



CHROMOPHARE[®]

E- and F-Generation Surgical Lights,
VPA[™], and ChromoView[®] Products

Pre-Install Manual

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CHROMOPHARE® E- and F-Generation Surgical Lights,
VPA™, and ChromoView® Products Pre-Install Manual (700000162)

Related Publications:

- CHROMOPHARE® Surgical Lights, Single and Combination Lights Operating Manual (57404)
- CHROMOPHARE® Single and Combination Lights E805, E650 Operating Manual (57140)
- CHROMOPHARE® Single and Combination Lights E778, E668, E558 Operating Manual (57155)
- CHROMOPHARE® Single and Combination Lights E650, E550 Operating Manual (700000168)
- CHROMOPHARE® D510, D540 & D660 Operator Manual (700000088)
- Video/Power Arm™ Operating Manual (57337)
- Video/Power Arm™ Service Manual (57338)
- ChromoView® Monitor Carrier Arm Mounting and Operating Manual (57079)
- CHROMOPHARE® Multiple Surgical Lights Contractor Summary (700000147)
- CHROMOPHARE® Single Surgical Lights Contractor Summary (700000030)
- IntegraMount™ Superstructure Contractor Summary (700000196)
- ChromoView® Monitor Arms (700000160)
- TELETOM® Pre-Install Manual (700000231)

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CONTACT

Technical Service

Tel 800-243-5135, Option 2
Fax 843-569-6133
E-Mail TechService@berchtold.biz

Information

E-Mail Info@berchtold.biz
Web <http://www.berchtoldusa.com/>

1950 Hanahan Road | Charleston, SC 29406

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BERCHTOLD Technical Service

Tel 800-243-5135, Option 2

Fax 843-569-6133

E-Mail TechService@berchtold.biz

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04	06/2014	Update Release for E- and F-Generation, VPA™ and CHROMOPHARE®, ECO 22128 Added Single SK Enclosure and TC Junction Box information Updated Conduit Layout Formatting update

Symbols Used in This Manual

Warnings

The symbols in this manual indicate important types of warnings. To prevent accidents, injuries, and property damage, observe all warning notices and exercise extreme caution.

	⚠ DANGER Indicates an immediately dangerous situation that, if not avoided, will result in death or serious bodily injury .
	⚠ WARNING Indicates a possibly dangerous situation that, if not avoided, can result in death or serious bodily injury .
	⚠ CAUTION Indicates a possibly dangerous situation that, if not avoided, can result in moderate or minor injuries .
	⚠ DAMAGE Indicates a possibly dangerous situation that, if not avoided, can result in damage to property .

Special Safety Warning

	⚠ DANGER Risk of death from electrical current Indicates life-threatening situations resulting from electrical current. Disregarding the safety notice can result in serious injury or death . Work may be performed only by electrical technicians.
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Tips and Recommendations

	NOTICE Highlights information that may be helpful for efficient, trouble-free operation.
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1 Introduction

This CHROMOPHARE® Pre-Install Manual details and describes the structural, mechanical, and electrical requirements of the room or site to allow proper installation of CHROMOPHARE® Lights and Flat Panel products. It is intended for use by technical professionals, installation and service personnel (e.g., architects, structural engineers, contractors, electricians, and pipe fitters) involved in the specification, design, and construction of the installation site.

This CHROMOPHARE® Pre-Install Manual also provides installation instructions for the power supply and light controls housed within an SK Enclosure, which is often mounted before the installation of the CHROMOPHARE® light system.

The safety instructions stated in this CHROMOPHARE® Pre-Install Manual are solely provided as a summary, and do not include the specific precautions and safety instructions for Operator use. Special precautions must be observed by all Operators when placing equipment on the CHROMOPHARE® platforms and when moving the CHROMOPHARE® about the room. Refer to the CHROMOPHARE® Surgical Lights, Single and Combination Lights Operating Manual (57404) for important operational instructions.

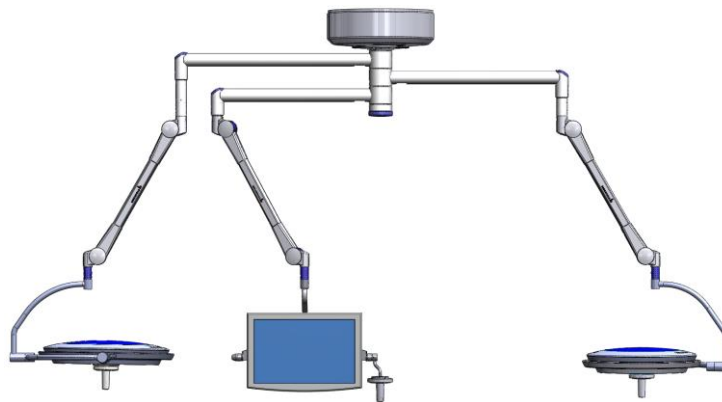


Figure 1-1: Typical CHROMOPHARE® Configuration

1.1 Equipment Overview

A Typical CHROMOPHARE® E- and F-Generation Surgical Light configuration, as shown in Figure 1-1, includes a flat panel display with two light heads.



The owner and/or owner's contractor are responsible for preparing the room or site, including the superstructure design and installation and all mechanical and electrical requirements described in this manual.

Factory trained BERCHTOLD personnel will install the lights and accessories on the owner prepared superstructure. The owner and/or owner's contractor is responsible for making the final electrical connections once the equipment installation is complete. These final electrical connections must be made before the BERCHTOLD personnel leave the site so that the equipment can be thoroughly tested and accurately adjusted.

Painting and flooring need to be completed before the product can be installed.

Questions pertaining to the information contained in this guide can be addressed by calling your local BERCHTOLD Technical Service Representative or BERCHTOLD Technical Service at 800-243-5135, Option 2.

This guide is applicable to the following BERCHTOLD products:

- CHROMOPHARE® E- AND F-GENERATION Surgical Lights.
- Combinations of CHROMOPHARE®, ChromoView®, Video/Power Arm (VPA)™, and pre-approved 3rd Party Devices mounted on Single Mounts or Shoulder Mounts.

2 Safety

This section of the CHROMOPHARE® Pre-Install Manual provides an overview of all important safety information for optimal, personal protection and safe, trouble-free operation.

Non-compliance with the installation and safety instructions in this CHROMOPHARE® Pre-Install Manual may result in considerable danger.

The procedures described in this CHROMOPHARE® Pre-Install Manual will be performed by the owner and/or owner's contractor; therefore, the owner is responsible for ensuring that these and other appropriate safety precautions are followed.

2.1 General Warnings and Precautions

	⚠ WARNING 1. Use proper lifting equipment and procedures. Loaded shipping pallets are heavy and can cause injury to people or damage to the equipment if not handled properly.
	⚠ DANGER 1. Live electrical circuits can cause injury or death. To prevent work on live electrical circuits, lock out and tag out power supplies. 2. Drifting of the equipment can cause injury or death.
	⚠ CAUTION Store the CHROMOPHARE® Surgical Light components out of the elements and away from dust, debris, and moisture to protect them from damage. Failure to protect the components could lead to damage that will prevent proper installation and performance in service. Long term storage of CHROMOPHARE® Surgical Light components requires climate controlled warehousing and appropriate physical safeguards to prevent damage.
	⚠ DAMAGE The owner and/or owner's contractor have final responsibility for the strength and rigidity of the superstructure or of securing the BERCHTOLD IntegraMount™ Superstructure System to the building. IntegraMount™ excluded, BERCHTOLD does not warrant or certify superstructure designs. An inadequate superstructure will affect the ability of the CHROMOPHARE® unit to perform in the manner intended. An inadequate superstructure design can also result in damage to the equipment. Equipment warranty service charges related to an inadequate superstructure design or installation are at the owner's expense.

2.2 Electrical Safety

	⚠ DANGER Risk of death from electrical current. Touching live electrical components is life threatening. Live electrical components can cause erratic movements and result in life-threatening injuries. – Always turn off and completely disconnect the system from electrical power before disassembly.
---	---

3 Responsibilities

3.1 BERCHTOLD Responsibilities

BERCHTOLD personnel install each CHROMOPHARE® configuration on ceiling support superstructures designed and constructed by the owner.

Generally, the owner and/or owner's contractor must design, supply, and install all components above the finished ceiling. These components include the supporting superstructure as well as the electrical supply lines. In the case of a BERCHTOLD provided IntegraMount™, BERCHTOLD will provide the superstructure component for installation by the owner and/or owner's contractor, or by BERCHTOLD if optional installation services were purchased.

BERCHTOLD supplies the following components, as applicable to configuration, for pre-installation by the owner and/or owner's contractor:

- Equipment Configuration Drawings
- CHROMOPHARE® Surgical Light Mounting Plate
- Wall Control Box
- SK Enclosure (power supply)



With exception of the IntegraMount™ Superstructure System, BERCHTOLD will not be responsible for the superstructure design or the materials used. For questions, contact BERCHTOLD Technical Services at 800-243-5135, Option 2.

3.2 Owner Responsibilities



⚠ DAMAGE

The owner and/or owner's contractor has final responsibility for the strength and rigidity of the superstructure, or for securing the BERCHTOLD-supplied IntegraMount™ Superstructure System to the building. BERCHTOLD does not warrant or certify superstructure designs with the exception of the supplied IntegraMount™ Superstructure System.

An inadequate superstructure will affect the ability of BERCHTOLD products to perform in the manner intended. An inadequate superstructure design can also result in damage to the equipment.

Equipment warranty service charges related to an inadequate superstructure design or installation are at the owner's expense.

To function safely and effectively, the CHROMOPHARE® Lights must be installed on a strong and rigid ceiling support. Thus, the CHROMOPHARE® Lights require a significant superstructure above the ceiling. An installed unit must support large weights, moments, and meet stringent deflection criteria. We strongly recommend that the owner utilize a pre-approved superstructure system such as the BERCHTOLD IntegraMount™, and/or consult a structural engineer prior to designing and installing the superstructure.

The owner or the owner's consulting structural engineer must verify the following to assure a safe and satisfactory installation:

- The building structure is capable of supporting the loads involved specified in Section 4.
- The building structure is capable of supporting any additional dynamic stresses (such as seismic loads) required by local building codes.

3.2.1 Superstructure Design and Construction

While in service, even the slightest deviation of the CHROMOPHARE® mounting plate out of the required horizontal plane, can cause the equipment to drift. To prevent this, the BERCHTOLD-supplied mounting plate must be properly installed in a horizontal plane (± 0.1 degree), with the studs pointing down. The superstructure must also be rigid enough to prevent the mounting plate from rotating more than 0.1 degree when the specified design load is applied.

