PHILIPS

Healthcare

www.healthcare.philips.com

Revision History

Note for Architects and/or Contractors: If revisions are listed, these drawings must be thoroughly reviewed so that all changes can be incorporated into your project.

Rev.	Date	Revision Descriptions.	By

Table of Contents

PHILIPS

Project
Bucky Diagnost FS Standard
Standard Reference Drawing
Not Site Specific
-

Philips Contacts
Project Manager:
Contact Number:
Email:
Drawn By:

Project Details
Drawing Number
N-SRD030008
Date Drawn: 11/12/2010
Quote: None
Order: None

C1

General Specifications

1. Responsibility
The customer shall be solely responsible, at its expense for preparation of site, including any required structural alterations. The site preparation shall be in accordance with plans and specifications provided by Philips. Compliance with all safety electrical and building codes relevant to the equipment and its installation is the sole responsibility of customer. The customer shall advise Philips of conditions at or near the site which could adversely affect the carrying out of the installation work and shall ensure that such conditions are corrected and that the site is fully prepared and available to Philips before the installation work is due to begin. The customer shall provide all necessary plumbing, carpentry work, or conduit wiring required to attach and install products ready for use.

2. Permits
Customer shall obtain all permits and licenses required by federal, state/provincial or local authorities in connection with the construction, installation and operation of the products and related rules, regulations, shall bear any expense in obtaining same or in complying with any ordinances and statutes.

3. Radiation Protection
The customer or his contractor, at his own expense, shall obtain the service of a licensed radiation physicist to specify radiation protection. (X-Ray Tube output 150 KVp max.)

4. Asbestos and Other Toxic Substances
Philips assumes no hazardous waste (i.e., PCB's in existing transformers) exists at the site. If any hazardous material is found, it shall be the sole responsibility of the customer to properly remove and dispose of this material at its expense. Any delays caused in the project for this special handling shall result in Philips time period for completion being extended by like period of time. Philips assumes that no asbestos material is involved in this project in any ceilings, walls or floors. If any asbestos material is found anywhere on the site, it shall be the customer's sole responsibility to properly remove and/or make safe this condition, at the customer's sole expense.

5. Labor
In the event local labor conditions make it impossible or undersirable to use Philips' regular employees for such installation and connection, such work shall be performed by laborers supplied by the customer, or by an independent contractor chosen by the customer at the customer's expense, and in such case, Philips agrees to furnish adequate engineering supervision for proper completion of the installation.

6. Schedule
The general contractor should provide Philips with a schedule of work to assist in the coordination of delivery of Philips supplied products which are to be installed by the contractor and delivery of the primary equipment.

7. Extended Installation or Turnkey Work by Philips
Any room preparation requirements for Philips equipment indicated on these drawings is the responsibility of the customer. If an extended installation or turnkey contract exists between Philips and the customer for room preparation work required by the equipment represented on these drawings, some of the responsibilities of the customer as depicted in these drawings may be assumed by Philips. In the event of a conflict between the work described in the turnkey contract workscope and these drawings, the turnkey contract workscope shall govern.

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HVAC Requirement for General Equipment Locations

Heating, ventilation, air conditioning requirement for general equipment locations must maintain temperature at 75° +/- 11° Fahrenheit (24° +/- 6° Celsius) and non-condensing relative humidity at 47%, +/- 28%.

(08.1)

Electrical Requirements (10.0)

Optimus 80

Supply Configuration: 3 phase, 3 wire power and ground. Delta or wye.

Nominal Line Voltage: 400, 440, 460 or 480 VAC, 60 Hz

Branch Power Requirement: 167 KVA

Circuit Breaker: 3 pole, 100 Amps (@ 480V)

Minimum Site Preparation Requirements

A smooth efficient installation is vital to Philips and their customers. Understanding what the minimum site preparation requirements are will help achieve this goal. The following list clearly defines the requirements which must be fulfilled before the installation can begin.

1. Walls to be painted or covered, baseboards installed, floors to be tiled and/or covered, ceiling shall have grid tiles and lighting fixtures installed and operational.

2. Doors and windows, especially radiation protection barriers, installed and finished with locksets operational.

3. All electrical convenience, conduit, raceway, knockouts, cable openings, chase nipples, and junction boxes installed and operational.

4. Incoming mains power operational and connected to room x-ray breaker.

5. 115v convenience outlets operational.

6. All support structure correctly installed. All channels, pipes, beams and/or other supporting devices should be level, parallel, and free of lateral or longitudinal movements.

7. All contractor supplied cables pulled and terminated.

8. A dust-free environment in and around the procedure room.

9. All HVAC (heating, ventilating and air conditioning) installed and operational as per specifications. BTUs shown on sheet A1 are average heat capacity.

10. Architectural features such as computer floor, wood floor, casework, bulkheads, installed and finished. When technical cabinets are installed in a closet with doors, it is suggested that the customer install a temperature alarm in the event of an air conditional failure.

11. All plumbing installed and finished.

12. Philips does not install or connect developing tanks, automatic processors or associated equipment, built in illuminators, cassette pass boxes, loading benches and cabinets, lead protective screens, panels or lead glass window and frame. This is to be done by the customer/contractor.

13. Refer to Transport Information page for clear door openings and corridor widths.

Note
Once Philips has moved equipment into the suite and started the installation, the contractor shall schedule his work around the Philips installation team on site. It is suggested that a telephone be provided in the room to receive telephone calls. This would alleviate facility staff from answering calls for Philips personnel.

Remote Service Diagnostics
Medical imaging equipment to be installed by Philips Medical is equipped with a service diagnostic feature which allows for remote and on site service diagnostics. To establish this feature, a RJ45 type ethernet 10/100/1000 Mbit network connector must be installed as shown on plan. Access to customer's network via their remote access server is needed for Remote Service Network (RSN) connectivity. All cost with this feature are the responsibility of the customer.

