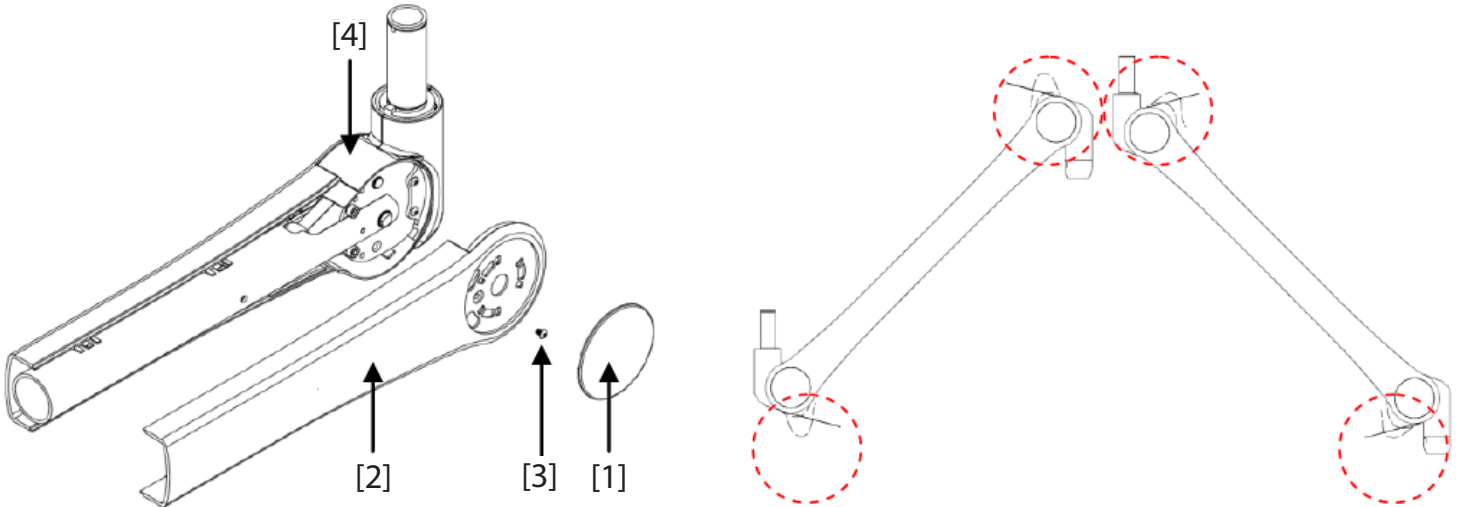
In order to access the spring arm to carry out load, parallel and vertical adjustments; as well as access for cable routing, you must be able to remove the plastic covers surrounding the spring arm.

Removal:

1. Remove all four plug covers [1] first by rotating each one counter clockwise until you hear a *click* and removing them from the spring arm main covers [2].
2. Remove two screws [3] from one main cover using a 2.5 mm Allen Key and pry the first cover off.
3. Remove the last two screws from the second main cover, then remove the final cover. Be sure not to damage the sliding flap covers [4] when removing the main covers.

Installation:

4. In order to install the plastic covers, carry out the preceding steps in reverse.
5. Do not attempt to install the main covers with the sliding cover flaps installed.
6. Leave the flap covers extended and raise the spring arm to its highest and lowest positions and slide each flap into its groove when all other plastic covers have been assembled.



Item	Description
1	Plug Covers
2	Spring Arm Main Covers
3	Screws
4	Sliding Flap Covers

Installation: Adjustments

Load Adjustment

Drifting

If a spring arm supports a load that is greater (or less) than the force of the spring, the spring arm will not stay perfectly in place because the weight of the load pulls the spring arm downward (or upward).

Adjustment of the spring inside the spring arm will allow the user to fine tune the spring arms ability to support a load. Load adjustments must also be carried out during regular maintenance.

Risk of Damage to the Spring

The spring arm supplied has a specific spring with a specific load range. Please refer to your product sticker attached to the arm for your exact load ranges. Not adhering to these load ranges may result in permanent damage to the spring, causing the arm to drift and prematurely fail. Replacement or service by a technician may be required.

Risk of Pinched Fingers

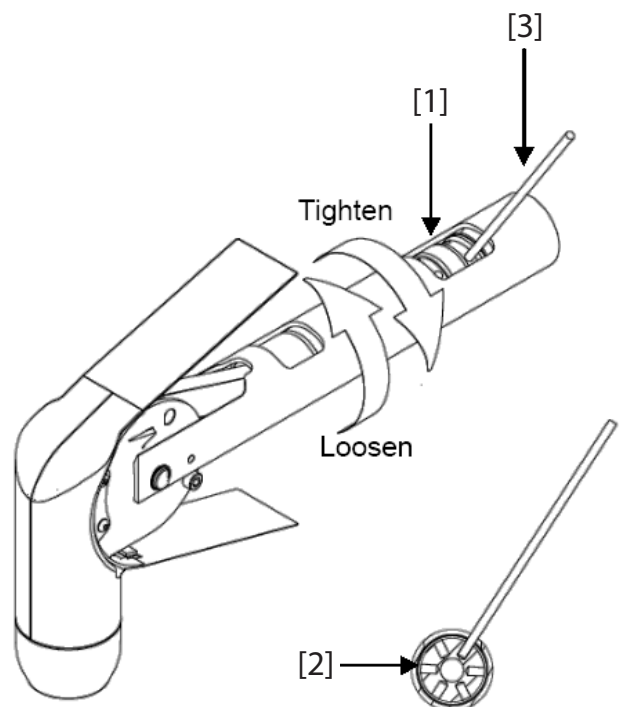
Fingers can be pinched or cut if inserted into the load adjustment window of the spring arm body. Exercise caution when making adjustments to components inside the spring arm body. Components inside will move when spring arm is moved up or down. Do not insert fingers or tools into the load adjustment window when the spring arm is moving.

In order to carry out load adjustments, observe the following instructions:

1. Ensure that the main covers of the spring arm have been removed and the lighthouse has been installed to the spring arm.

Note: While performing a load adjustment, it is recommended that you compensate for the removal of the covers by adding an equivalent to a 1 lbs weight (equal to one side cover being hung) at the end of the spring arm.