The design and construction recommendations in this CHROMOPHARE® Pre-Install Manual are subject to review and approval by an Engineer of Record engaged by the owner. Many factors, such as building structure type (e.g., concrete, steel, brick, etc.), space available above the finished ceiling, obstructions within the ceiling cavity, owner restrictions (e.g., welding within the ceiling cavity), economics, and contractor preferences may require different approaches to the actual design and installation of the CHROMOPHARE® superstructure.

3.2.2 Wiring

The owner and/or owner’s contractor must install the power lines between a mains supply and the CHROMOPHARE® surgical light. Refer to the Equipment Configuration Drawings (provided by BERCHTOLD) for the type and quantity of circuits required. Wiring must be installed and power must be able to be turned on prior to installation of the CHROMOPHARE® surgical light

After the installation of the CHROMOPHARE® surgical light is complete, the owner or the owner’s contractor must make the final electrical connections to the equipment. See Section 5: Electrical Requirements for wiring and circuit information.

3.2.3 Testing

The owner and/or owner’s contractor must test and certify all system components before installation of the CHROMOPHARE® is scheduled. Testing and certification must include superstructure and electrical wiring.

3.3 Shipping, Handling, and Storage

3.3.1 Pre-Installation Components

Upon request, BERCHTOLD ships the applicable, pre-installation items in advance of the other CHROMOPHARE® surgical lighting components. All pre-installation components should be delivered to the owner and/or owner’s contractor upon receipt.

3.3.2 CHROMOPHARE® Surgical Lighting Components

	⚠ WARNING Use proper lifting equipment and procedures. Loaded shipping pallets are heavy and can cause injury to people or damage to equipment if not handled properly.
	⚠ CAUTION Store the CHROMOPHARE® Surgical Lighting components out of the elements and away from dust, debris and excess moisture to protect them from damage. Failure to protect the components could lead to damage that will prevent proper installation and performance in service. BERCHTOLD ships CHROMOPHARE® Surgical Lighting components via LTL truck or moving van in specially constructed reinforced packaging. The equipment and its packaging <u>require a narrow pallet jack to be available upon arrival</u>. Handle and store the equipment properly to avoid injury to personnel or damage to the components. Boxes are to be opened only by BERCHTOLD personnel, and are labeled as such. Any missing components resulting from unauthorized entry into the boxes are the responsibility of the owner and will be invoiced with a change order.

4 Structural Requirements

This section provides information required by the Engineer of Record (EOR) to design the superstructure for the CHROMOPHARE® Surgical Lights. The illustrations are suggestions for the EOR to design the superstructure. The design and materials used are at the discretion of the EOR and based upon specific site requirements.

BERCHTOLD cannot be responsible for the superstructure designs or the materials used. For questions regarding pre-installation requirements for any CHROMOPHARE®, contact BERCHTOLD Technical Services at 800-243-5135, Option 2.

4.1 Superstructure Design Loads

See the Responsibilities in Section 3 for a description of the owner's design and construction responsibilities.

	⚠ CAUTION
	The owner and/or owner's contractor has final responsibility for the strength and rigidity of the superstructure, or securing the BERCHTOLD-supplied IntegraMount™ Superstructure System to the building. BERCHTOLD does not warrant or certify superstructure designs with the exception of the supplied IntegraMount™ Superstructure System. An inadequate superstructure will affect the ability of BERCHTOLD products to perform in the manner intended. An inadequate superstructure design can also result in damage to the equipment. Equipment warranty service charges related to an inadequate superstructure design or installation are at the owner's expense.

4.2 Weight and Design Specifications

Weights and Moments. The superstructure must be designed to the weights and moments shown in the table below which lists the heaviest unit and the highest rotational moment. Designing for the heaviest model with the highest rotational moment will provide adequate support for the heaviest model, but will not add significantly to the cost of the installation of the lightest model. This design margin also increases flexibility for future product upgrades.

The installed weights and moments shown in the table below include the CHROMOPHARE® components and payload.

Recommended Design Specifications - Standard Mounting Plate	
Maximum Weight (lb./kg)	Maximum Moment (ft.-lb.) / (N·m)
445 (202)	2047 (2776)

The superstructure must be strong enough to support the weight and rigid enough to constrain rotation to less than 0.1° at the mounting plate.

4.3 Minimum Design Specifications by Product Type

Recommended Design Specifications - Shoulder Mounting Plate	
Maximum Weight (lb./kg)	Maximum Moment (ft.-lb.)/(N·m)
791 (360)	4098 (5557)

4.4 CHROMOPHARE® Installation

4.4.1 CHROMOPHARE® Single and Shoulder Mount Plate Orientation

The figures below illustrate a suggested arrangement for a successful CHROMOPHARE® Installation. Note that other constructions are possible. It is the responsibility of the Engineer of Records (EOR) to design and specify materials for proper construction of superstructure. These diagrams are intended to demonstrate the relative location of the mounting plate to the finished ceiling. Orientation of the mounting plate other than that shown in the diagram could cause delays in installation or require modification to the superstructure.

Contact BERCHTOLD personnel for information on which mounting plate is applicable to a specific project.

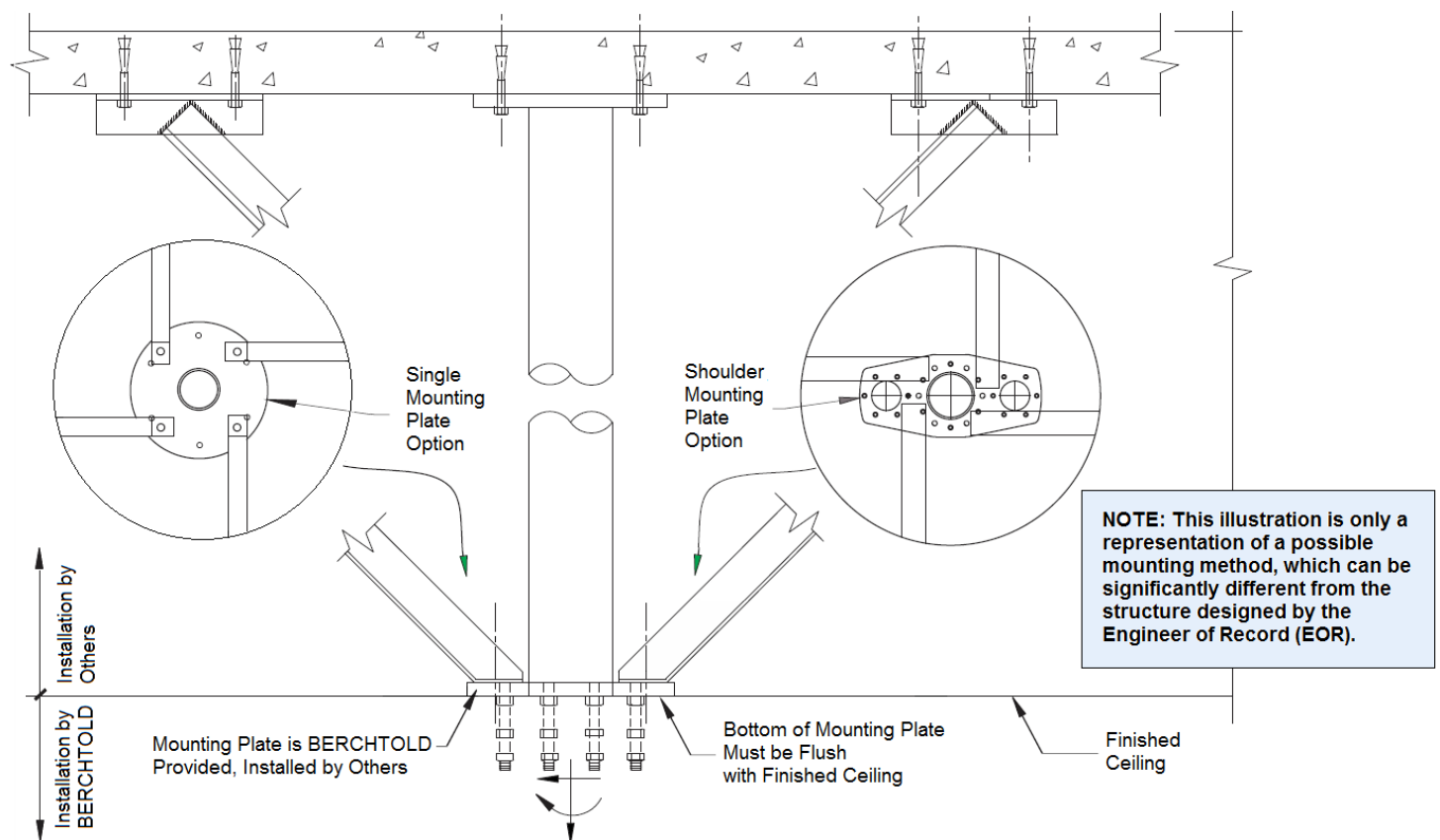
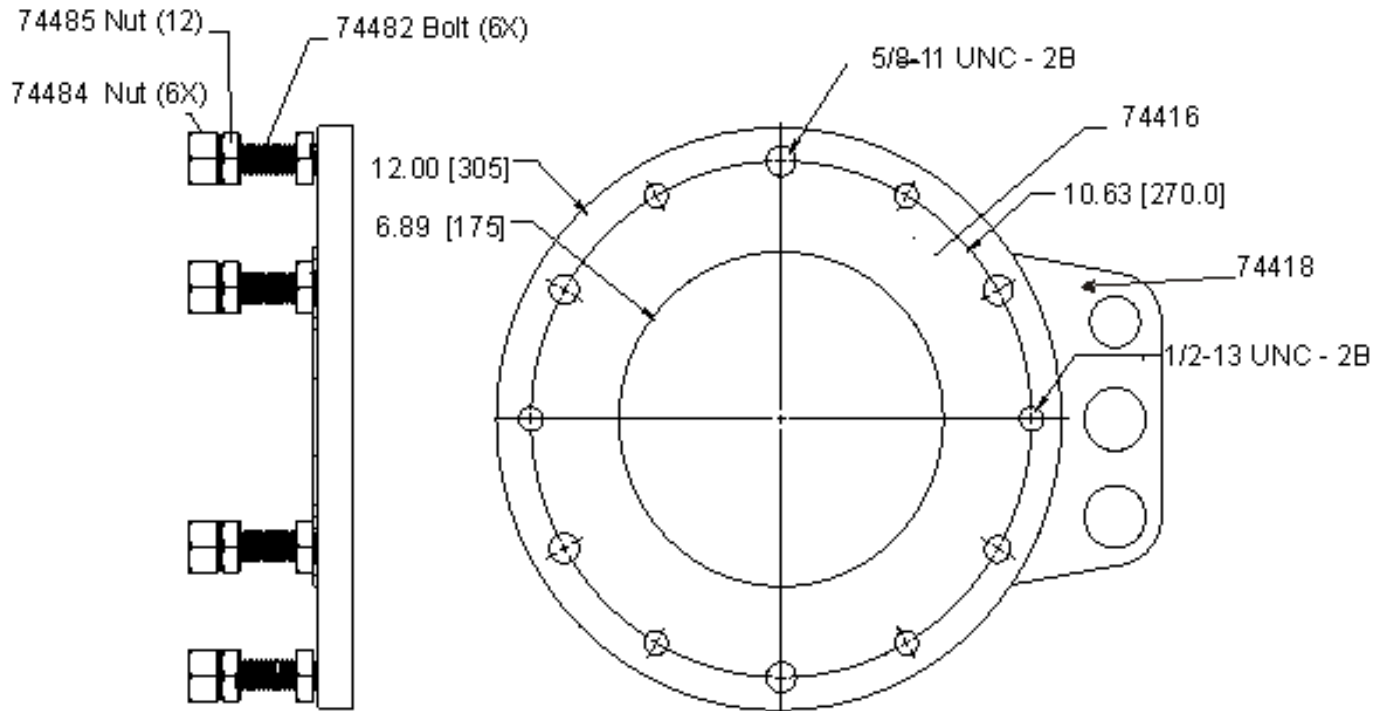