(08.0)

PHILIPS

Project
Bucky Diagnost FS Standard
Standard Reference Drawing
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Drawing Number
N-SRD030008
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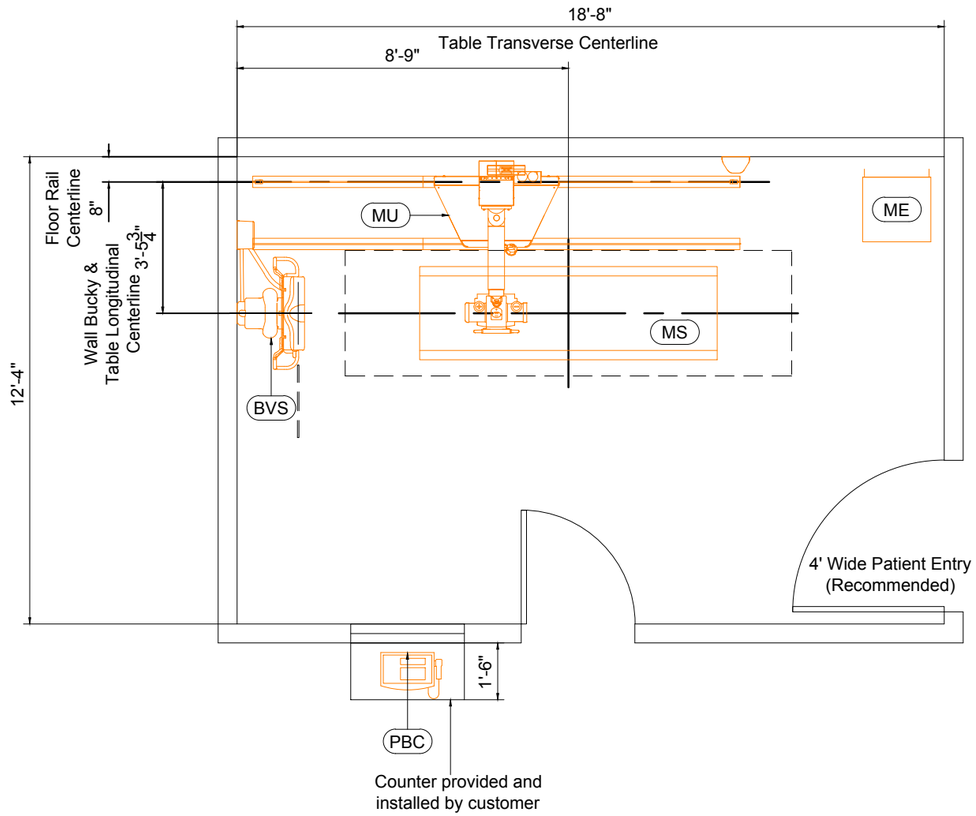
AN



Equipment Layout

Absolute Minimum Ceiling Height: 7'-11 9/32" [2420mm]

Reported Existing Ceiling Height: None

Ceiling heights (from finished floor to finished ceiling) other than recommended may impact equipment functionality; consult with Philips.

Equipment Legend

A Furnished and installed by Philips
B Furnished by customer/contractor and installed by customer/contractor
C Installed by customer/contractor
D Furnished by Philips and installed by contractor
E Existing
F Future
G Optional item furnishd by Philips

	Equipment Designation	Description	Detail Sheet: Weight (lbs)	Detail Sheet: Heat Load (btu/hr)	Detail Sheet
A	ME	Optimus 80 Control Cabinet (40E Rack)	462	1707	AD1
A	PBC	Optimus Control Panel	9	137	AD1
A	MU	Bucky Diagnost FS Standard	528	1467	AD1
A	MS	BuckyDiagnost TH/TH2 (Standard Tabletop)	615	1092	AD2
A	BVS	BuckyDiagnost VS Advanced (Left)	439	546	AD2

Site Planning Issues/Considerations

* 72" S.I.D. to Wall Bucky is available above tabletop only.
* 40" S.I.D. to Wall Bucky is available below tabletop when tabletop is moved away from the Wall Bucky.

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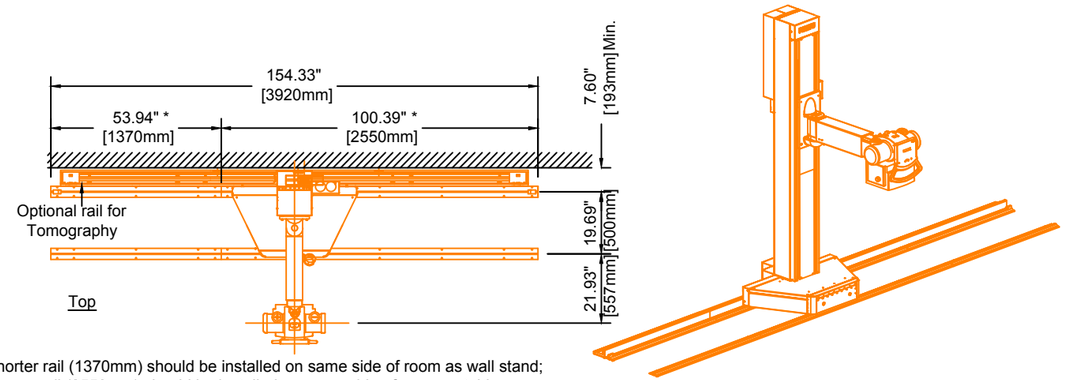
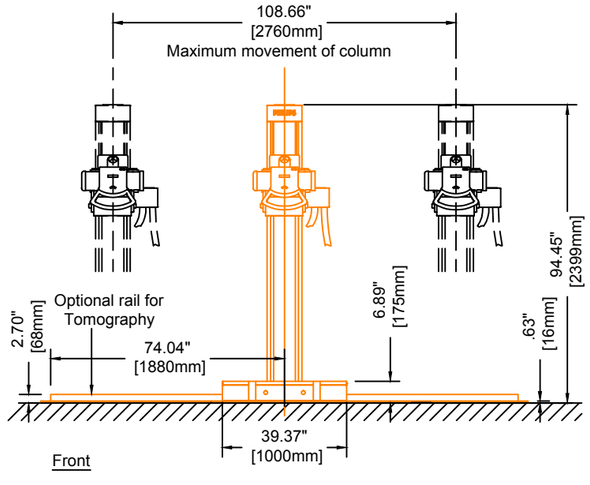
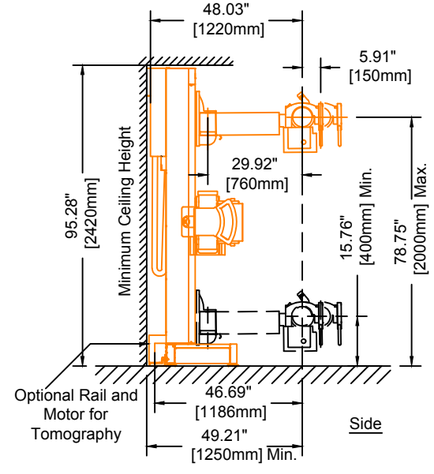
A1