2. Locate the load adjustment window [1] in the spring arm body and the load adjustment nut [2]. (Depending on its first calibration, the spring arm may have to be moved up or down to bring the nut into view.)
3. Insert the adjustment tool [3] into one of the holes on the nut.



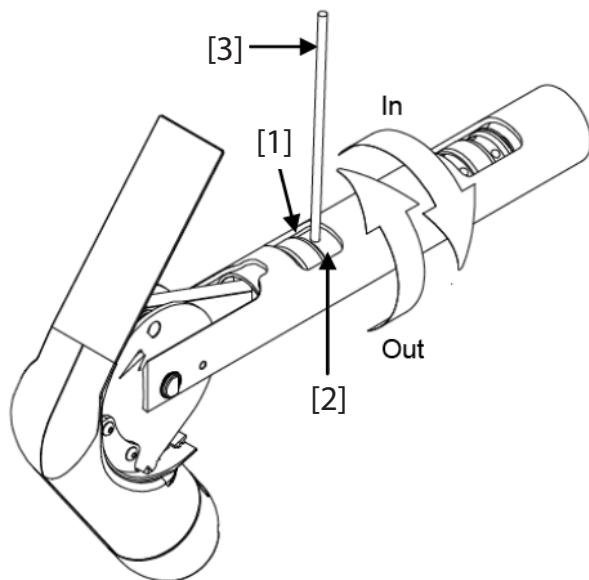
Installation: Adjustments

4. If the spring arm has a tendency to drift down, the spring tension is too low. Tighten the nut until the drift is eliminated and the spring arm supports the load evenly.
5. If the spring arm has a tendency to drift up, the spring tension is too high. Loosen the nut until the drift is eliminated and the spring arm supports the load evenly.
6. Replace the covers.

Parallel Adjustment

In order to carry out parallel adjustments:

1. Ensure that the main covers of the spring arm have been removed and the lighthouse has been installed to the spring arm.
2. Locate the parallel adjustment window [1] in the spring arm body and the parallel adjustment nut [2]. (Depending on its first calibration, the spring arm may have to be moved up or down to bring the nut into view.)
3. Insert the adjustment tool [3] into one of the holes on the nut.
4. Rotate the nut counter clockwise to bring the lighthouse end of the spring arm INWARD, towards the rest of the spring arm.
5. Rotate the nut clockwise to bring the lighthouse end of the spring arm OUTWARD, away from the rest of the spring arm.
6. Replace the covers.



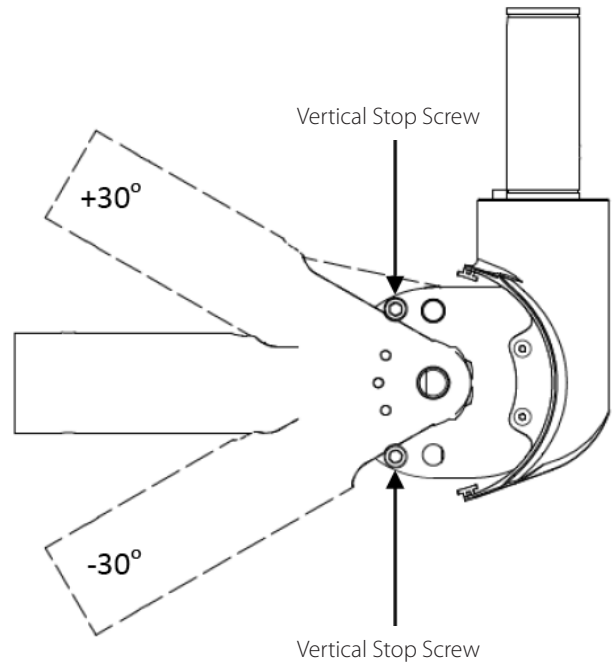
Item	Description
1	Parallel Adjustment Window
2	Parallel Adjustment Nut
3	Adjustment Tool

Installation: Adjustments

Vertical Adjustment

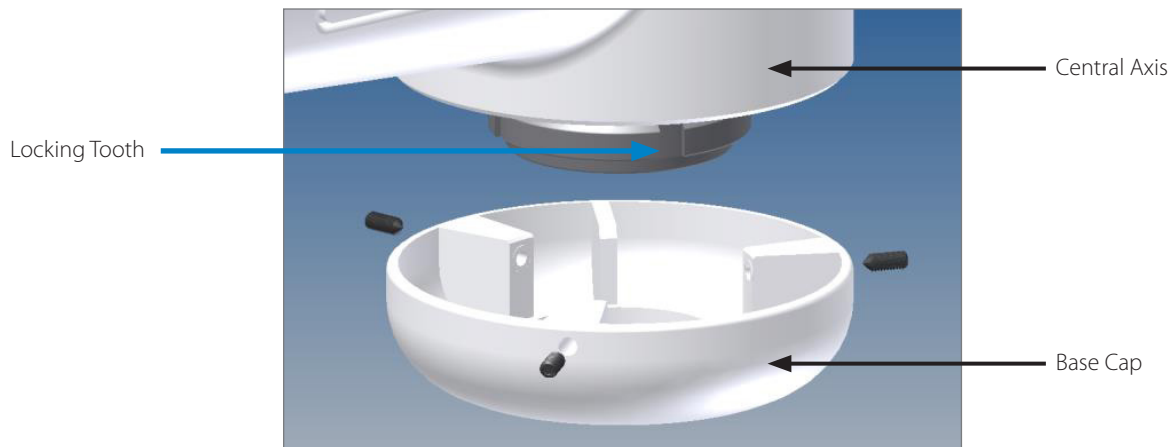
Vertical stop screws can be adjusted to avoid collision with a low ceiling or with other spring arms in operation above or below it.

1. Locate the vertical adjustment screws; the fixed end of the spring arm has four vertical adjustment screws.
2. OASYS spring arms contain a built-in 45° degree stop, which is enabled by unscrewing all four vertical stop screws with a 5 mm Allen key.
3. For angles between 0° and 30°, adjust the spring arm away from the stops, unscrew all of the vertical stop screws and replace them in the correct positions.
4. Replace the covers.



