

**APPLICATION**

The Amsco SQ240 Series Centra Mounted Surgical Light is a sealed lighting system. The system provides cool, shadow reduced, color corrected illumination appropriate for surgical procedures. SQ240 lighting system is designed for installation in most surgical suite ceilings, including rooms with forced air circulation.

**DESCRIPTION**

The SQ240 lighting system consists of 24" (610 mm) diameter lighthead(s) and a center-mounted suspension system with continuous 360° rotational positioning. The suspension system can support single, dual, and triple configurations, plus optional accessories for future lightheads or audiovisual systems.

Wall mounted, electronic Variable Intensity Controllers are available in single or dual control arrangements. One control is required for each lighthead used in the system.

**STANDARDS**

Lighting fixture meets the applicable requirements of the following standards and/or regulations and carries the appropriate symbol:

- **EN 55011: Group I, Class B, Emissions Testing**, as certified by ETL Testing Laboratories, Inc.
- **EN 60601-1: 1993, Amendment 2, 1995, Electrical Safety**, as certified by ETL Testing Laboratories, Inc.



(Typical only - some details may vary.)

- **FDA Good Manufacturing Practices Regulations 21CFR820 for Medical Devices**
- **IEC 601-1-2: 1993, Electromagnetic Compatibility**, as certified by ETL Testing Laboratories, Inc.
- **Medical Device Directive (93/42/EEC)**
- **Standard CSA-C22.2 No.601.1-M90**, Standard for Electro-Medical Equipment, as certified by ETL Testing Laboratories, Inc.
- **Underwriters Laboratories (UL) Standard 2601-1 - 1st Ed.**, as certified by ETL Testing Laboratories, Inc.

**FEATURES**

**26" (660 mm) deep, pre-focused depth of field**, with an 18" (457 mm) cylinder of light, provides superior deep cavity illumination.

**Patented optical system** consists of a single light source, large continuous reflector and refractive lens system (U.S. Patent No. 5,001,616).

Corrected, naturally appearing color is provided by the SQ240 lighting system which has a color rendering index of 92 and a color temperature of 4400° Kelvin. The SQ240 light utilizes a 220 Watt, 22 Volt tungsten **halogen lamp**.

**The Selections Checked Below Apply To This Equipment**

**LIGHTING SYSTEM CONFIGURATION**

- One 36" (914 mm) Arm; One Lighthead
- Two 36" (914 mm) Arms; Two Lightheads
- One 24" (610 mm) Arm and One 36" (914 mm) Arm; Two Lightheads
- Three 36" (914 mm) Arms; Three Lightheads
- One 36" (914 mm) Arm with Hub Spacer \*; One Lighthead
- Two 36" (914 mm) Arms with Hub Spacer \*; Two Lightheads
- One 36" (914 mm) Arm with Audiovisual Arm; One Lighthead
- Two 36" (914 mm) Arms with Audiovisual Arm; Two Lightheads
- One 36" (914 mm) Support Arm only
- Two 36" (914 mm) Support Arms only
- Three 36" (914 mm) Support Arms only
- One Lighthead only (without Carriage)

**SQ INTENSITY CONTROLLER**

**MOUNTING**

- Surface
- Recessed

**VOLTAGE**

- 100 VAC
- 120 VAC
- 220 VAC

**CONTROLLER ARRANGEMENT**

- Single
- Dual
- Single & Dual
- Two Duals

**ACCESSORIES**

- H-Frame
- Additional Sterilizable Handle

**OPTIONS**

- Seismic Design
- Battery Backup

\* **FUTURE OPTIONS, Specify if hub spacer is for:**

- Lighthead
- Audiovisual Arm

Item \_\_\_\_\_

Location(s) \_\_\_\_\_

Illumination intensity is adjustable for each lighthead, up to approximately 12,000 footcandles (129,170 lux).

Lighthead efficiently dissipates heat away from the surgical field, enhancing patient safety and surgical team comfort.

Operator can adjust the lighthead position and pattern during a procedure by using the **sterilizable handle**. Additionally, each lighthead is equipped with non-sterile grasping surfaces on the outer perimeter of the lighthead.

**Automatic lamp changeover system** assures continuous light. Two lamps are supplied with each lighthead. If the primary lamp fails, the secondary lamp automatically assumes the primary lamp's position. Replacing a failed lamp requires no special tools.

**Lightweight suspension system** is designed for limitless and continuous positioning without binding or drifting. Low force is required to position the lighthead. Suspension system also features a special low-height lighthead position, 29-1/2" (749 mm) from the floor, allowing for low lateral illumination.