Figure 4-1: CHROMOPHARE® Single and Shoulder Mount Plate Orientation

4.5 BERCHTOLD Supplied Mounting Plates

4.5.1 CHROMOPHARE® Standard Mounting Plate



Part Number CB 5108675

Notes: Material: A-36
 Dimensions are in inches
 5/8-11 UNC and 1/2-13UNC are equally spaced apart on a 10.63 BC

Figure 4-2: CHROMOPHARE® Standard Mounting Plate

4.5.2 CHROMOPHARE® Universal Mounting Plate

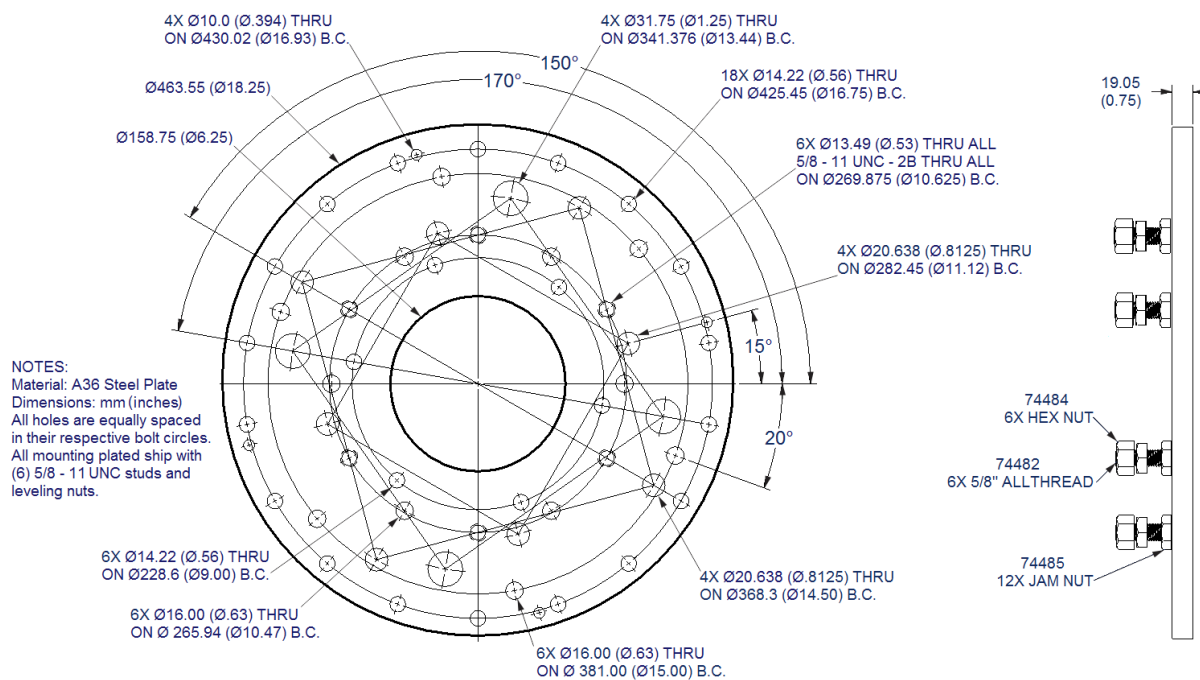


Figure 4-3: CHROMOPHARE® Universal Mounting Plate

4.5.3 CHROMOPHARE® Shoulder Mounting Plate

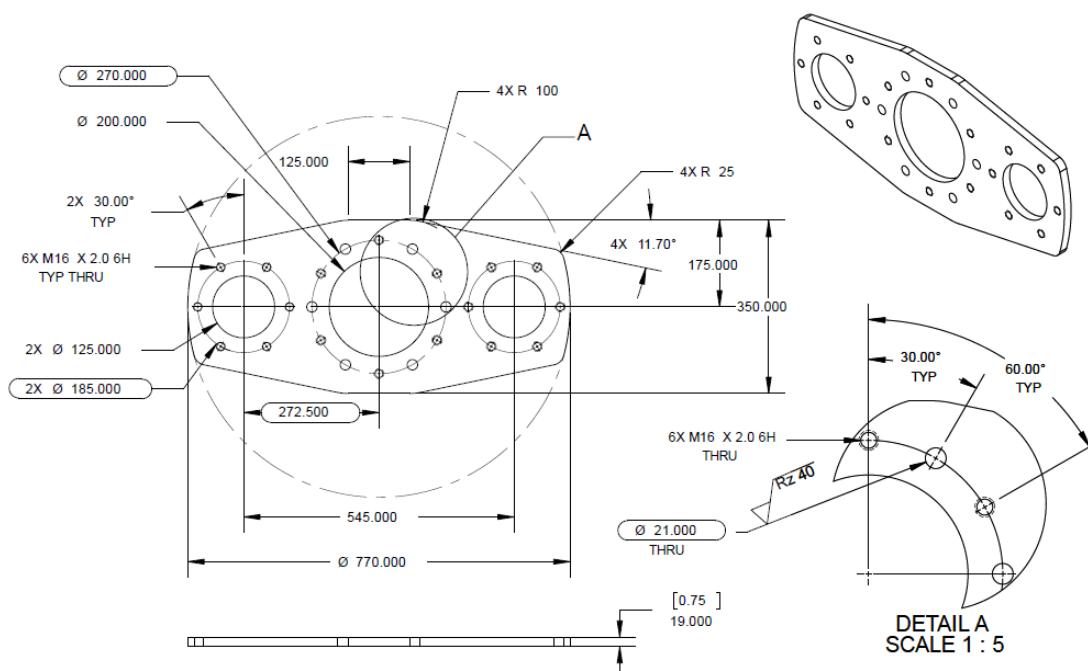


Figure 4-4: CHROMOPHARE® Shoulder Mounting Plate

5 Electrical Requirements

This section provides detailed descriptions of the mounting approaches available for powering CHROMOPHARE[®] Surgical Lights:

- SK Enclosure (Standard Mount): The CHROMOPHARE[®] Surgical Light's power supply and controls are housed within an SK Enclosure mounted separately from the CHROMOPHARE[®] light suspension. To power the system, AC power runs from a mains source to the SK Enclosure. Control signals and DC power are routed through wires from the SK Enclosure to a terminal strip on the light suspension plate. If a VPA[™] product is installed, an additional AC mains to the light suspension plate is required.
- SK Enclosure (Shoulder Mount): The Shoulder Mount follows the same electrical configuration as the Standard Mount SK Enclosure. AC power runs from a mains source to the SK Enclosure. Control signals and DC power are routed through wires from the SK Enclosure to a terminal strip on the light suspension plate. If a VPA[™] product is installed, an additional AC mains to the light suspension plate is required.
- TELETOM[®] and CHROMOPHARE[®] (TC) Mount: To power the system, AC power runs from a mains source to the SK Enclosure. Control signals and DC power are routed through wires from the SK Enclosure to a TC Junction Box mounted to the superstructure.
- Alternate Mount (Electronics on Tube): AC power is delivered from a mains source directly to the CHROMOPHARE[®] Surgical Light's ceiling mounting plate.

5.1 Testing and Certifications

The owner and/or owner's contractor must test and certify all system components before installation of the CHROMOPHARE[®] products will be scheduled.

This testing and certification must include the following items:

- Superstructure testing or certification to meet design load by EOR.
- Electrical testing to meet local codes



The owner and/or owner's contractor is responsible to ensure that the electrical components and installation complies with all applicable electrical codes. All wiring and conduit runs described for the type of installation involved must be completed before the product can be installed.

Check with site project manager or BERCHTOLD representative to determine whether the Standard or Alternate mounting approach is to be used. If you have any questions regarding the electrical requirements for the pre-installation of any CHROMOPHARE[®] Surgical Light, call BERCHTOLD Technical Services at 800-243-5135, Option 2.

5.2 CHROMOPHARE[®] Mounting Options



The room layout drawings in this section provide conduit requirements for the CHROMOPHARE[®] Surgical Light. All illustrations are representative of BERCHTOLD products, but are provided for reference only.

The fully populated SINGLE SK Enclosure weighs approximately 64 pounds (29 kg) and a fully populated DOUBLE SK Enclosure weighs approximately 128 pounds (58 kg).

5.2.1 SK Enclosure (Standard Mount)

An SK Enclosure standard mount of the CHROMOPHARE[®] Surgical Lights, as shown in Figure 5-1: SK Enclosure is the preferred low-profile mounting style in most locations to take advantage of available ceiling height and based on equipment configuration. For example, a configuration with a CHROMOPHARE[®] light/flat panel is commonly configured with an SK enclosure.