Installation: The Base Cap

1. Center the base cap at the bottom of the central axis over the retaining lock nut.
2. Align the locking tooth into one of the notches in the nut at the bottom of the central axis.
3. Press the cover up until it bottoms against the nut. Lightly tighten the three set screws equally, until the cover is snug and secure.



Installation: Terminal Box

Mounting the Terminal Box

There are two mounting options to installing the Terminal box:

1. Drop Tube Mount
2. Anchor Plate Bolt Mount (*Available upon request).

Option 1: Drop Tube Mount

Part Number	Description	Quantity
FS-SCR-SC-M4-22-SS	M4X0.7-22 Socket Cap Screw	2
FS-WSH-M4-SS	M4 Flat Washer	2

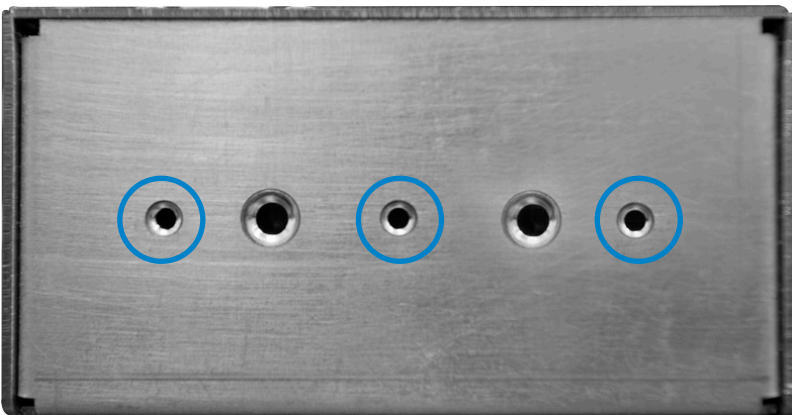


Figure 1

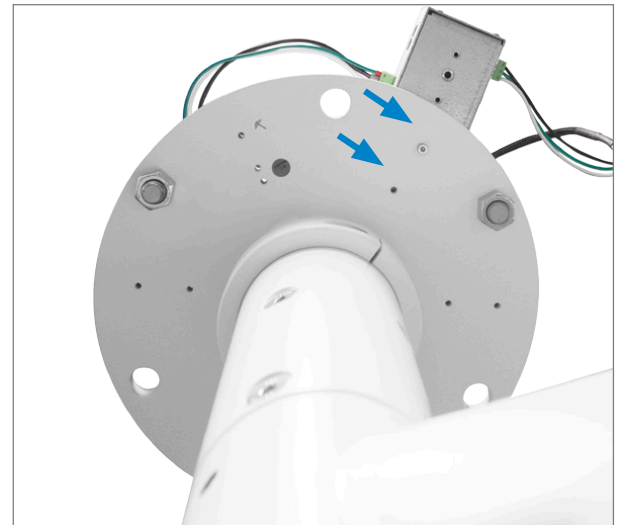


Figure 2

Installation Step	Description	Tool(s) Needed	Reference Figures(s)
1	Using two of the three M4 Pem Nuts (circled in Figure 1), fasten the Terminal Box on the top side of the Flanged Drop Tube using two M4 screws with washers.	3 mm Hex Drive	Figure 1, Figure 2
2	Connect all wire harnesses per configuration		Table 1
3	Use cable tie all loose wired together to a structure		

Installation: Terminal Box

Connecting the Terminal Box

The iCE30/iCE25 system comes with wire harnesses pre-installed on all related components. Plug in all the required components depending on your configuration.

Table 1

Configuration	24 VDC Power In	Light In	Wall Control	VGA to Camera Box	Camera In	Power Pass Through
iCE Series	✓	✓				
iCE Series with Wall Control	✓	✓	✓			
iCE Series Camera Ready/Camera Adder	✓	✓		✓	✓	
iCE Series with Wall Control and Camera	✓	✓	✓	✓	✓	
Spring Arm Camera	✓			✓	✓	✓

Terminal Box Usage

Terminal box is used to consolidate all connections into one place.

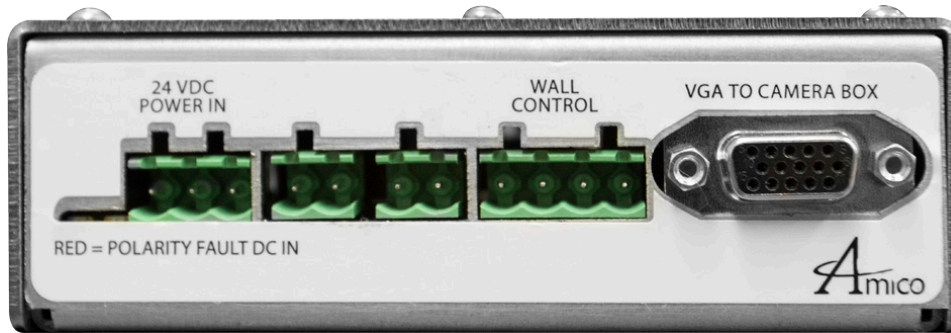


Figure 1

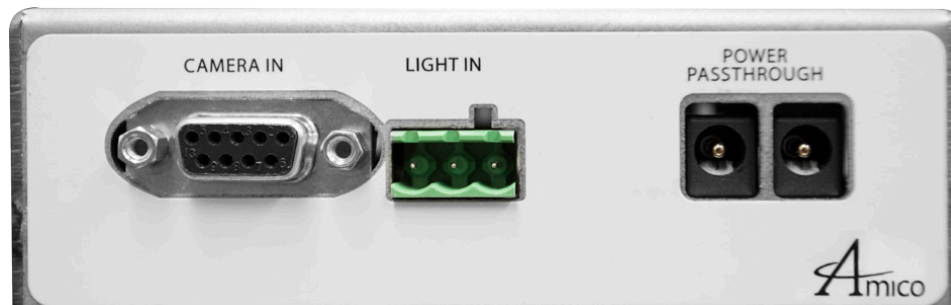


Figure 2






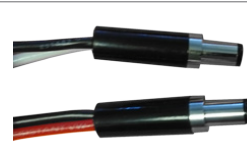
To insert the connectors into the terminal block, the required connections are as listed:

1. Light in
2. 24 VDC Power In
3. Wall Control
4. Camera In
5. Camera Box

Installation: Terminal Box

Prewired Harnesses

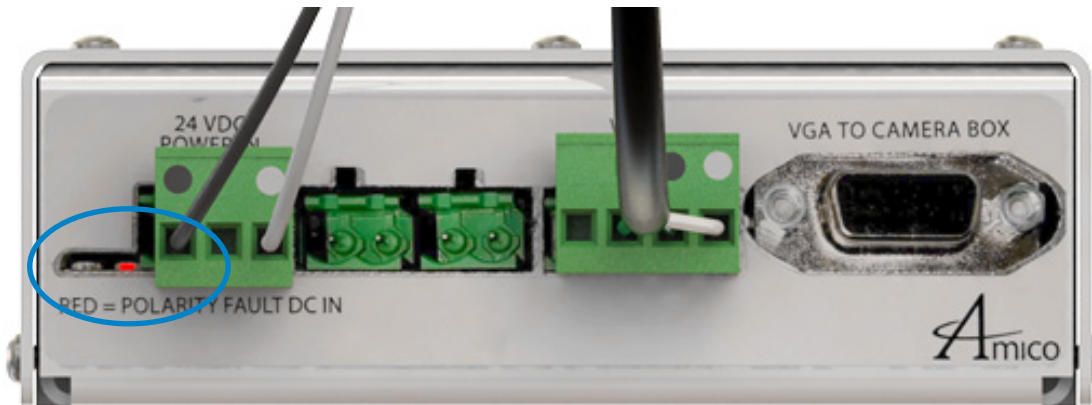
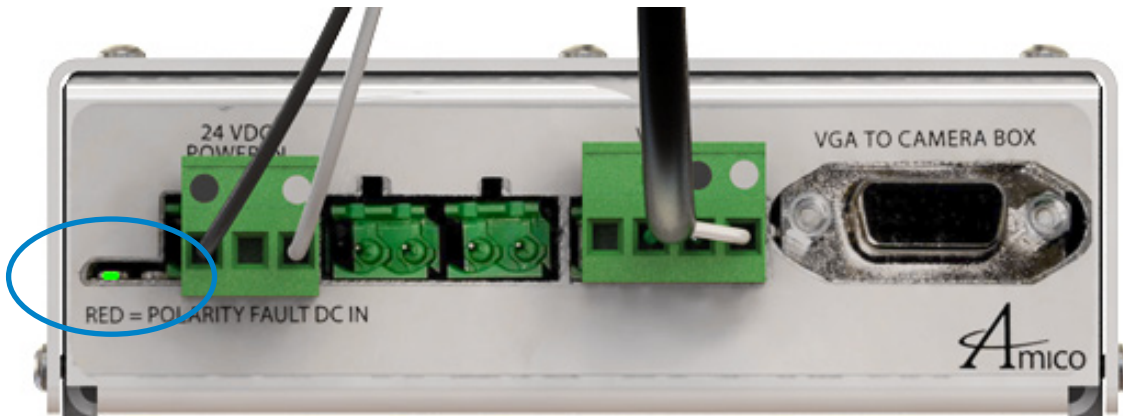
All harnesses are prewired on to all of the components needed for installation.

Prewired Harenesses	Contect To	Wiring Description	Reference Figure
iCE 30/iCE 25 Lamphhead	Light In	<ul style="list-style-type: none"> • White: +24 VDC • Black: Negative • Green (18 AWG): Commnication 	
iCE 30/iCE 25 Wall Control	Wall Control	<ul style="list-style-type: none"> • Blank • Green (18 AWG): Commnication • Black: Negative • White: +24 VDC 	
24 VDC Power Supply	24 VDC Power In	<ul style="list-style-type: none"> • Black : Negative • Green (12 AWG): Ground (if applicable) • White: +24 VDC 	
Camera Control Box Cable	VGA to Camera Box	<ul style="list-style-type: none"> • Standard SVGA-15 Cable • Included in camera adder and spring arm camera units 	
Camera Video/Data Cable	Camera In	<ul style="list-style-type: none"> • Custom DSUB9 Cable • Included in camera adder, camera ready and spring arm camera units 	
Camera Power Cable	Power Pass Through	<ul style="list-style-type: none"> • Custom Barrel Connectors • Positive Centre; +12VDC • Included in spring arm camera units 	