Suspension system provides continuous rotation around central hub; continuous rotation about horizontal suspension arm; and pivoting at suspension fork 15° up, and 90° down until vertical and horizontal suspension tubes describe a straight line (i.e., full movement up and down through 105°).

**Variable Intensity Controller (VIC)** produces DC voltage to the control knob, which provides five discrete intensity levels of illumination and ON/OFF settings. Each lighthead is matched to its respective controller by an easy to read number, furnished for attachment to the control knob and duplicated on the suspension system knuckle.

Controller operates on 50/60 Hz AC, single phase service. Controllers are available with the following ratings: 100 VAC, 110-130 VAC, 220-250 VAC. Current leakage is limited to less than 100 microamps per VIC.

## CONSTRUCTION

The system reflector is thin-film coated for color correction and heat elimination.

Lighthead reflector is thin-film coated for color correction and heat dissipation.

Lens is formed of optical grade acrylic plastic and molded with a grid of pre-focused optical facets. This grid focuses light in a predetermined pattern onto the target surface. The lens is sealed into the lighthead to prevent the accumulation of dust on system optics.

Each fixture includes a central hub and variations of one, two, or three lighthead/suspension arm assemblies. Each lighthead assembly is suspended from a horizontal arm which rotates around the central hub. Horizontal arm is either 24 or 36" (610 or 914 mm) long.

The rotary suspension shaft of the surgical lighthead moves on tapered roller bearings at one end of the horizontal arm. Shaft is bearing-mounted and allows 360° rotation of the lighthead/suspension arm assembly. The arm, affixed to a central roller-bearing housing, is supported by a steel mounting plate. The bearing housing at each end features a pivot and commutators to (1) supply electrical power to the lamp, and (2) provide 310° rotation of the lighthead in the yoke and 360° non-stop rotation elsewhere in the suspension system. Pivots include an adjustable brake which prevents the lighthead from drifting.

## OPTION

The **battery backup** factory option allows the lighting system to automatically switch to the hospital's 24 Volt DC

emergency power supply in the event of an AC power interruption. One or two relays (depending on whether the fixture uses a single or dual controller) maintain the AC circuit as long as AC service is constant. If AC service is interrupted, relay(s) changes state, switching the supply to the hospital's emergency DC power supply. Emergency DC power supply is provided by others.

## INSTALLATION

Hardware is furnished for securing the mounting plate to the studs of the above-ceiling suspension supports (extension bolts and suspension supports are not supplied by STERIS). An epoxy-coated, spun aluminum canopy is also furnished to conceal the ceiling plate; a vinyl gasket seals the gap between the canopy and ceiling.

Variable Intensity Controller can be recess or surface mounted. Electrical connections are not supplied by STERIS.

## ACCESSORY

**H-Frame** (a support structure accessory) allows two, parallel mounted tracks to be used as a mounting base for a Centra hub. If the above-ceiling support structure allows, the H-Frame mounted centra hub can be used to support single, dual or triple centra-mounted lightheads.

## PREVENTIVE MAINTENANCE

A global network of skilled service specialists can provide periodic inspections and adjustments to assure low-cost peak performance. STERIS representatives can provide information regarding Annual Maintenance Agreements.

ENGINEERING DATA			
Lighthead	Shipping Wt.	Mounted Wt.	Moment Force
One Lighthead and Support Arm	270 lbs (123 kg)	148 lbs (67 kg)	350 lb-ft (48 m-kg)
Two Lightheads and Support Arms	470 lbs (213 kg)	250 lbs (113 kg)	700 lb-ft (97 m-kg)
Three Lightheads and Support Arms	570 lbs (259 kg)	360 lbs (163 kg)	1200 lb-ft (166 m-kg)
One Lighthead and Support Arm with Hub Spacer	369 lbs (167 kg)	250 lbs (113 kg)	700 lb-ft (97 m-kg)
Two Lightheads and Support Arms with Hub Spacer	460 lbs (209 kg)	360 lbs (163 kg)	1200 lb-ft (166 m-kg)

**NOTES**

Reference actual equipment drawings for installation requirements.

1. Ceiling structure must adequately support surgical light system which:
  - a. weighs and exerts a moment as indicated in Engineering Data table
  - b. when above loads are applied, ceiling structure must prevent the ceiling plate from tipping more than 1/16" per foot (5.25 mm per meter).
2. Leveling nuts compensate for ceiling irregularities (nuts for metric installation not by STERIS).
3. Fixture must be grounded. Adequate ground must be provided by running a separate ground wire to ceiling structure.
4. Allow extension bolts to extend 2-1/2" ± 1/8" (63.5 mm ± 3.2 mm)

through finished ceiling. Extension bolts to be 5/8-11 (1/2" required on 6-bolt pattern) UNC Class 2B thread SAE Grade 2 steel bolt material or better (not by STERIS). DO NOT use toggle bolts.