* Shorter rail (1370mm) should be installed on same side of room as wall stand;
Longer rail (2550mm) should be installed on same side of room as table.





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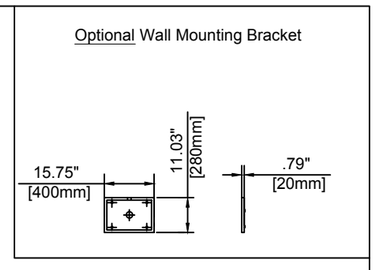
MU	Bucky Diagnost FS (Standard Version)	
Weight	528 lbs	(240 kg)
Heat Dissipation	1467 Btu/hr	(370 kcal/hr)



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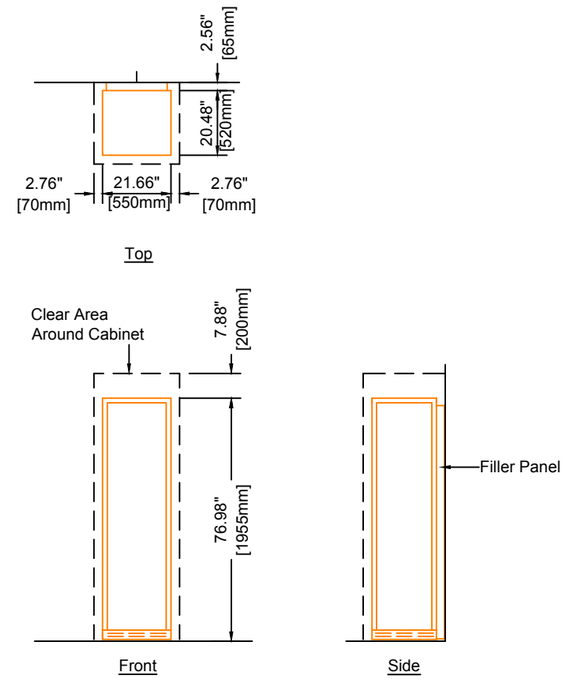
PBC	Optimus Control Panel	
Weight	9 lbs	(4 kg)
Heat Dissipation	137 Btu/hr	(35 kcal/hr)



Noise measured @ 1 meter distance in 1 meter height over floor = 46 dB(A).

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ME	Optimus 50/65/80 Control Cabinet	
Weight	462 lbs	(210 kg)
Heat Dissipation	1707 Btu/hr	(430 kcal/hr)

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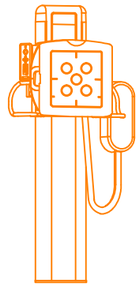
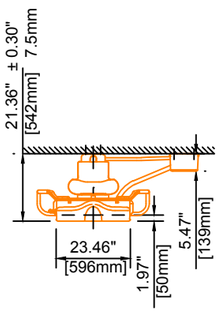
AD1

4.29.10





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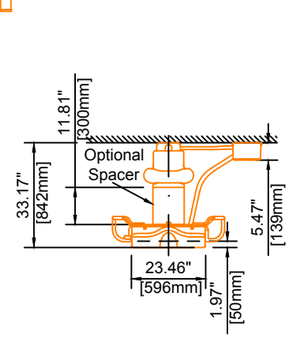

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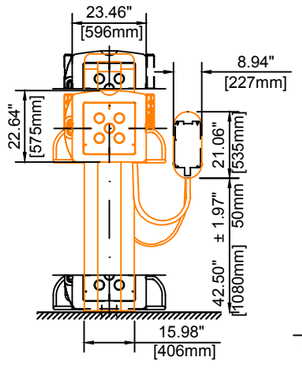

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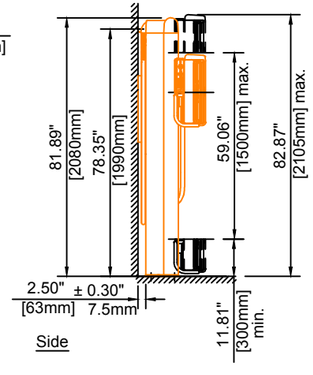
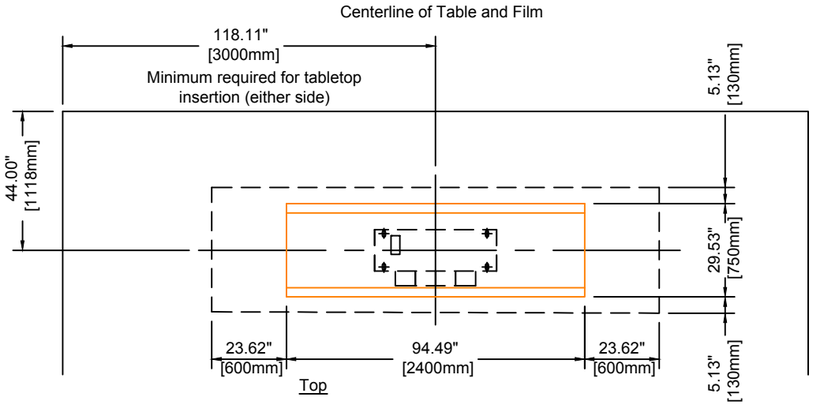


Side

(09.0)

BVS	BuckyDiagnost VS Advanced	
Weight	439 lbs	(198 kg)
Heat Dissipation	546 Btu/hr	(138 kcal/hr)

Weight of wall connection box: 22 lbs. (10 kg.)