Installation: Terminal Box

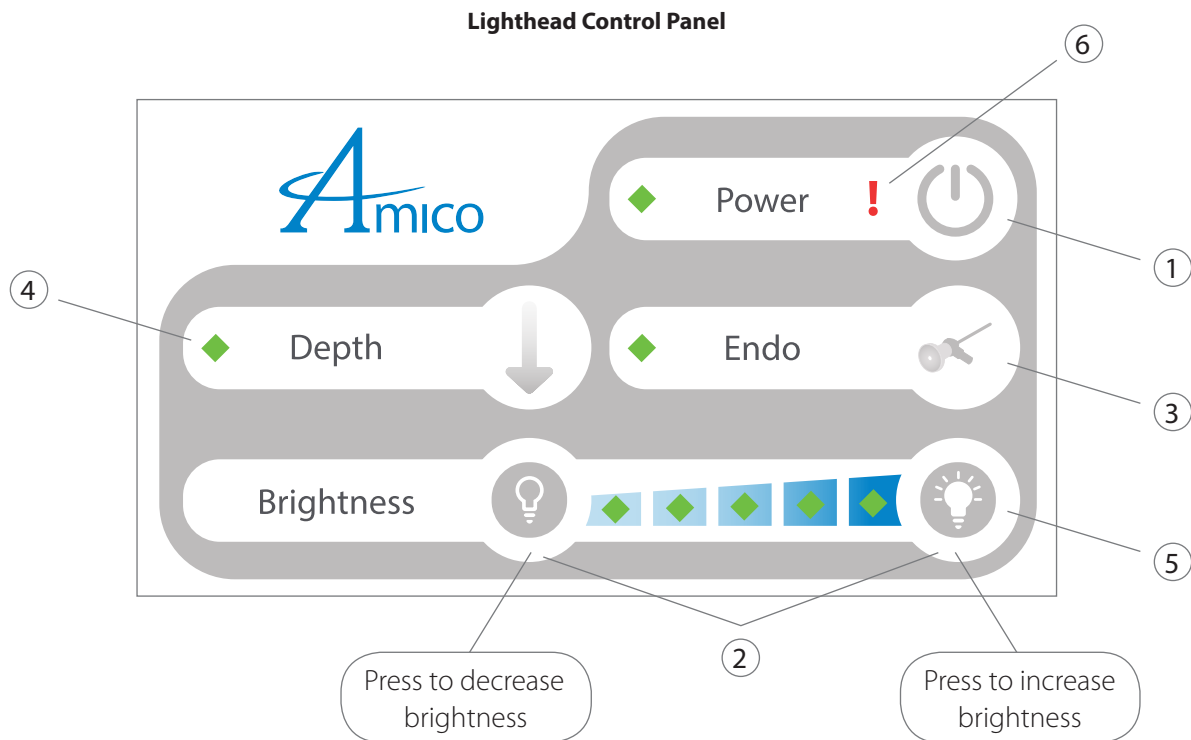
Initializing and Troubleshooting

When initializing, if the power supply is working properly, a green LED should turn on. If there is a fault with the power supply, a red LED would turn on instead.



Description of Issue	Steps to Repair
The red LED is on and nothing is working.	Carefully check the power supply's voltage; the voltage should be 24 VDC. If not, then the power supply will have to be changed.
The green LED is on but the lights do not power on.	Check that the connection of the "LIGHT IN" is properly plugged in. If it is, there might be a problem with the Light.
The green LED is on and the Lights work, the camera however does not turn on.	Check if the VGA connection and the DSUB9 connection are secure. Also check the VGA connection on the camera control box is secure.
The LED's on the power supply box do not turn on, and nothing is working.	Make sure the main power is on. If it is and the LED indicator is still off, turn off the main power again and double check your connections.

Operation: The Amico iCE LED Light



Lighthouse Control Panel

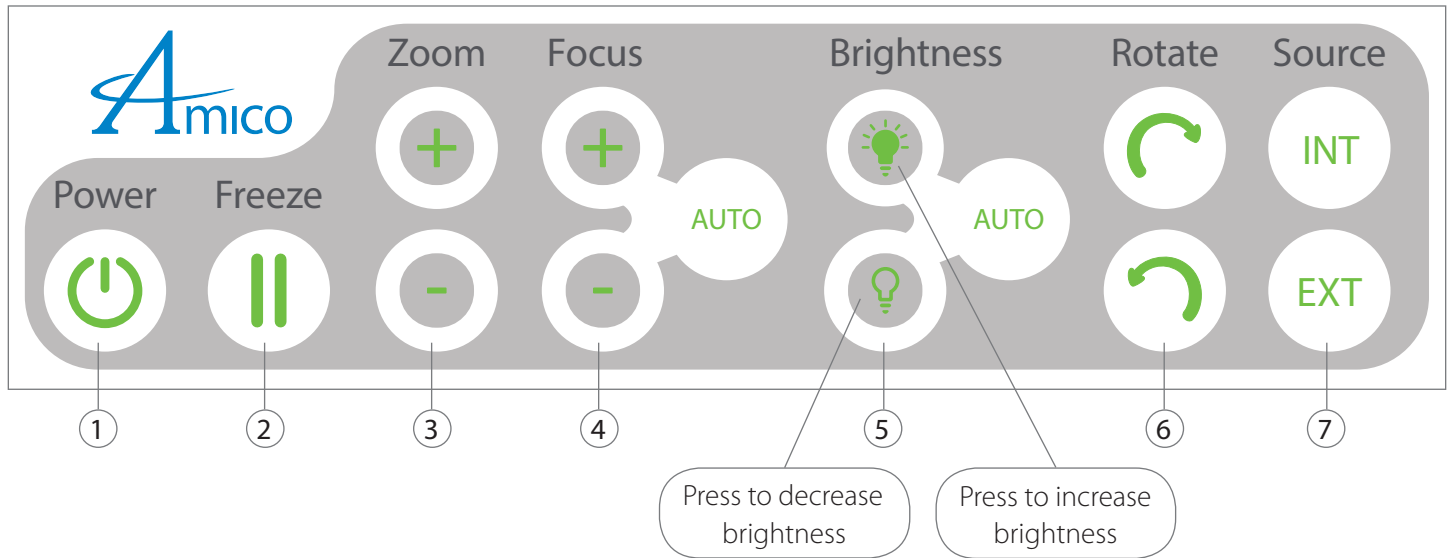
1. Turning the light On and Off: The LED will light up when the lamp is in the On position.
2. Adjusting the light brightness: The brightness can be adjusted to 50% to 100% (total of 5 steps).
3. Switching light to endo mode: To deactivate endo mode you can either press Endo button again or press any brightness buttons.
4. To activate the depth light press the Depth button: To deactivate the depth light press the Depth button again. This feature enables an optimum illumination of the wound field according to its texture and shadowing effects. This is very important in case of small and deep wound channels.
5. Brightness level indicators show the current brightness level of the LED.
6. A blinking red light indicates the failure of one of the fuses or the emergency by-pass switch has been activated.

Wall Control Panel for Light (Only if Purchased)

- The Wall Control Panel will have the exact same features as the Lighthouse Control Panel. The Wall Control Panel is a feature provided at an additional cost.
- There is a two second delay in the Power button of the Wall Control. If the light does not turn on, but the LED indicator turns on, you will have to press Wall Control, wait 2 seconds, and turn it back on.

Operation : The Amico iCE LED Light

Camera Control Box



Emergency Shut Down

If the Down Brightness button on the Wall Control is held, the lighthouse would commence emergency shutdown.