5. This light is furnished for maximum ceiling height. For lower ceilings, the vertical suspension tube must be shortened (saw cut) to maintain the 79 ± 1/4" (2007 ± 6.3 mm) hanging height.
6. Outlet box to be positioned flush with finished ceiling (not by STERIS).
7. Power Requirement: SQ Variable Intensity Controller (VIC). Refer to equipment drawings for specifics.
8. STERIS recommends general illumination in operating room of 200 footcandles (2152 lux).
9. Explosion Hazard - Do not use in the presence of flammable anesthetics.

**UTILITY REQUIREMENTS**

**Electricity**

100VAC, 50/60 Hz, 4A (Single Controller; 8A (Dual controller)

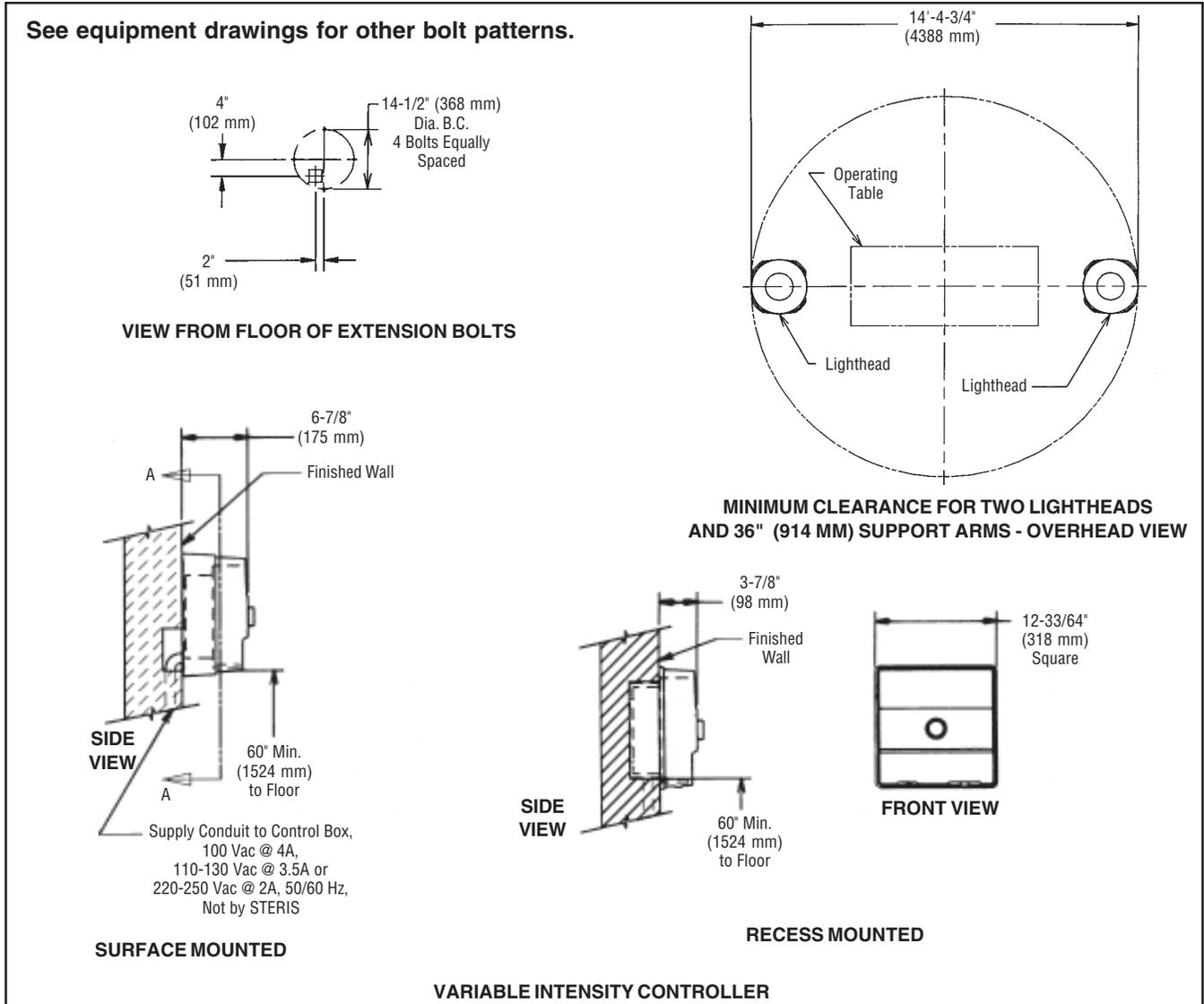
110-130VAC, 50/60 Hz, 3.5A (Single Controller; 7A (Dual Controller)