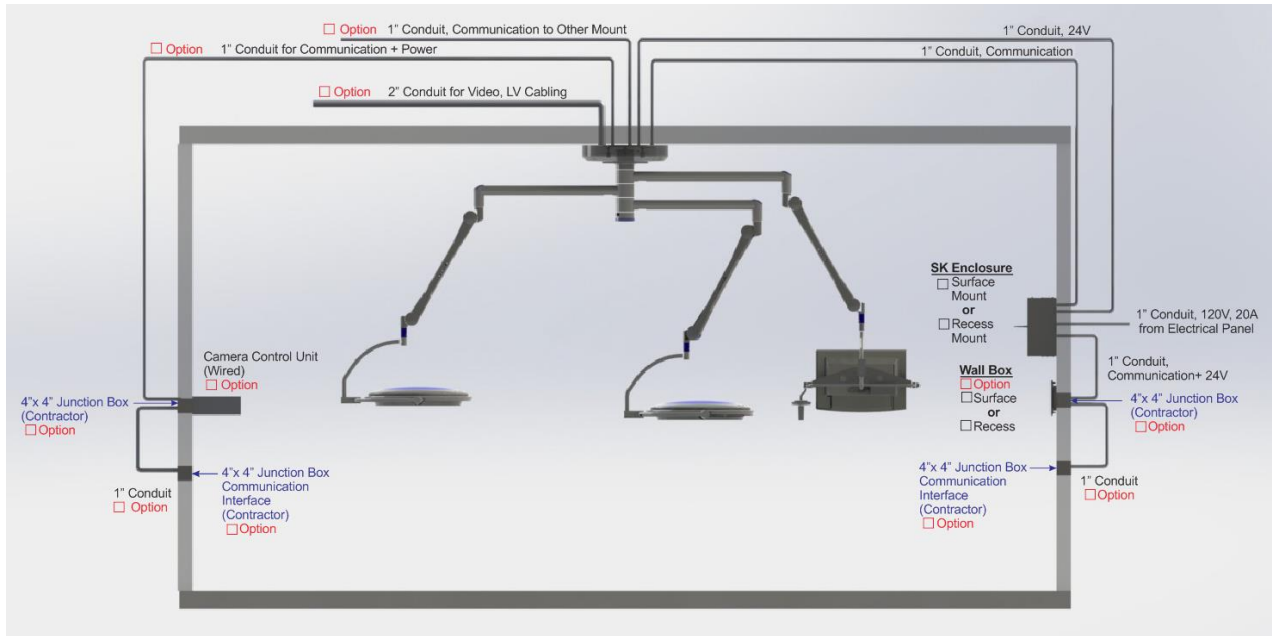


Figure 5-1: SK Enclosure (Standard Mount) Conduit Plan, Elevation View

5.2.1.1 SK Enclosure Mounting

- The SK Enclosure must have a maximum length of 45 feet (15 m) of conduit run to both the mounting p and to the wall control box, and must be easily accessible, either by installation into a wall, or in the interstitial space with an access panel.

5.2.1.2 AC Wiring

Mains to input of SK Enclosure:

- AC supply should be 120 VAC, 50/60 Hz.
- Wiring should be 3 wire, 12AWG min., and 600V, terminated to the fused terminal block inside the SK Enclosure.
- Each light head draws 2 Amps at 120 VAC.

5.2.1.3 DC Wiring

From SK Enclosure to Mounting Ring:

- Wiring should be 12AWG, 600 volt.
- Wires should consist of 1 pair per light head and 1 ground wire per mounting ring.
- Wires terminate at the non-fused terminal block inside the SK Enclosure.
- Wiring should run from output of SK Enclosure and fall a minimum of 18-inches (450 mm) below the ceiling at the mounting ring.

5.2.1.4 Conduit and Boxes (if applicable)

- A standard 4 X 4 junction box should be installed in the wall for mounting of the light's wall control, if box is standalone unit.
- If a recessed wall box is chosen, the requirements are not the same as a surface mount as the recessed box itself receives the conduit.
- The front of the wall control box should be flush with the wall. BERCHTOLD suggests that this box be located approximately 53-inches (1350 mm) above the floor.
- Minimum 1-inch (25 mm) conduit with finish grommets at each end should be installed between the wall control junction box and the SK Enclosure.
- AC wiring must meet local code.
- DC wiring must meet local code.



Conduit openings need to be easily accessible at both ends.

5.2.2 SK Enclosure (Shoulder Mount)

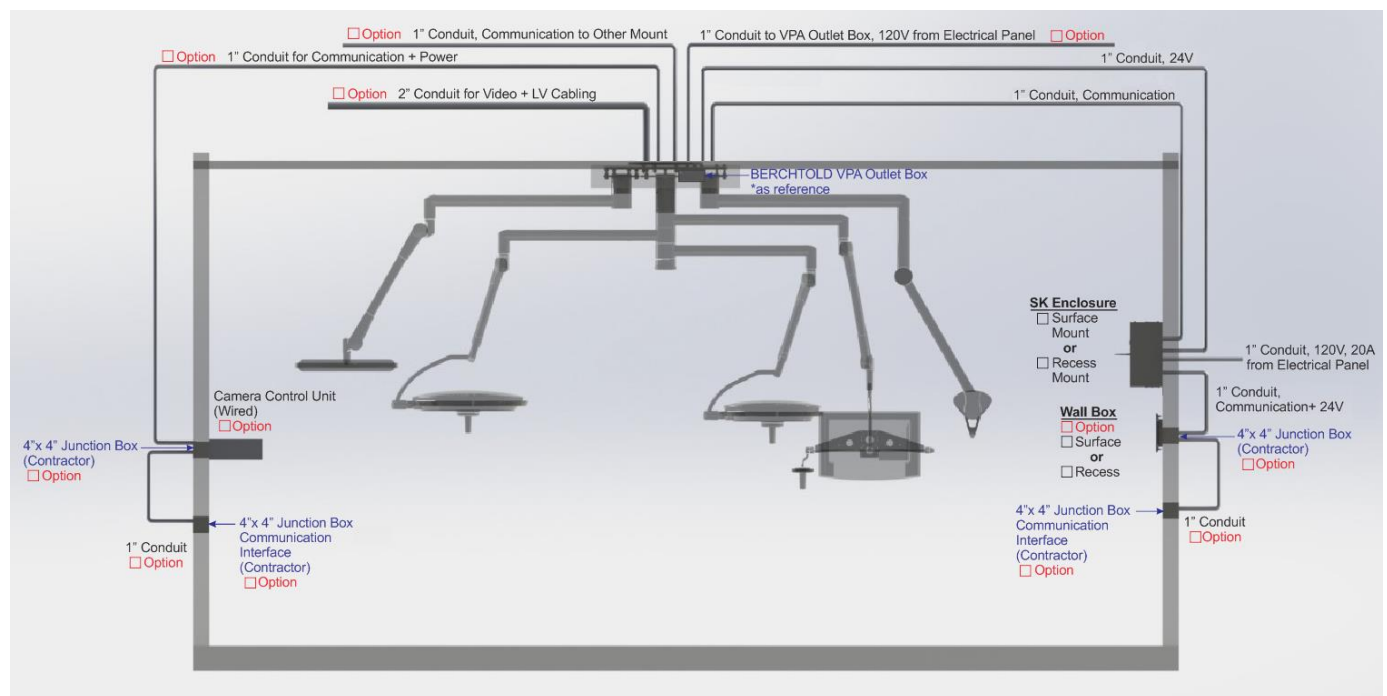


Figure 5-2: SK Enclosure (Shoulder Mount) Conduit Plan, Elevation View

5.2.2.1 VPA™ AC Wiring

In addition to CHROMOPHARE® Surgical Light AC wiring:

- Wire should be 3 wire, 12 AWG (minimum), 600V
- Wiring for the VPA™ circuits should run through code compliant conduit terminating in the outlet box for field connection.
- CHROMOPHARE® VPA™ requires 120VAC, 50/60 Hz supply.
- The CHROMOPHARE® VPA™ has provisions for up to 2 separate 120 VAC supply circuits for each VPA™ unit.
- Each circuit should be rated for 20 Amps at 115 VAC unless otherwise noted.

5.2.2.2 VPA™ Outlet Box

- The VPA™ outlet box must be mounted on or near the mounting plate and be easily accessible - see VPA mounting plate.
- The maximum weight is approximately 5 lb. (2 kg).
- An access panel through the ceiling and close to the outlet box mounting location is required.

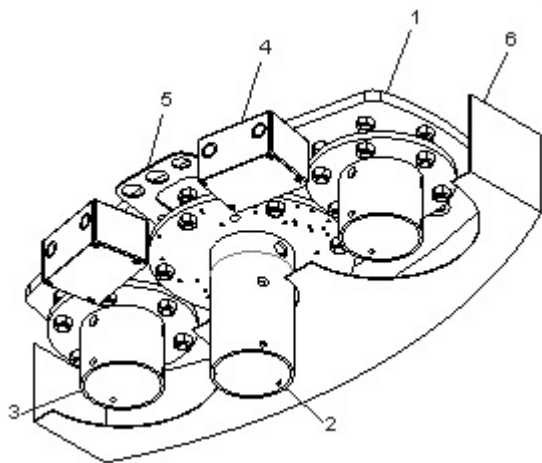


Figure 5-3: Shoulder Mounting Plate Component Identification

Item	Description
1	Mounting Plate, Shoulder
2	Flange tube (US) Ø 125 mm, **L= XXXmm, F Ø 310
3	Flange tube (US) Ø 125 mm, **L= XXXmm, F Ø 225
4	Outlet Box (VPA Only)
5	Conduit Termination Plate
6	Ceiling Cover, Triple Flange, A Part
7	Ceiling Cover, Triple Flange, B Part (Not Shown)

** Sizing is configurable

Customer must specify if power source is **ISOLATED** or **NON-ISOLATED**.

5.2.2.3 Conduit and Boxes (if applicable)

- A standard 4 X 4 junction box should be installed in the wall for mounting the light wall control. The front of the box should be flush with the wall. BERCHTOLD suggests that this box be located approximately 53 inches (1350 mm) above the floor.
- If a recessed wall box is chosen, the requirements are not the same as a surface mount as the recessed box itself receives the conduit.



1. Conduit openings need to be easily accessible at both ends.
2. Refer to local electrical codes for proper conduit, wire size and type, outlet boxes and other electrical equipment requirements.

5.2.2.4 Optional Equipment

If a ChromoVision® Camera System or other optional equipment will be included in the installation, the following additional equipment is required:

Minimum 1-inch (25 mm) conduit, with finish grommets at each end, should be installed from the mounting flange to either a junction box used for mounting the camera control or the documentation console, per customer specification.



1. Conduit openings need to be easily accessible at both ends.
2. Maximum length of camera control cable is 50 feet (15 m). Conduit not to exceed 45 feet (13.7 m).