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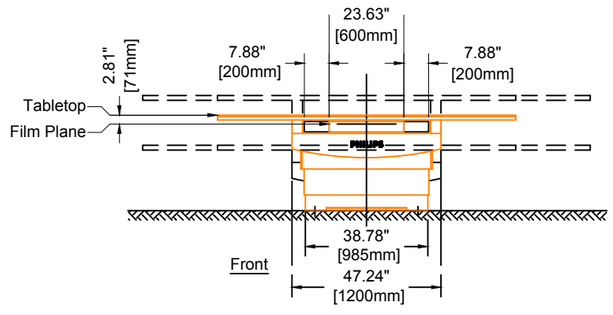

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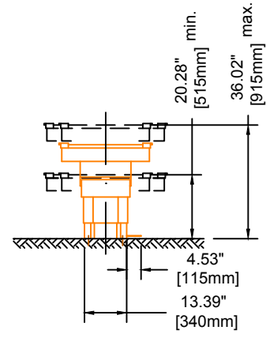

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MS	BuckyDiagnost TH/TH2 (Standard Tabletop)	
Weight	615 lbs	(279 kg)
Heat Dissipation	1092 Btu/hr	(275 kcal/hr)

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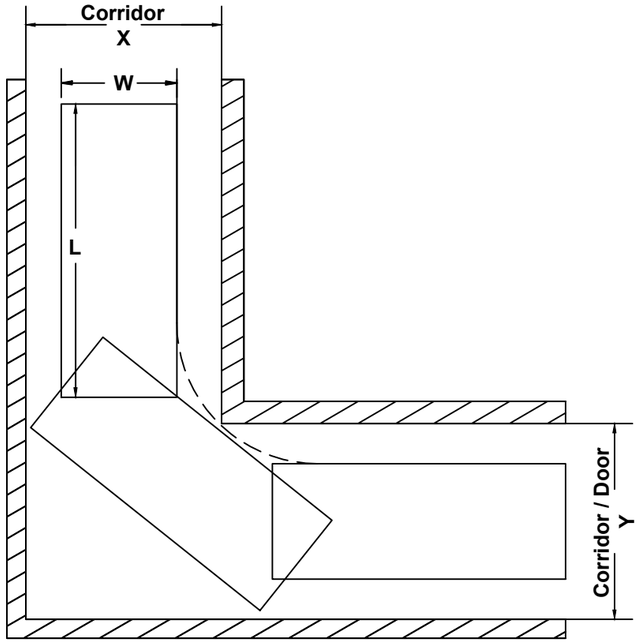
AD2

Bucky FS Standard - (Table, FS Column, Wall Bucky)
Transport Information



	TH/TH2 Table	FS Column	Wall Bucky
	Crate Packed	Create Packed	Crate Packed
Weight	697 lbs (3100 N)	1461 lbs (6500 N)	382 lbs (1700 N)
Height	2'-9" [.83m]	5'-7" [1.68m]	1'-10" [.55m]
Length - L	4'-6" [1.36m]	9'-3" [2.82m]	7'-4" [2.22m]
Width - W	3'-2" [.96m]	3'-4" [1.00m]	2'-6" [.76m]

Size of Corridor X	Minimum Size of Corridor / Door Y	Minimum Size of Corridor / Door Y	Minimum Size of Corridor / Door Y
3'-4" [1.00m]	5'-1" [1.54m]	9'-7" [2.92m]	6'-1" [1.84m]
3'-8" [1.10m]	4'-6" [1.63m]	8'-9" [2.66m]	5'-8" [1.72m]
4'-0" [1.20m]	4'-1" [1.25m]	8'-2" [2.48m]	5'-3" [1.60m]
4'-4" [1.30m]	3'-10" [1.17m]	7'-8" [2.33m]	4'-11" [1.49m]
4'-8" [1.40m]	3'-9" [1.12m]	7'-3" [2.19m]	4'-7" [1.39m]
5'-0" [1.50m]	3'-8" [1.08m]	6'-6" [1.97m]	4'-4" [1.30m]
5'-3" [1.60m]	3'-6" [1.06m]	6'-6" [1.97m]	3'-11" [1.21m]
5'-7" [1.70m]	3'-6" [1.06m]	6'-2" [1.86m]	3'-9" [1.13m]
5'-11" [1.80m]	3'-6" [1.06m]	5'-10" [1.76m]	3'-6" [1.06m]
6'-3" [1.90m]	3'-6" [1.06m]	5'-6" [1.66m]	3'-3" [.99m]
6'-7" [2.00m]	3'-6" [1.06m]	5'-3" [1.58m]	3'-2" [.95m]

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AD3

4.29.10

Equipment Support Information

1. General
The customer shall be solely responsible, at its expense, for preparation of the site, including any required structural alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and building codes. The customer shall be solely responsible for obtaining all construction permits from jurisdictional authority.