Camera Control Box (Camera Adder Only)

1. Pressing the Power button turns the camera On and Off.
2. To freeze the image please press Freeze button. Press the button again to continue viewing with camera.
3. Zoom in and out as required with these buttons.
4. Adjust the Focus feature to focus on the required area. The Auto Focus feature is initiated automatically on startup for user convenience (the Auto button will light up for easy indication). To deactivate auto focus, press either of the two Focus buttons.
5. Adjusting the brightness (camera iris) of the camera as required. The Auto Brightness feature is initiated automatically on startup for user convenience (the Auto button will light up for easy indication). To deactivate auto brightness press either of the two Brightness buttons.
6. Rotate camera up to 270° by using rotate function.
7. The internal source will be automatically pre-selected when camera is turned on. Press the Ext button to use other external video sources, to be displayed on the connected monitor.

Operation: The Amico iCE LED Light

Emergency Bypass Switch

1. The Amico iCE Series LED Lights come equipped with an emergency bypass switch in the case a controller board or lighthouse control switch fails.
2. The emergency bypass switch is located at the lighthouse and yoke joint (pictured below).
3. By activating this switch, power is directed straight to the LED pods providing the maximum LUX of the respective lighthouse. **Note:** The maximum brightness is only available if all the LED pods are operational.



Emergency Bypass Switch

Beam Size Adjustment

1. Amico iCE Series LED Lights come with a handle for adjusting the beams. By turning the handle, you can either increase or decrease the beam size. This creates a beam ranging from 7.6" - 12" (193 mm - 305 mm).

Use the Center Handle or the In-Light Camera to Decrease or Expand Beams



Beam Focused in to Form a 7.6" (193 mm) Diameter Light Field

Operation: The Amico iCE LED Light



Expanded beam size

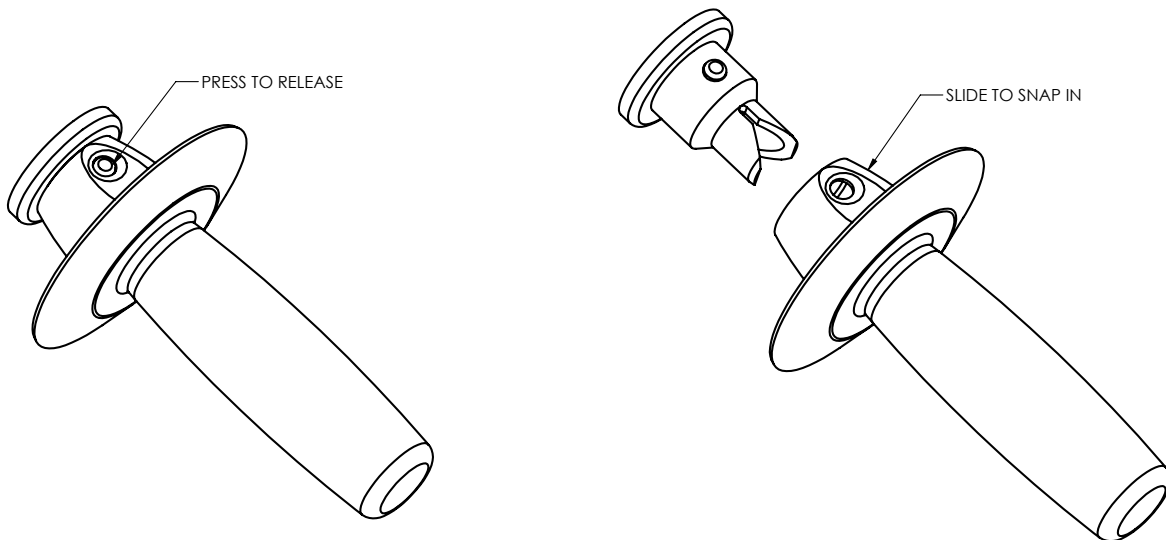


Operation: Cleaning the Amico iCE LED Light

Non-Sterilizable Handle (Plastic/Aluminum)

1. At delivery, the lamp is equipped with an aluminum or plastic non-sterilizable handle. This handle must not be sterilized as it will cause damage to the handle.
2. The handles will be supplied with disposable, sterile covers. Handle disposable covers often become unsterile during an operation. Therefore always keep extra disposable handle covers available for exchange.
3. An in-light camera may be purchased as an accessory to the lamp. In this case, you can remove the handle using the below steps:
 - To remove, press the release button and pull the handle away from the light.
 - To attach, simply insert the handle into the handle adapter until a "click" is heard.

Disconnecting and Reconnecting Sterilizable Handle



Operation: Cleaning the Amico iCE LED Light

Lamp Housing, Protective Lens and Support System

1. The Amico lamp system has a high-quality surface which can be cleaned with conventional cleaning agents.
 - Virox Accel TB
 - Virox 5
 - Dispatch Hospital Cleaner disinfectant towels with Bleach
 - Clorox Healthcare Professional Disinfecting Bleach Wipes
 - Sani-cloth super germicidal disposable wipes
 - Viroidin-X
2. The lens system (front glass) is made of a high-quality clear acrylic.
 - a. Pay attention to the following during cleaning:
 - ii. Never wipe over the lens system with a dry cloth (always clean with a wet/damp cloth).
 - iii. Do not use disinfectants with any alcohol.
 - iv. In addition the following disinfectants may be used to clean the lens.
 - Virox Accel TB (Accelerated Hydrogen Peroxide 0.5%)
 - Virox 5
 - Dispatch Hospital Cleaner disinfectant towels with Bleach
 - Clorox Healthcare Professional Disinfecting Bleach Wipes
 - v. Wipe the lens system after cleaning with an anti-static, non-fluffy cloth.

* Always follow instructions outlined by the cleaning agent manufacturer. Do not deviate without approval from Manufacturer.

** Do not exceed the recommended cleaning time outlined by the manufacturer

*** Always wipe parts with anti-static, non-fluffy cloth to remove excess cleaning agent

**** Do NOT use any agents not listed above, as it may result in premature failure of product

Maintenance: Amico iCE LED Lights

1. Amico iCE Series LED Lights are supplied with brakes on the suspension fixture and on the lamp housing. If necessary, adjust these brakes after installation.
2. If the lamp is difficult to move, or if it does not keep its position, the brake forces needs to be adjusted.
3. Preventive maintenance of the light should be done every two years. This includes a technical and mechanical check-up.
4. In order to keep the system working properly throughout its lifespan, we recommend that the hinges should be greased once a year with acid-free grease.
5. When adjusting the brakes or the hinges at the ceiling attachment, please refer to Installing the Central Axis Arms on page 20. **Attention** - Before dismounting the lamp, set the height adjustment of the spring arm to the horizontal position.