5.2.3 TELETOM® with CHROMOPHARE® (TC) Mount

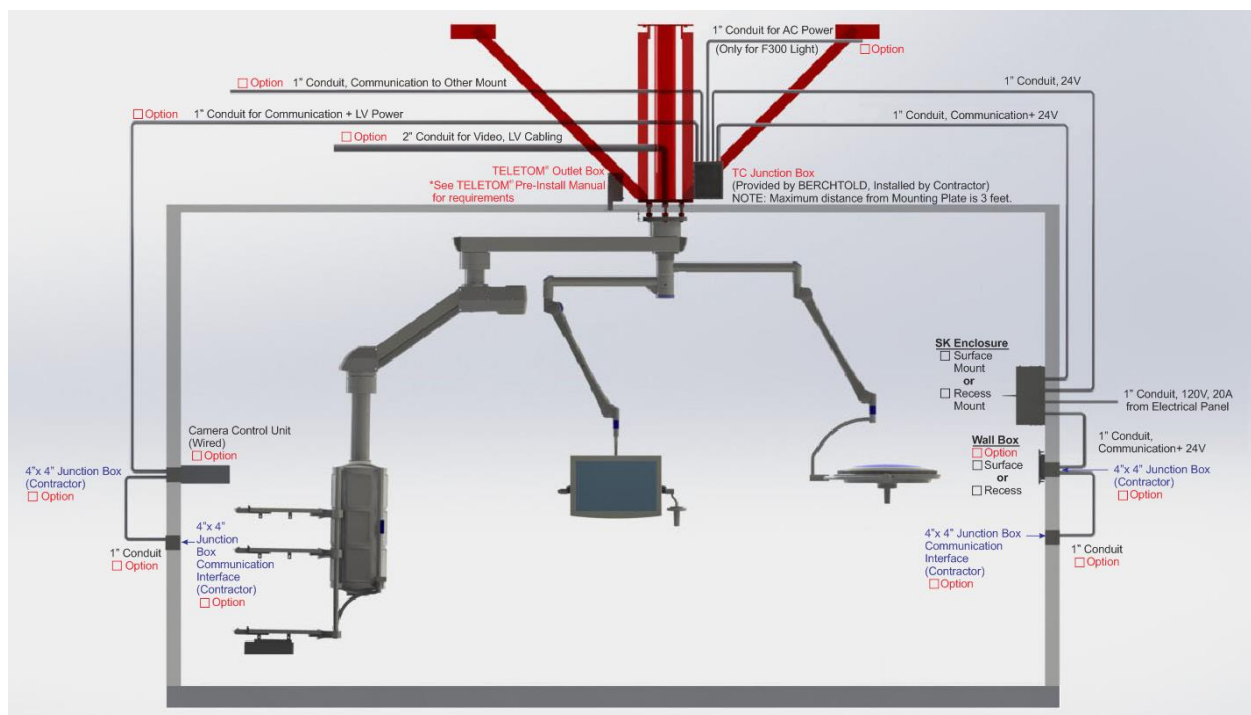


Figure 5-4: TELETOM® with CHROMOPHARE® (TC) Conduit Plan, Elevation View

- Wiring should be 3-wire, No. 12 AWG (minimum), 600 V.
- Wiring for lights should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18 inches (450 mm) below the ceiling.
- CHROMOPHARE® lights require a 120 VAC, 50/60 Hz supply. BERCHTOLD recommends a separate 120 VAC supply for each mounting ring.
- Each light head draws 2 Amps at 120 VAC.



1. For information on the IntegraMount™ Superstructure System, refer to the TELETOM® Pre-Install Manual (700000231).
2. Local codes apply to the selection of conduit, wire sizes and type, terminal boxes, and other electrical equipment.

5.2.4 Alternate Mount (Electronics on Tube)

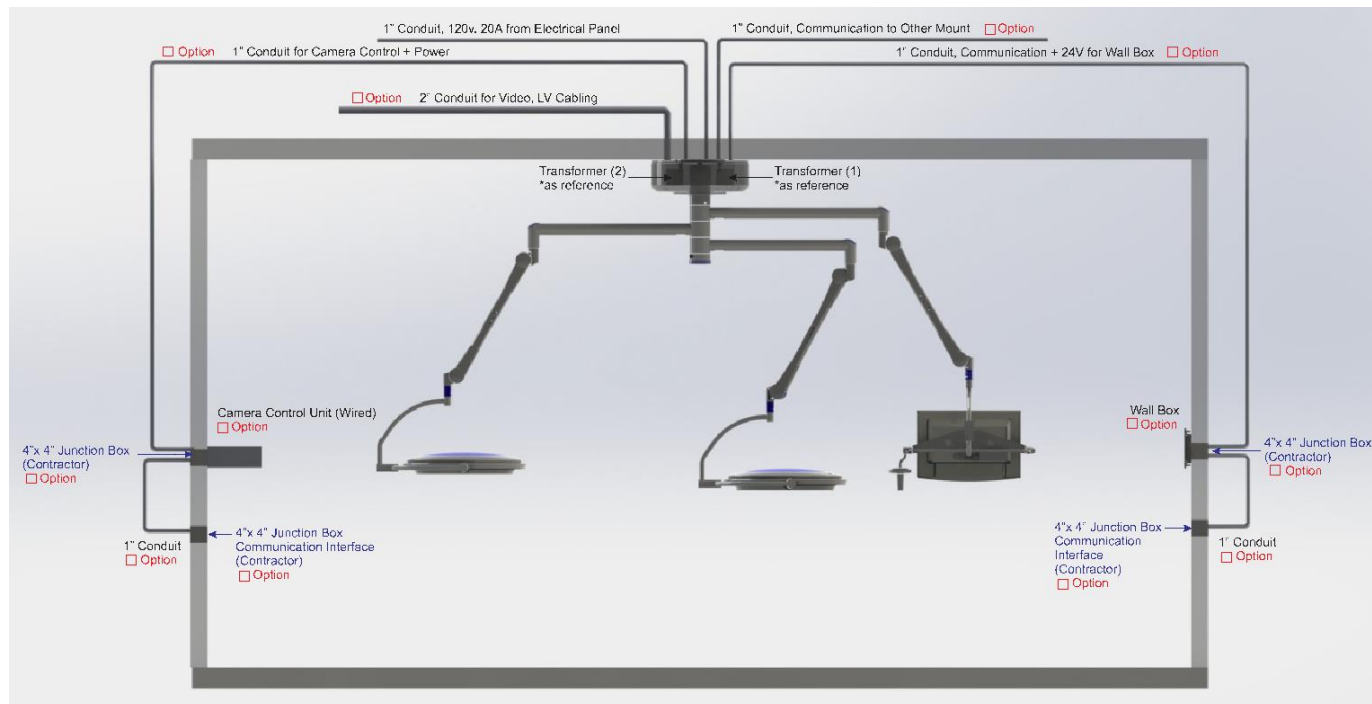


Figure 5-5: Alternate Mount (Electronics on Tube) Conduit Plan, Elevation View

- Wiring should be 3-wire, No. 12 AWG (minimum), 600 V.
- Wiring for lights should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18-inch (450 mm) below the ceiling.
- CHROMOPHARE® lights require a 120 VAC, 50/60 Hz supply. BERCHTOLD recommends a separate 120 VAC supply for each mounting ring.
- Each light head draws 2 Amps at 120 VAC.



Local codes apply to the selection of conduit, wire sizes and type, terminal boxes, and other electrical equipment.

5.3 CHROMOPHARE® Product Options

5.3.1 ChromoView® Flat Panel Product

If a flat panel product will be included in the installation, the following additional equipment is required in addition to any equipment required for the lights, themselves:

5.3.1.1 AC Wiring (ChromoView® Flat Panel)

In addition to CHROMOPHARE® Surgical Light AC wiring:

- Should be 3 wires, 12 AWG (minimum), 600V.
- Conduit must meet local code.
- Wiring should exit ceiling at the mounting ring and fall a minimum of 18-inches (450 mm) below the ceiling.



Contact video vendor for AC requirements.

5.3.1.2 Low-Voltage Video Cable Conduit (ChromoView® Flat Panel)

Refer to video vendor specifications for proper conduit sizing.

If conduit is required by code for low voltage cable, BERCHTOLD suggests 2-inches (50 mm) conduit to allow for the various types and quantities of video cabling that can be run. Conduit should run from the mounting ring to a termination destination determined by the customer.



Conduit openings need to be easily accessible at both ends.

5.4 SK Electronics Enclosure

Mounting dimensions of the SK Enclosure used with the CHROMOPHARE® E- AND F-Generation surgical light systems. This SK Enclosure is utilized to house the power supply and electronics for the surgical light system based on equipment configuration and ceiling height.

The SK Enclosure is available for recessed (in-wall) or surface mounting. The recessed variant has an optional decorative trim frame. Both versions can be ordered with stainless steel doors.

Weight	Single	Double
SK Enclosure, Fully Populated	64 lb. / 29 kg	128 lb. / 58 kg
Decorative Trim Frame (optional, recessed mount variant only)	5 lb. / 2.28 kg	7 lb. / 3.18 kg
Wall Control Unit (optional)	2 lb / 1 kg	2 lb / 1 kg

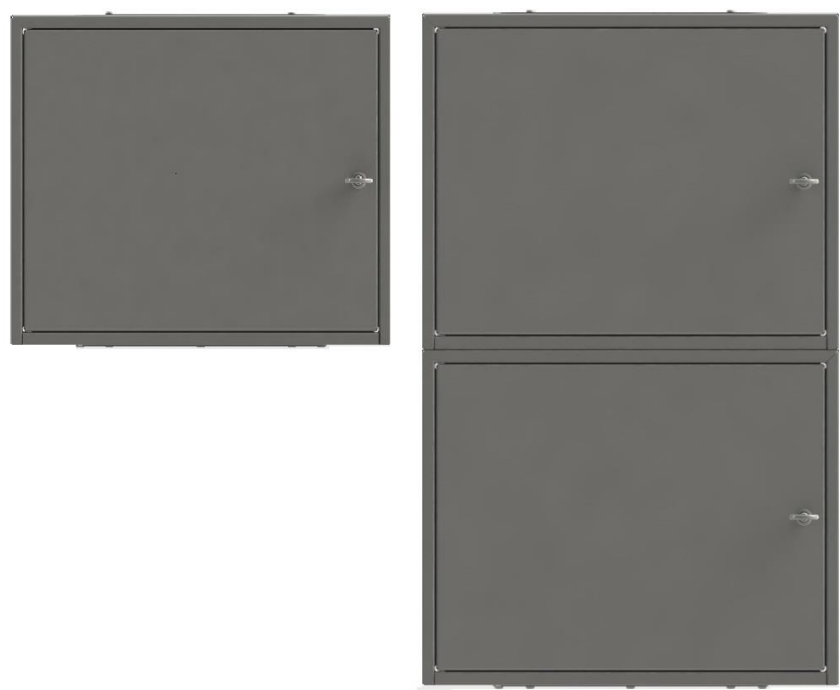


Figure 5-6: Single and Double SK Enclosure Options

Each SINGLE SK Enclosure holds a maximum of TWO SK Electronics. If more than two SK Electronics are required, a DOUBLE SK Enclosure is mandatory.