2. Equipment Anchorage
Philips provides, with this plan and specifications, information relative to equipment size, weight, shape, anchoring hole locations and forces which may be exerted on anchoring fasteners. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of equipment anchoring to floors, wall and/or ceiling of the building. Any anchorage test required by local authority shall be the customer's responsibility. Stud type anchor bolts should not be specified as they hinder equipment removal for service. Consult with Philips service prior to specifying anchor methods.

3. Floor Loading and Surface
Philips provides, with this plan and specifications, information relative to size, weight and shape of floor mounted equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings confirmation of the structural adequacy of the floor upon which the equipment will be placed. Any load test required by local authority, shall be the customer's responsibility.
The floor surface upon which Philips equipment is to be placed/anchored shall be flat and level to within plus or minus 1/16 inch (2mm) over a length of 39" (1m).

4. Ceiling Support Apparatus
a. Philips provides, with this plan and specifications, information relative to size, weight and shape of ceiling supported equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of structural support apparatus, fasteners and anchorage to which Philips will attach equipment. Any anchorage and/or load test required by local authority shall be the customer's responsibility. See SD sheets for specific load forces.

b. Contractor to clearly mark Philips equipment longitudinal centerline on bottom of each structural support.

c. The structural support apparatus surface to which Philips equipment is to be attached, shall have horizontal equipment attachment surfaces parallel, square and level to within plus or minus 1/16" (2mm).

d. Any drilling and/or tapping of holes required to attach Philips equipment to the structural support apparatus shall be the responsibility of the customer.

e. Fasteners/anchors (i.e., bolts, spring nuts, lock and flat washers) and strip closures shall be provided by the customer.

5. Lighting
Lighting fixtures shall be placed in such a position that they are not obscured by equipment or its movement, nor shall they interfere with Philips ceiling rails and equipment movement or otherwise adversely affect the equipment. Such lighting fixture locations shall be the sole responsibility of the customer.

6. Ceiling Obstructions
There shall be no obstructions that project below the finished ceiling in the area covered by ceiling suspended equipment travel.

7. Seismic Anchorage (For Seismic Zones Only)
All seismic anchorage hardware, including brackets, backing plates, bolts, etc., shall be supplied and installed by the customer/contractor unless otherwise specified within the support legend on this sheet. Installation of electronic cabinets to meet seismic anchorage requirements must be accomplished using flush mounted expansion type anchor/bolt systems to facilitate the removal of a cabinet for maintenance. Do not use threaded rod/adhesive anchor systems. Consult with Philips regarding any anchor system issues.

8. Floor Obstructions/ Floor Coverings
There shall be no obstructions on the floor (sliding door tracks, etc.) in front of the Philips technical cabinets. Floor must be clear to allow cabinets to be pulled away from the wall for service.

Contractor to verify with Philips the preferred floor covering installation method.

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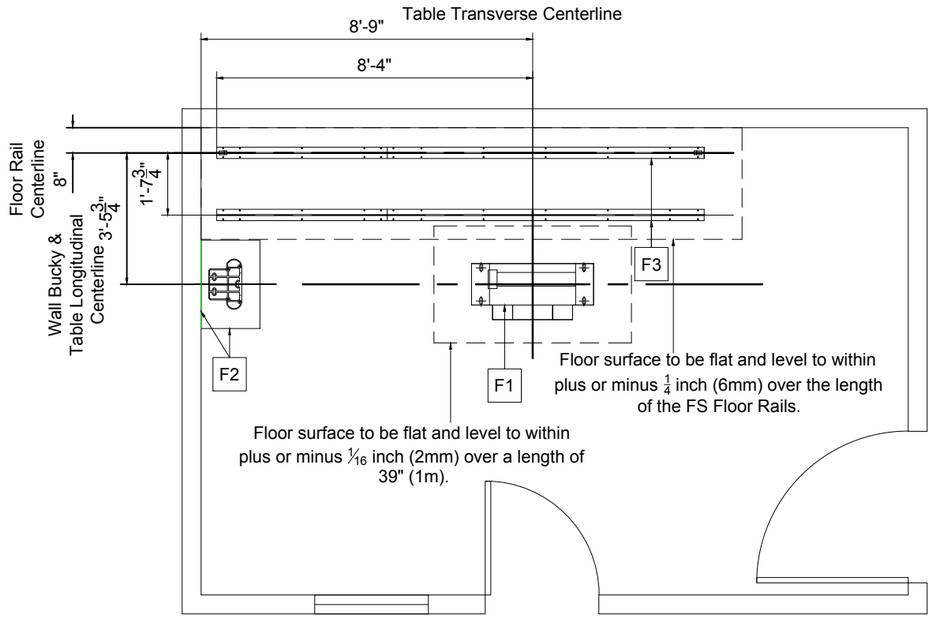

Floor & Wall Support Legend

A Furnished and installed by Philips
B Furnished by customer/contractor and installed by customer/contractor
C Installed by customer/contractor
D Furnished by Philips and installed by contractor
E Existing
F Future
G Optional

	Item Number	Description	Detail Sheet
B	F1	Anchorage in floor for Diagnost TH	SD2
B	F2	Anchorage in wall and floor for Bucky Diagnost VS	SD2
B	F3	Anchorage in floor for Bucky Diagnost FS Floor Rail	SD1

All dimensions must be off of the finished wall.

If a wall is furred out to hide electrical duct or boxes, the dimensions included in this plan must come off of the finished furred wall.

Floor & Wall Support Layout

Absolute Minimum Ceiling Height: 7'-11 9/32" [2420mm]

Ceiling heights (from finished floor to finished ceiling) other than recommended may impact equipment functionality; consult with Philips.