Maintenance: OASYS Spring Arm

Bi-annual inspection (to be completed by qualified technicians):

1. The spring arm and lighthead moves smoothly without any noise or grinding.
2. Locking key thickness must not be less than 0.060" (1.52 mm) thick and 0.250" (6.35 mm) deep at any point.
3. Ensure that the spring arm does not have any cracks or damage to the paint or plastic covers.
4. The spring arm should not drift when loaded.
5. Lubricate the moving joints with OASYS approved grease.

Maintenance: OASYS Spring Arm

Annual Inspection (to be completed by qualified technicians):

1. All labels are attached and are legible.
2. All spring arm components are not deformed.
3. All moving parts are free from squeaking and are not loose.
4. Rotational stops are working correctly.
5. All components are free from collision damage.
6. Welds are free from cracks.
7. Load, parallel, brake and vertical adjustments are conducted to ensure the spring arm is performing correctly. Refer to section, Installation: Adjustments, pg. 34-38.

Troubleshooting

Should problems arise with the use of the Amico Series iCE LED Lights, review the following chart. Find the fault and complete the recommended solution. If the fault is not found and or/the solution does not correct the problem contact Amico Clinical Solutions Corp.

Fault	Recommended Solution
The emergency red light indicator is "On"	<ul style="list-style-type: none">• Switch "Off" the emergency switch to cancel Emergency By-Pass mode• If one or two LED Pods stop working, the fuse may be blown and it may need to be replaced by a qualified technician
A button on the main mylar controller has stopped functioning	<ul style="list-style-type: none">• The mylar controller may need to be replaced
A button on the wall mylar controller has stopped functioning	<ul style="list-style-type: none">• The wall mylar controller may need to be replaced
Lighthouse is drifting	<ul style="list-style-type: none">• Tighten up the exposed screws on the yokes or the central axis using a 3/8" flat head screwdriver.
Glass is dirty	<ul style="list-style-type: none">• Follow "Operation: Cleaning the Amico iCE LED Light"
An LED is not functioning	<ul style="list-style-type: none">• The pod needs to be replaced by a qualified technician

Environmental Conditions

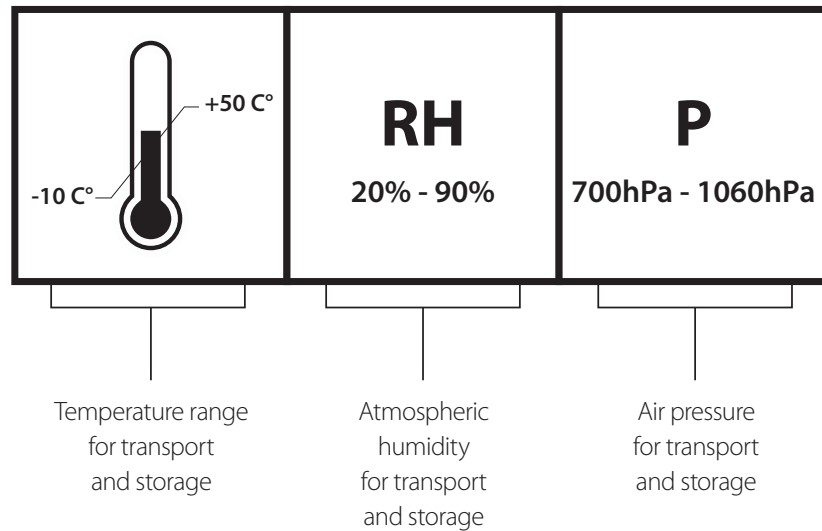
Operation

	MIN	MAX
Temperature	+10°C	+40°C
Relative atmospheric humidity	30%	75%
Air pressure	700 hPa	1060 hPa

Transport / Storage

	MIN	MAX
Temperature	-10°C	+50°C
Relative atmospheric humidity	20%	90%
Air pressure	700 hPa	1060 hPa

References on the Package



Technical Data for OASYS Central Axis and Spring Arms

Net Weights

Structural Ceiling Plate with 6 Tubes and 6 Threaded Rods	75 lbs
Interface Plate	35 lbs
Flanged Ceiling Tube (weight per meter)	38.5 lbs
Ceiling Cover Disc and Retainer	4.5 lbs
Central Axis with Spindle 1 Arm / 2 Arm	37 lbs / 39 lbs
Central Axis with Spindle 3 Arm / 4 Arm	42 lbs/ 49 lbs
OASYS 2001 Spring Arm	6.8 kg (15 lbs)
OASYS 3001 Spring Arm	7.7 kg (17 lbs)

Maximum Total Service Load

Central Axis 4 Arm

(4 Extension Arms 28", 34", 40", 46")	565 lbs
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Central Axis 3 Arm

(3 Extension Arms 28", 34", 40")	463 lbs
(3 Extension Arms 34", 40", 46")	465 lbs

Central Axis 2 Arm

(2 Extension Arms 28", 34")	371 lbs
(2 Extension Arms 34", 40")	373 lbs
(2 Extension Arms 40", 46")	375 lbs

Central Axis 1 Arm

(1 Extension Arm 28")	269 lbs
(1 Extension Arm 34")	271 lbs
(1 Extension Arm 40")	273 lbs
(1 Extension Arm 46")	275 lbs

Maximum Service Load of the Standard Spring Arms

OASYS 2001 Spring Arm	46 lbs
OASYS 3001 Spring Arm	66 lbs

Electrical Data

Amico iCE Series LED System Ratings

Maximum Voltage	100-240 VAC
Nominal Frequency	50-60 Hz
Maximum Current	4.0-2.0 A

Brakes

Extension Arm	Friction brakes
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Noise Level

Sound Energy Levels	>30 db(A) (EN ISO 3744) are not exceeded
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Operation

Hand Forces	< 2 lbs
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Technical Data for OASYS Central Axis and Spring Arms