1 and 2 lights = One (1) SK Enclosure (SINGLE)

3 and 4 lights = Two (2) SK Enclosures (DOUBLE)

5.4.1 Overall and Mounting Dimensions for SK Enclosure

A SINGLE surface mounted SK Enclosure will be mounted directly on to the wall and will protrude out according to the dimensions specified in Figure 5-7: SINGLE SK Enclosure Overall and Mounting Dimensions.

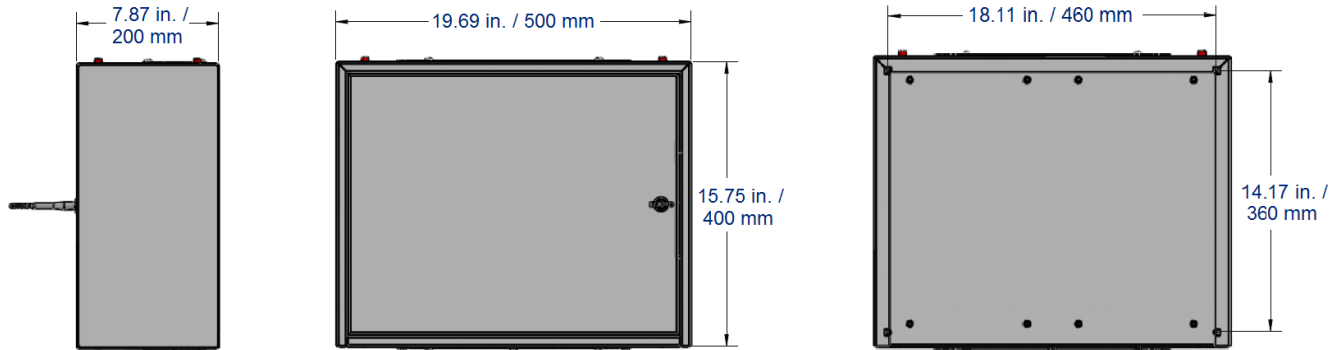


Figure 5-7: SINGLE SK Enclosure Overall and Mounting Dimensions

A DOUBLE surface mounted SK Enclosure will be mounted directly on to the wall and will protrude out according to the dimensions specified in Figure 5-8: DOUBLE SK Enclosure Overall and Mounting Dimensions.

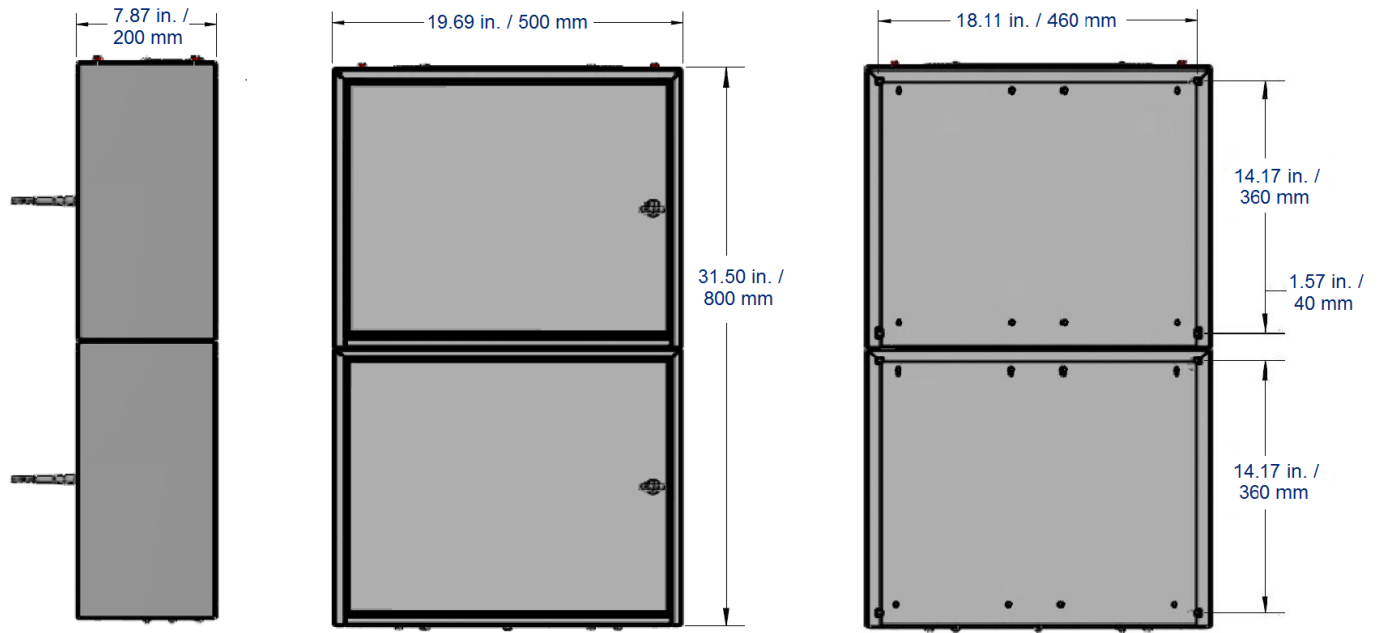


Figure 5-8: DOUBLE SK Enclosure Overall and Mounting Dimensions

5.4.2 Single, Recess mounted SK Enclosure with Decorative Trim Frame

A SINGLE recess mounted SK Enclosure with Decorative Trim Frame will be mounted into the wall and require the cutout to include an additional .39 inches (10 mm) on all sides to accommodate the inside lip of the Decorative Trim Frame as specified in Figure 5-9: SINGLE SK Enclosure Overall Dimensions with Decorative Trim Frame.

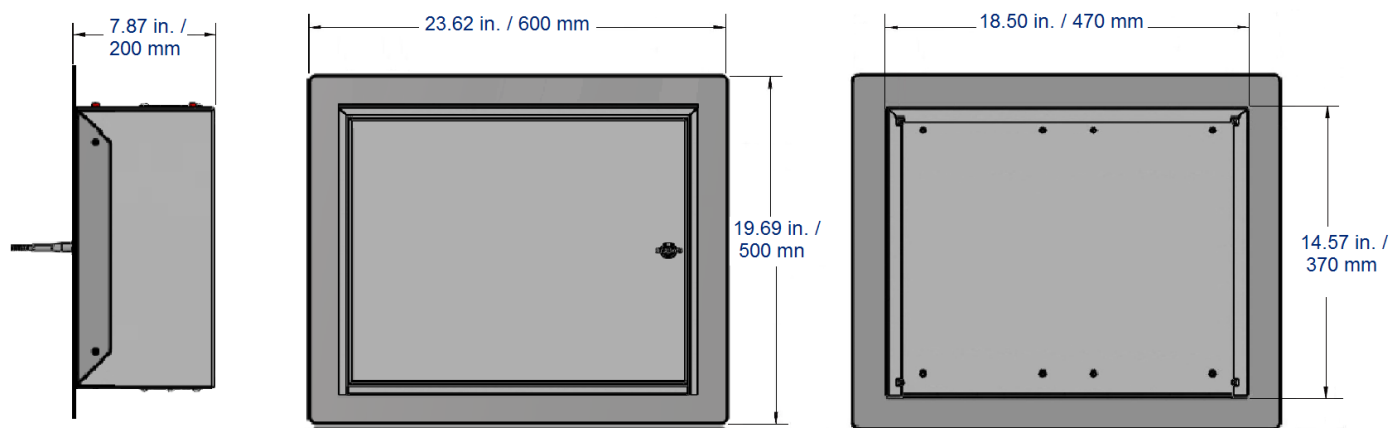


Figure 5-9: SINGLE SK Enclosure Overall Dimensions with Decorative Trim Frame

A DOUBLE recess mounted SK Enclosure with Decorative Trim Frame will be mounted into a wall and require the cutout to include an additional .39 inches (10 mm) on all sides to accommodate the inside lip of the Decorative Trim Frame as illustrated in Figure 5-10: DOUBLE SK Enclosure Overall Dimensions with Decorative Trim Frame