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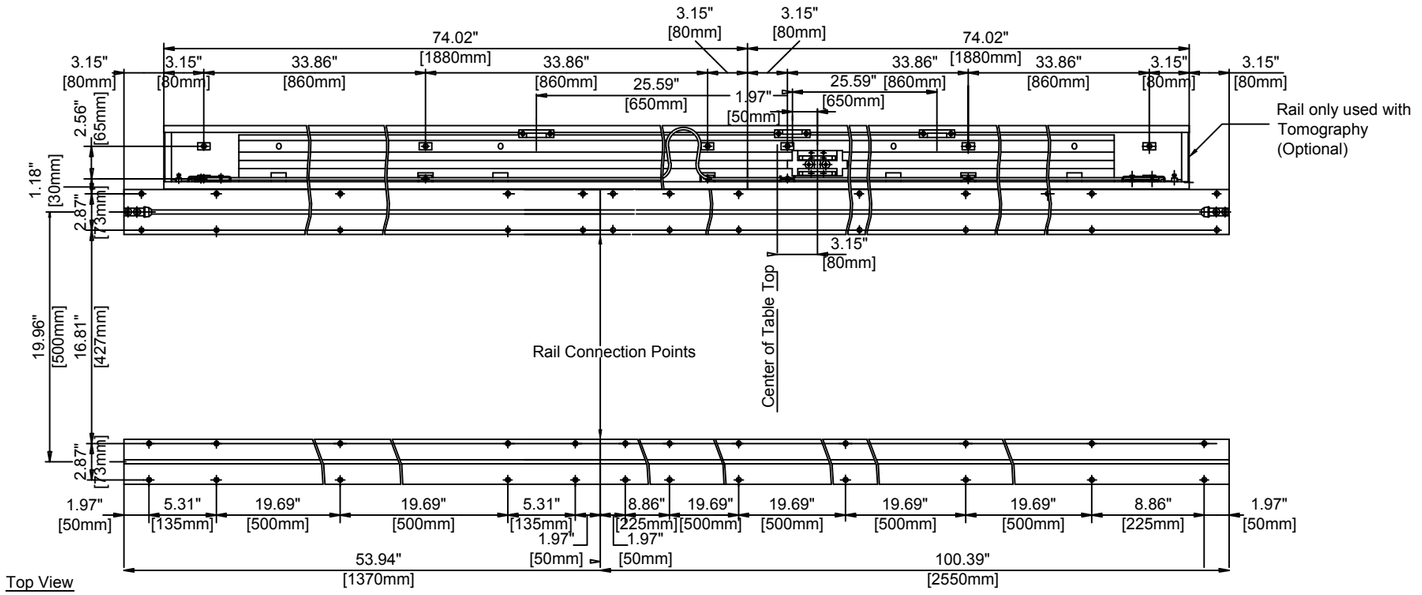
S1

Detail - Bucky Diagnost FS Standard Floor Rail

(Not to scale)

Bolt Forces
Tmax (Tension) = 194 lbs/bolt
Vmax (Shear) = 33 lbs/bolt



Fixation Material (NOT part of delivery)

A - Philips screw 4 x 50 + 8mm dowels or equivalent for concrete floors

B - Countersunk head screw M5x30

Customer/contractor shall recommend and/or provide equipment anchoring systems (i.e. "hilti", "redhead", etc) based upon specified pull forces and wall, ceiling, and/or floor compositions.

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F3

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SD1

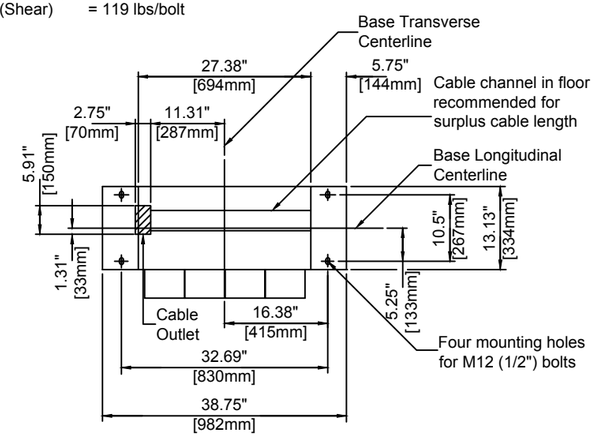
4.29.10

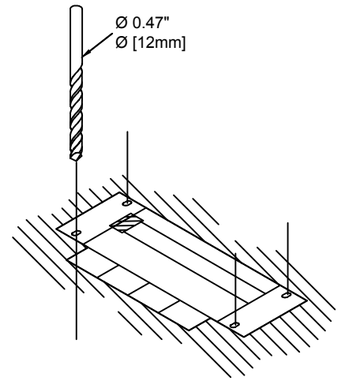
Detail - Diagnost TH / TF Table Base

(Not to scale)

Bolt Forces
T max (Tension) = 124 lbs/bolt
V max (Shear) = 119 lbs/bolt

The Diagnost TH/TF base mounts directly to the floor.
Floorplates are not used



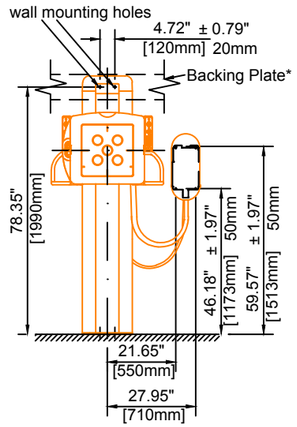


F1

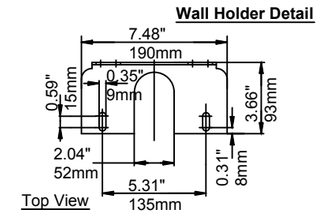
Customer/contractor shall recommend and/or provide equipment anchoring systems (i.e. "hilti", "redhead", etc) based upon specified pull forces and wall, ceiling, and/or floor compositions.