Classification

IEC 60601-1, UL 60601-1, CAN/CSA-C22.2 No. 601.1-M90

Device Protection – Class I

Protection Type – enclosed design ordinary appliance (enclosed unit with no protection against ingress of water)

Applicable Standards

UL 60601-1:2003

Approval for Standard Version

The pendant system is tested under UL 60601-1:2003

EC Conformity

The central axis complies with the provisions of directive 93/42/EEC (medical devices directives) and directive 89/336/EEC (EMC directive)

The Pendant System is Only Approved for the Connection of the Following Devices

- The central axis is only approved for the connection of medical end devices such as monitors, operating and examination lamps as well as devices for diagnostics, treatment or surgical interventions bearing the CE mark.
- When these devices are attached to the central axis, the distributor must submit a declaration as specified by article 12 of directive 93/42/EEC (Medical Devices Directive).
- When other devices are attached, a new conformity assessment must be drawn up.

Combination with Other Medical Devices

- The central axis is equipped with end devices (e.g. monitors) from other manufacturers.
- Please refer to the instructions supplied by the respective manufacturer for the necessary information on installing the end device.

Electromagnetic Compliance Data for iCE Series

Guidance and Manufacturer's Declaration – Electromagnetic Emissions

The equipment or system is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment or system should assure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF Emissions CISPR 11	Group 1	The equipment or system uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class A	The equipment or system is suitable for use in all establishments other than domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations / Flicker Emissions IEC 61000-3-3	Complies	

Electromagnetic Compliance Data for iCE Series

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The equipment or system is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment or system should assure that it is used in such an environment.


Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical Fast Transient/Burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±1 kV for power supply lines ±0.250 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, Short Interruptions and Voltage Variations on Power Supply Input Lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the equipment or system requires continued operation during power mains interruptions, it is recommended that the equipment or system be powered from an uninterruptible power supply or a battery.
Power Frequency (50/60 Hz) Magnetic Field IEC 61000-4-8	3 A / m	Not Applicable	Power frequency magnetic fields should be at levels characteristic of a typical commercial or hospital environment.

NOTE: UT is the A.C. mains voltage prior to application of the test level.

Electromagnetic Compliance Data for iCE Series

Guidance and Manufacturer’s Declaration – Electromagnetic Immunity

The ME EQUIPMENT or ME SYSTEM is intended for use in the electromagnetic environment specified below. The customer or the user of the ME EQUIPMENT or ME SYSTEM should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the ME EQUIPMENT or ME SYSTEM, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance: $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2,5 GHz</p> <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p>
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	<p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey (a) should be less than the compliance level in each frequency range (b)</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones, land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be accurately predicted. To assess the electromagnetic environment for fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the ME EQUIPMENT or ME SYSTEM is used exceeds the applicable RF compliance level above, the ME EQUIPMENT or ME SYSTEM should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the ME EQUIPMENT or ME SYSTEM.
- b. Over the frequency range of 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Electromagnetic Compliance Data for iCE Series

Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the Equipment or System

The equipment or system is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the equipment or system can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the equipment or system as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d=1.2\sqrt{P}$	$d=1.2\sqrt{P}$	$d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance (**d**) in metres (**m**) can be estimated using the equation applicable to the frequency of the transmitter, where (**P**) is the maximum output power rating of the transmitter in watts (**W**) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Disposal

1. The surgical lamp doesn't contain any dangerous goods.
2. The components of the surgical lamp should be properly disposed of at the end of its shelf-life.
3. Make sure that the materials are carefully separated.
4. The electrical conducting boards should be submitted to an appropriate recycling facility.
5. The rest of the components should be disposed of in methods applicable to the contained materials.



Warranty Policy - Surgical Lights

Amico Clinical Solutions Corp. will warrant its manufactured equipment for up to five (5) years from date of installation. Amico Clinical Solutions Corp.'s warranty will not cover any disposable, sterilizable or single use products.

iCE series surgical lamp heads are warrantied to be free of defects for five (5) years from date of installation. During the first twelve (12) months after installation, Amico Clinical Solutions Corp. will, at its own cost, repair and/or replace any part on site or at the factory which has proven to be defective. After the first twelve (12) months, Amico Clinical Solutions Corp. will only provide replacement parts; shipping and installation costs will be borne by the customer.

Monitors are warrantied as per the warranty provided by the monitor manufacturer selected by the customer or Amico Clinical Solutions Corp.

Monitor holders are warrantied to be free of defects for five (5) years from date of installation. During the first twelve (12) months after installation, Amico Clinical Solutions Corp. will, at its own cost, repair and/or replace any part on site or at the factory which has proven to be defective. After the first twelve (12) months, Amico Clinical Solutions Corp. will only provide replacement parts; shipping and installation costs will be borne by the customer.

HD Cameras, in-light or spring arm mounted, are warrantied for a period of twelve (12) months from date of installation. During this period, Amico Clinical Solutions Corp. will, at its own cost, repair and/or replace any part on site or at the factory which has proven to be defective.

Suspension systems for the surgical lamps and monitor holders are warrantied for a period of twelve (12) months from date of installation. During this period Amico Clinical Solutions Corp. will, at its own cost, repair and/or replace any part on site or at the factory which has proven to be defective.

This warranty is valid only when the equipment has been properly installed as outlined in the Amico Clinical Solutions' Corp. specifications. The validity of this warranty also depends on the proper usage and timely servicing of our equipment according to Amico Clinical Solutions Corp.'s recommendations. Amico Clinical Solutions' Corp. does not cover damages as a result of shipment failures, accidents, misuse, abuse, neglect, mishandling, alteration, misapplication or damages which may be attributed to acts of God.

Amico Clinical Solutions Corp. shall not be liable for incidental or consequential damages resulting from the use/misuse of the equipment.

All claims for warranty must first be approved by Amico Clinical Solutions Corp.'s service department at: acs-service@amico.com or 1.877.462.6426. A valid Return Goods Authorization (RGA) number must be obtained from Amico Clinical Solution Corp. prior to commencement of any service work. Warranty work which has not been pre-authorized by Amico Clinical Solutions Corp. will not be reimbursed.



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