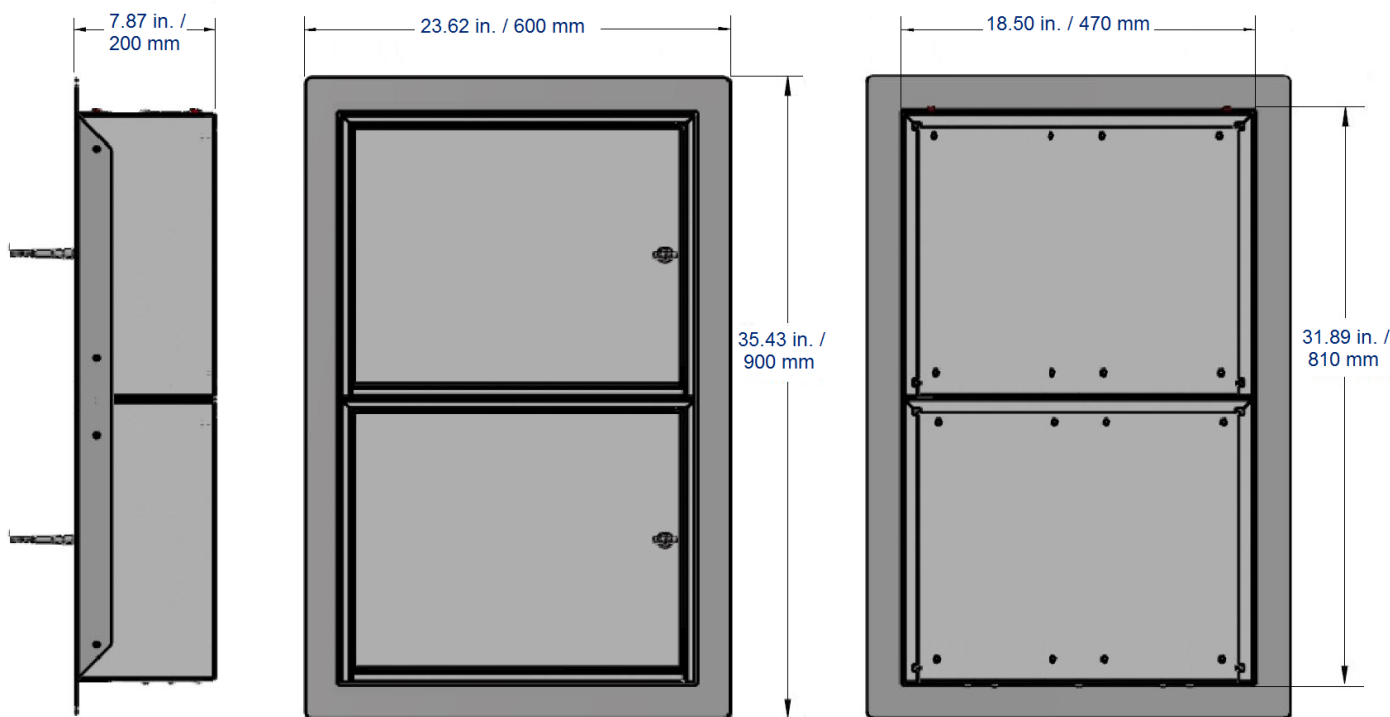


Figure 5-10: DOUBLE SK Enclosure Overall Dimensions with Decorative Trim Frame

5.4.3 Surface SK Enclosure



Figure 5-11: SINGLE Surface SK Enclosure

Dimension	Single
Width	19.69 in. / 500 mm
Height	15.75 in. / 400 mm
Depth	7.87 in. / 200 mm



Figure 5-12: DOUBLE Surface SK Enclosure

Dimension	Double
Width	19.69 in. / 500 mm
Height	31.50 in. / 800 mm
Depth	7.87 in. / 200 mm

5.4.4 Recessed SK Enclosure with Frame



Figure 5-13: SINGLE Recessed SK Enclosure with Frame

Dimension	Single	Double
Width	20.8 in. / 510 mm	20.8 in. / 510 mm
Height	15.94 in. / 405 mm	31.89 in. / 810 mm
Depth	8.07 in. / 205mm	8.07 in. / 205mm



Figure 5-14: DOUBLE Recessed SK Enclosure with Frame

Mounting frame:

Dimension	Single	Double
Width	Additional .39 in. / 10 mm	
Height	Additional .39 in. / 10 mm	
Depth	Additional .39 in. / 10 mm	

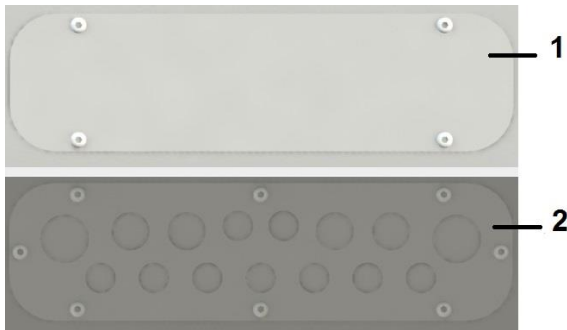


Figure 5-15: Conduit Knockouts on SK Enclosure

The cover plate (1) and the pre-cut blank plate (2) can either be mounted on the top or bottom of the wall SK Enclosure using the included tallow-drop screws.

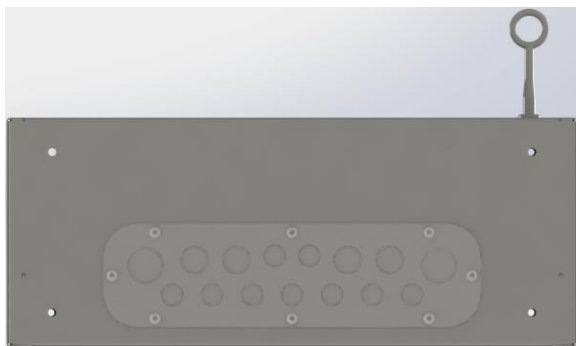


Figure 5-16: Cable Routing on SK Enclosure

As a rule, the connection cables are routed from below to the wall switch box.

Pop out the desired pre-cut opening on the blank plate and use a screw holder as the cable feed-through (not included).

5.5 SK Electronics Plate

The SK Electronics Plate, housed within the SK Enclosure, contains the power electronics necessary for the surgical light systems and provides a pathway for the communication signals between the surgical light mounts and the wall control unit. Pop out the desired pre-cut opening on the blank plate and use a screw holder as the cable feed-through (not included).

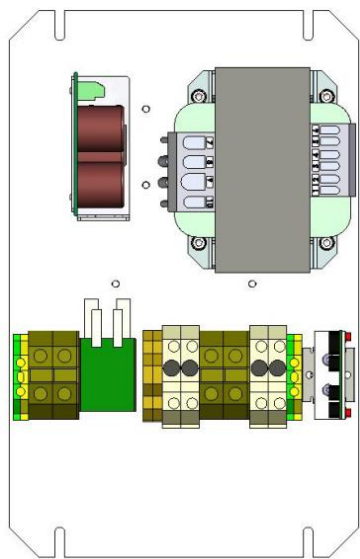


Figure 5-17: SK Electronics Plate (Non-HID)

Dimension	Size
Width	9.06 in. / 230 mm
Height	14.17 in. / 360 mm
Installation depth with mounting	4.74 in. / 120 mm

Drill hole distances for fastening bores:

Dimension	Size
Width	6.44 in. / 163.5 mm
Height	5 in. / 127 mm



⚠CAUTION

Use caution when installing. The SK Enclosure Electrical Plates are heavy and have sharp edges that can cause injury if not handled properly.

5.6 Hardware Modifications

5.6.1 Repositioning the Door Hinge on the SK Enclosure

The door hinge on the SK Enclosure may be adjusted to open either to the left or to the right.

STEP 1: Remove screw (1) and the ground wire (2) on the door with an Allen wrench.

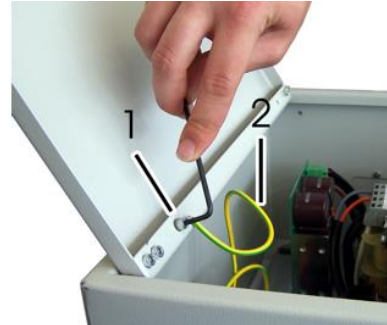


Figure 5-18: Hinge Removal, Overview

STEP 2: Loosen nut and remove grounding cable.



Figure 5-19: Removal of Ground Wire

STEP 3: Loosen cylinder screws (1-4) with Allen wrench and remove door hinges (5).

STEP 4: Remove the door (6).

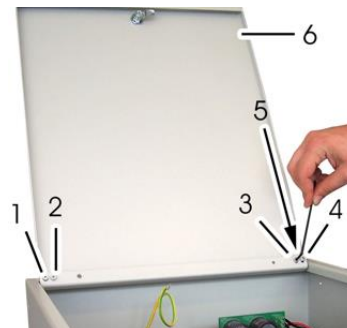


Figure 5-20: Removal of Door

STEP 5: Remove the countersunk screws (1 - 3) and the stop plate (4).

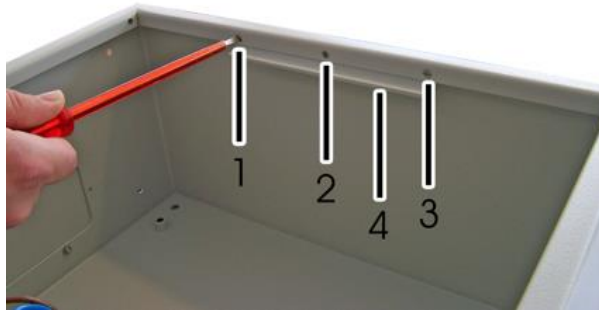


Figure 5-21: Removal of Ledge

STEP 6: Install door stop plate (1) on the opposite side by screwing the countersunk screws (2) into the intended bore holes (3).

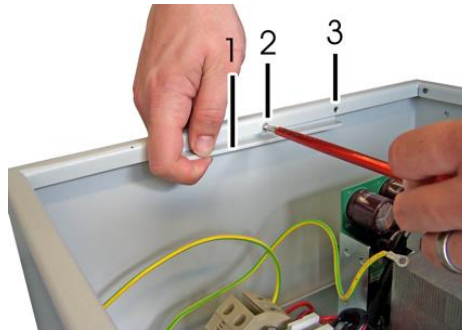


Figure 5-22: Attaching Ledge

STEP 7: Place washer (1) on hinge.

STEP 8: Place the door hinge in the hinge drill hole (2).

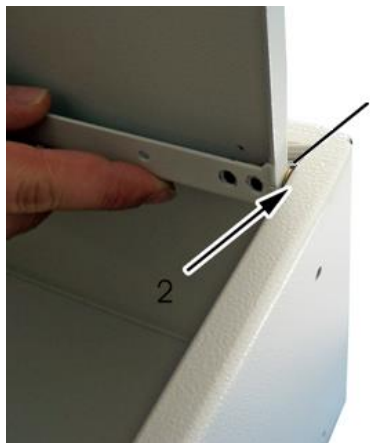


Figure 5-23: Seating of Washer

STEP 9: Place washer on other hinge.

STEP 10: Insert the door hinge into the other hinge hole.

STEP 11: Install doors using door hinges and screws (1).



Figure 5-24: Install Door

STEP 12: Attach cable lugs from grounding cable to bottom threaded bolts using snap rings, washers and nuts (1).



Figure 5-25: Attach Ground Wire

STEP 13: Re-attach grounding cable with screw (1).