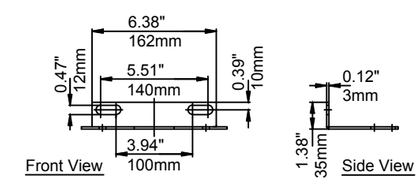
Detail - BuckyDiagnost VS (09.0)

Not to Scale

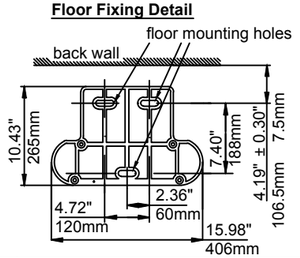


Wall Holder Detail





Floor Fixing Detail



Bolt Forces:
T max (Tension)(wall) = 424 lbs/bolt (max)
V max (Shear)(wall) = 100 lbs/bolt (max)
V max (Shear)(floor) = 317 lbs/bolt (max)

* The customer's architect/engineer of record shall specify a wall backing plate sufficient for the bolt forces shown above. Below are Philips' pre-evaluated and approved methods of mounting:

Anchor Style	Anchor Size	Wall Support Size & Material
Through Bolt	3/8" diameter	Minimum 10 gauge steel plate [1], or Minimum 4"x4" Douglas Fir # 2 grade
Self Drilling Tek Screw	# 14	Minimum 10 gauge steel plate [1]
Lag Screw	7/16"	Minimum 4"x4" Douglas Fir # 2 grade
Toggler Snaptoggle Anchor	3/8" diameter expansion screw	Minimum 10 gauge steel plate [1]

F2

[1] Unistrut, angle, or c -channel material is preferred.

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Date Drawn: 11/12/2010
Quote: None
Order: None

SD2

4.29.10

General Electrical Information

1. **General**
   The customer shall be solely responsible, at its expense, for preparation of the site, including any required electrical alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and electrical codes, the customer shall be solely responsible for obtaining all electrical permits from jurisdictional authority.
2. **Materials and Labor**
   The customer shall be solely responsible, at its expense, to provide and install all electrical ducts, boxes, conduit, cables, wires, fittings, bushing, etc., as separately specified herein.
3. **Electrical Ducts and Boxes**
   Electrical ducts and boxes shall be accessible and have removable covers. Floor ducts and boxes shall have watertight covers. Ducts shall be divided into as many as three separate channels by metal dividers, separately specified herein, to separate wiring and/or cables into groups as follows: Group a: power wiring and/or cables. Group b: signal and/or data and protective ground wiring and/or cables. Group c: X-ray high voltage cables. The use of 90° ells is not acceptable. On ceiling duct and wall duct use 45° bends at all corners. All intersecting points in duct to have cross over tunnels supplied and installed by contractor to maintain separation of cables.
4. **Conduit**
   Conduit point-to-point runs shall be as direct as possible. Empty conduit runs used for cables may require pull boxes located along the run. Consult with Philips. A pull string or cord shall be installed in each conduit run. All conduits that enter duct prior to their termination point must maintain separation from other cables via use of dividers, cross over tunnels, or flex conduit supplied and installed by contractor from entrance into duct to exit from duct.
5. **Conductors**
   All conductors, separately specified, shall be 75°C stranded copper, rung out and marked.
6. **Disconnecting Means**
   A disconnecting means shall be provided as separately specified.
7. **Warning Lights and Door Switches**
   "X-Ray On" warning lights and X-ray termination door switches should be provided at all entrances to x-ray rooms as required by code.
8. **Dimmer Switches**
   X-ray room lights should be provided with dimmer switches.

(08.0)

Electrical Requirements

Electrical power distribution at the facility shall comply with:

Utilization voltages per ANSI C84.1 - 1982 range A.

Voltage to be supplied is 3 phase, 3 wire power and ground (delta or wye) unless otherwise noted in equipment specifications.

Phase conductors to be sized for instantaneous voltage drop per NEC 517 - 73 and Philips recommendations.

Neutral and ground conductors to be sized equivalently to phase conductors, unless otherwise noted.

Metal conduit shall not be used as the equipment ground conductor.

Clamping type surge suppressors are highly recommended in addition to standing facility lighting arrestors. Equipment to be protected from ANSI/IEEE C62.41-1980 location category B impulses.

ANSI / NFPA 70 - National Electrical Code
Article 250 - grounding
Article 517 - health care facilities

ANSI / NFPA 99 - health care facilities

NEMA standard XR0 - power supply guideline for X-Ray machines

(08.0)

Electrical Notes

1. The contractor will supply & install all breakers, shunt trip and incoming power to the breakers. The exact location of the breakers and shunt trips will be determined by the architect or contractor.
2. The contractor shall supply & install all pull boxes, raceways, conduit runs, stainless steel covers, etc. Conduit/raceways must be free from burrs and sharp edges over its entire length. A Greenlee pull string/measuring tape (part no. 435, or equivalent) shall be provided with conduit runs.
3. All pre-terminated, cut-to-length cables will be supplied and installed by Philips Healthcare. All cables to the breakers will be supplied and installed by the contractor, subject to local arrangements.
4. Provide and install four (4) 2" (50 mm) diameter chase nipples between adjacent wall boxes where applicable.
5. Electrical raceway shall be installed with removable covers. The raceway should be accessible for the entire length. In case of non-accessible floors, walls and ceilings, an adequate number of access hatches should be supplied to enable installation of cabling. Approved conduits may be substituted. All raceways will be designed in a manner that will not allow cables to fall out of the raceway when the covers are removed. In most cases, this will require above ceiling raceway to be installed with the covers removable from the top. Raceway system as illustrated in this drawing package is based upon length of furnished cables. Any changes in routing of raceway system could exceed maximum allowable length of furnished cables. Conduit or raceway above ceiling must be kept as near to finished ceiling as possible.
6. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local code or National Electrical Code, whichever governs.
7. Convenience outlets are not illustrated. Their number and location are to be specified by the customer/architect.
8. All sections of raceway and conduit shall be grounded with an independent #6 AWG green wire that is to be attached using solderless lugs. All ceiling mounted structural support members and ceiling plates shall also be grounded. All grounding connections, terminals, etc. shall be installed in a manner to provide accessibility for inspection, maintenance, repair, etc.