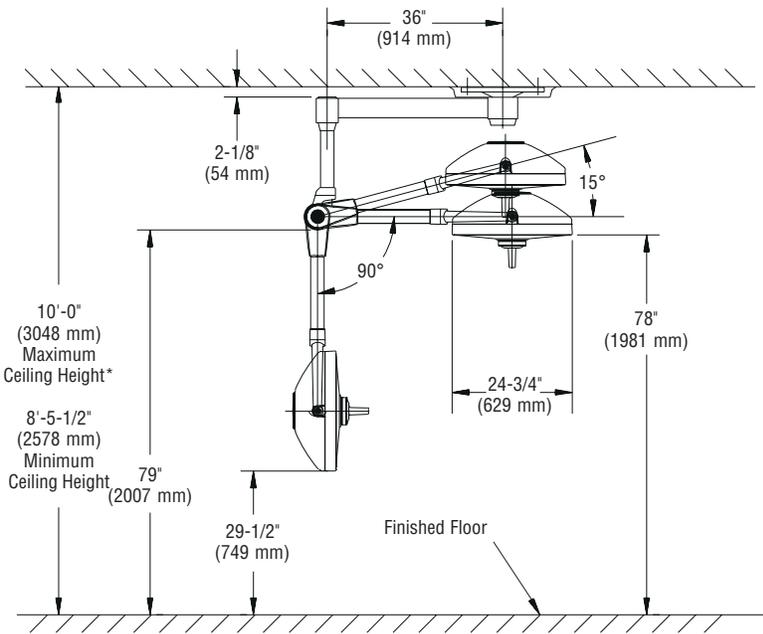
220-250VAC, 50/60 Hz, 2A (Single Controller; 4A (Dual Controller)

... CHECK LOCAL CODES ...

<p><b>Manufactured Exclusively by STERIS Corporation Montgomery, AL</b></p>	<p><b>ISO 9001 EN 46001 ISO 13485 Certified</b></p>
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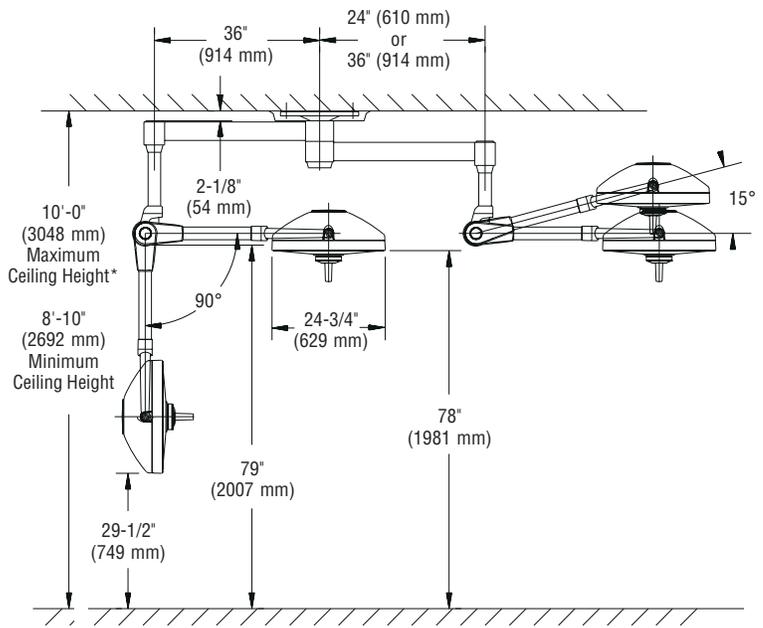
**The base language of this document is ENGLISH. Any translations must be made from the base language document.**





**SQ240 SINGLE LIGHTING FIXTURE**

\* Finished ceiling heights exceeding 10'0" (3048 mm) but no greater than 12'0" (3657.6 mm) require Special Sales Order.



**SQ240 DUAL LIGHTING FIXTURE**

NOTE: Because of STERIS's continuing program of research and development, all specifications and descriptions are subject to change without notice. Obtain certified drawings for design and installation.

**For further information, please contact:**



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