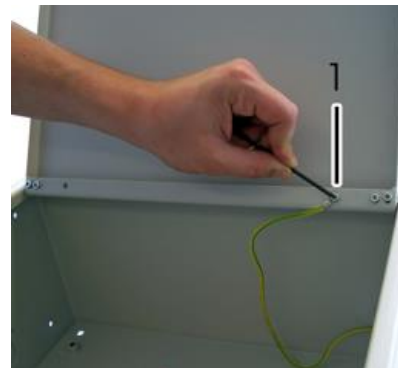


Figure 5-26: Attach Ground Wire

5.7 Wall Control Unit

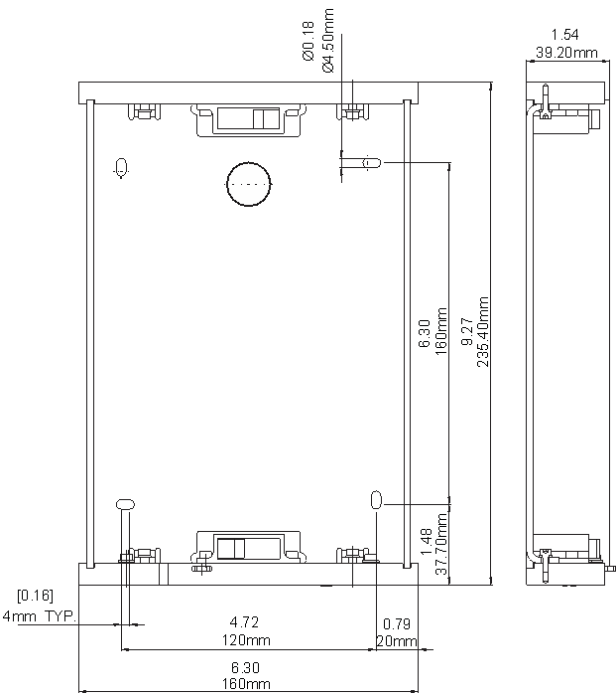


Figure 5-27: Dimensional Drawing, Surface Mount Wall Control Unit

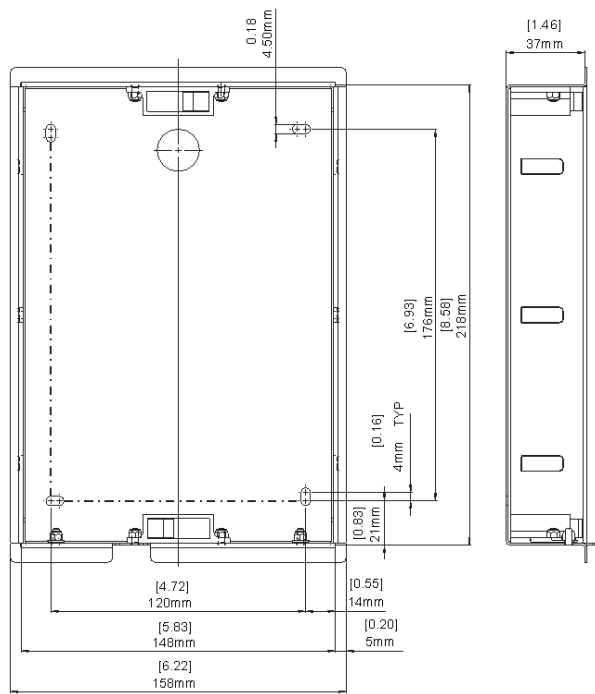


Figure 5-28: Dimensional Drawing, Recessed Mount Wall Control Unit

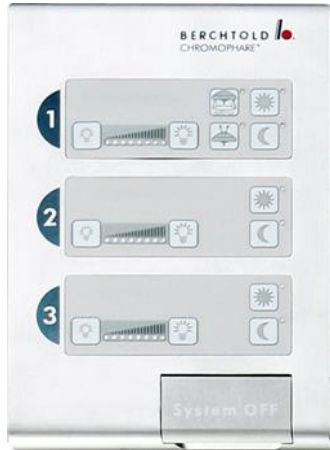


Figure 5-29: Wall Control Unit, Front

The Wall Control Unit is provided with CHROMOPHARE® single, dual and triple combination surgical lights, except when specified.

For E-Series light heads, the wall control unit consists of a metallic faceplate with keypad overlays.

For F-Generation surgical lights, the wall control unit may consist of a metallic faceplate with keypad overlays, or an optional interactive touch screen.

The mounting parameters of both options are identical and described herein.

For dimensional data on the surface-mounted wall box, refer to Figure 5-27: Dimensional Drawing, Surface Mount Wall Control Unit.

For dimensional data on the recessed-mounted wall box, refer to Figure 5-28: Dimensional Drawing, Recessed Mount Wall Control Unit.

5.7.1 Surface Mount Wall Control Unit

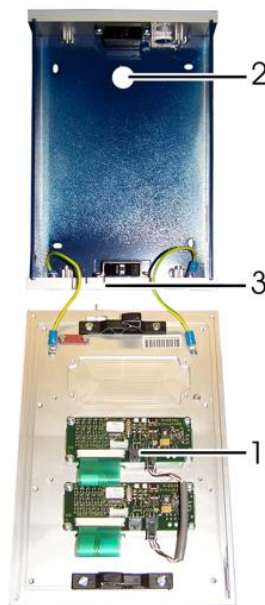


Figure 5-30: Surface Mount Wall Control Unit, Interior

- Connection cable connected to CAN distribution board

After removing the countersunk hexagonal plug, the light's connection cables to the CAN distribution board (mounted on the ceiling flange), connect at (1) can be run through the wall box at the back (2) or on the underside (3).

If the opening on the underside is used, the screw holders included in the delivery as the cable feed-through must be used.



The CAN BUS termination point must **not** be located further than 45 ft. (15 m) from the ceiling tube or SK Enclosure.

5.7.2 Recessed Mount Wall Control Unit

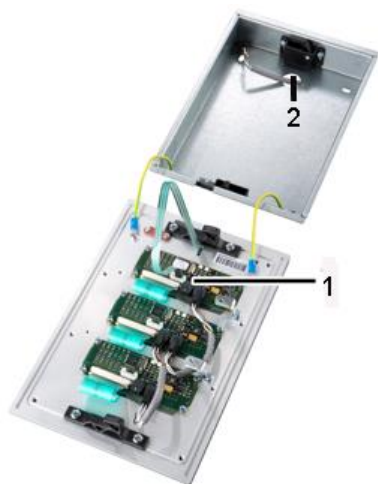


Figure 5-31: Recessed Wall Control Unit, Interior

- Connection cable connected to CAN distribution board

The light's connection cables to the CAN distribution board (mounted on the ceiling flange), connected at (1) are run through the wall box at the back (2).



The CAN BUS termination point must not be located further than 45 ft. (15 m) from the ceiling tube or SK Enclosure.

5.7.3 SK Enclosure Integrated Wall Control Unit

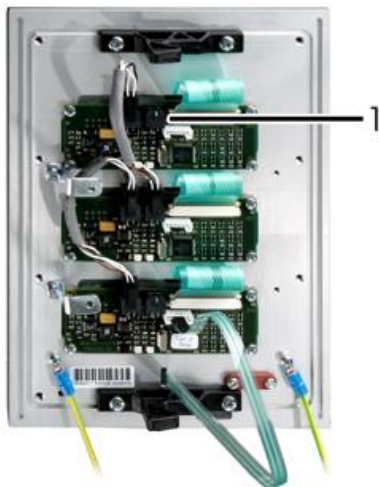


Figure 5-32: SK Enclosure Integrated Wall Control Unit, Interior

- Connection cable connected to CAN distribution board.
- Connection for integration will require cable run to a remote location determined at time of installation.

The light's connection cable to the CAN distribution board (mounted on the ceiling flange), connected at (1) has to be routed into the front panel.



The CAN BUS termination point must not be located further than 45 ft. (15 m) from the ceiling tube or SK Enclosure.

6 Technical Data

6.1 Connection Loads

Video/Power Arm (VPA)[™]

Location	Voltage (VAC)	Max Circuit Load (A)	Frequency (Hz)
North America	120	16	60

6.2 Operating Conditions

All models

Specifications	Value	Unit
Ambient temperature	50...95 10...35	°F °C
Relative humidity, non-condensing	30...75	%
Barometric pressure	10.14...15.4 700...1060	PSI hPa

6.3 Emissions

- Refer to the CHROMOPHARE[®] Surgical Lights, Single and Combination Lights Operating Manual (57404) for product emission information or see Related Publications listed on the inside cover of this manual.

7 Terms of Use

7.1 Limited Liability

All specifications and notices in this manual were compiled using best practices and regulations, the current state of technology, and BERCHTOLD's many years of experience and knowledge.

The manufacturer assumes no liability for damages resulting from:

- Non-compliance with the operating instructions
- Improper operation
- Work performed by untrained personnel
- Unauthorized modifications
- Technical changes
- Installation of non-approved spare parts
- Performance of unauthorized installation and maintenance work

Explanations and illustrations in this manual may deviate from the actual product delivered for special models, additional options, or the latest technical changes.

All obligations are applicable as agreed to in the delivery contract, the general terms and conditions, the manufacturer's delivery terms, and any regulations legally valid at the time the contract was concluded.

BERCHTOLD reserves the right to make technical modifications to improve and further develop the products.

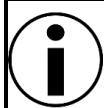
7.2 Warranty

Warranty provisions and general terms and conditions information can be requested through the BERCHTOLD website:

<http://www.berchtoldusa.com/contact-us>.

7.3 Copyright

This CHROMOPHARE® Pre-Install Manual should be treated as confidential to and for the exclusive use of persons handling the equipment. This manual may not be transferred to third parties without written approval from BERCHTOLD.



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7.4 Customer Service

For questions, contact BERCHTOLD:

Via web, visit:

<http://www.berchtoldusa.com/contact-us>

Mailing Address:

BERCHTOLD
1950 Hanahan Road | Charleston, SC 29406

Phone: 843-569-6100

Phone: 800-243-5135, Option 2

Fax: 843-569-6133

E-Mail Info@berchtold.biz

7.5 Regulatory Information

The device is UL listed (E347014) to meet ANSI/AAMI E60601-1 (2005 + A2:10), UL guide MDAF, Medical Equipment - General Medical Equipment and CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance), UL guide card MDAF7.

For over 90 years, BERCHTOLD has been a world leader in the design and manufacture of quality medical equipment. With our focus on improving patient outcomes, we deliver best in class products, experienced planning and project management and service with a personal touch. We measure our success by the quality of our customer and employee relationships.

Our products and services ...

- CHROMOPHARE® surgical and examination lights
- ChromoVision® video and camera systems
- ChromoView monitor arms
- TELETOM® equipment management systems
- OPERON® surgical tables including a full range of accessories
- SUPERSUITE® custom surgical environments
- ByDesign™ surgical room design software
- Design, consulting, project management and customer support
- Factory trained service and installation support
- ORICS® COMMUNICATION SYSTEMS
(this product available outside of the USA)
- IntegraMount™ construction mounting solution

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BERCHTOLD

1950 Hanahan Road | Charleston, SC 29406

Phone: 843-569-6100

Phone: 800-243-5135

Fax: 843-569-6133

E-Mail Info@berchtold.biz

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