(09.0)

Power Quality Guidelines

1. Power supplied to medical imaging equipment must be separate from power feeds to air conditioning, elevators, outdoor lighting, and other frequently switched or motorized loads. Such loads can cause waveform distortion and voltage fluctuations that can hinder high quality imaging.

2. Equipment that utilizes the facility power system to transmit control signals (especially clock systems) may interfere with medical imaging equipment, thus requiring special filtering.

3. The following devices provide a high impedance, non-linear voltage source, which may affect image quality: static UPS systems, series filters, power conditioners, and voltage regulators. Do not install such devices at the mains supply to medical imaging equipment without consulting Philips installation or service personnel.

4. Line impedance is the combined resistance and inductance of the electrical system and includes the impedance of the power source, the facility distribution system, and all phase conductors between the source and the imaging equipment. Philips publishes recommended conductor sizes based on equipment power requirements, acceptable voltage drops, and assumptions about the facility source impedance. The minimum conductor size is based on the total line impedance and NEC requirements. Unless impedance calculations are performed by an electrical engineer, the recommended values must be used.

(09.0)

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Quote: None
Order: None

EN

Electrical Legend

A Furnished and installed by Philips
B Furnished by customer/contractor and installed by customer/contractor
C Installed by customer/contractor
D Furnished by Philips and installed by contractor
E Existing
F Future
G Optional

	Item Number	Description	Detail Sheet
B	CB	480V, 3 phase 100 AMP circuit breaker with shunt trip and load side pressure lugs for #2 A.W.G. extra flexible cable (T + B type 31009 "locktight" or similar). Run power from breaker to wall box "ME", leaving an 8' tail. See Sheet "ED1" for power quality requirements. Location per local code or owner requirements. (Not shown on plan)	ED1
B	ST	Shunt Trip (emergency off) - Large mushroom-head button on remote control station with contacts to operate feature of "CB" (if required by local code or owner, and mandatory for VA and D.O.D installations). (Not shown on plan)	
D	ME	19 1/4"W x 67"H x 4"D flanged-edge terminal wall box with removable screw-type cover plate, surface mounted 75" A.F.F. to top of box. Conduits to terminate on top and sides of the box as required.	ED1
B	JB	8"W x 8"H x 4"D wall box with removable screw-type cover plate, flush mounted 22" A.F.F. to bottom of box. Location shown is recommended and may be changed - verify relocation with local Philips Service. For cables to "PBC".	
B	MS	8"W x 8"L x 4"D floor box with removable gasketted screw-type cover plate, flush mounted.	ED1
B	BVS	6"W x 6"L x 4"D wall box with removable screw-type cover plate, flush mounted 39" A.F.F. to bottom of box.	
B	MU	8"W x 8"H x 4"D wall box with removable screw-type coverplate(s) flush mounted 86" A.F.F. to bottom of box.	
B	WL	Warning Light - Provide an incandescent surface or flush mounted light fixture above door to indicate when X-Ray is on. Provide a 115V, 15A normally open relay in this fixture. (Not shown on plan)	ED1
B	DS	Door Switch - 120V, 5A switch limited to open when door is open. Mount in upper corner on strike side of main entry door(s) (Cooper no. 1665 or equivalent), if required by local code or physicist of record. (Not shown on plan)	ED1

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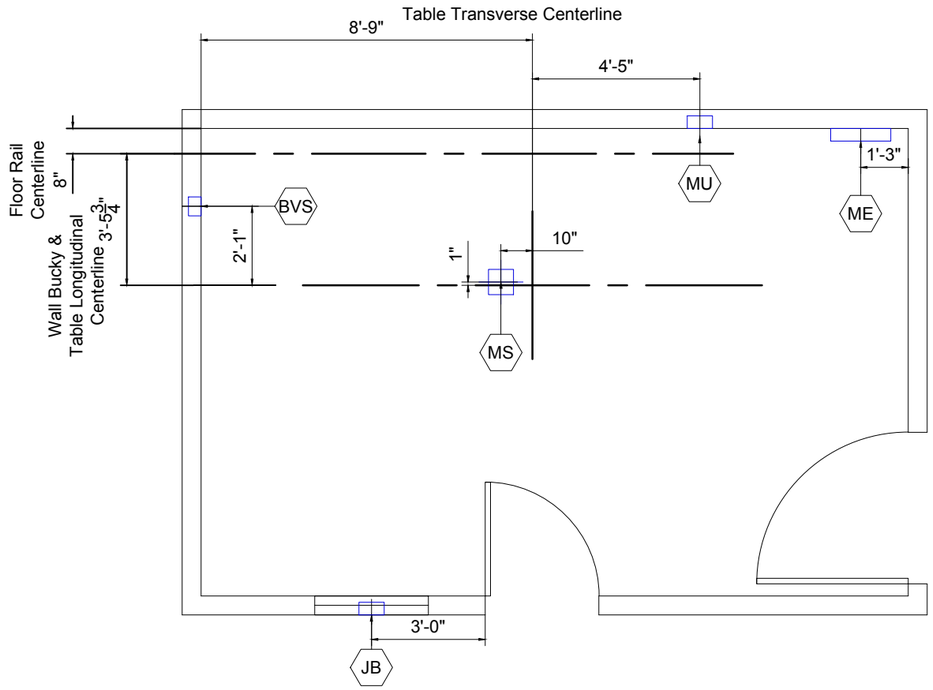
EL



Electrical Layout

Absolute Minimum Ceiling Height: 7'-11 $\frac{9}{32}$" [2420mm]

Ceiling heights (from finished floor to finished ceiling) other than recommended may impact equipment functionality; consult with Philips.

0 1' 2' 4' 8'
0 .5m 1m 2m

Conduit Required

General Notes
1. All conduit runs must take most direct route point to point.
2. All conduit runs must have a pull string.

A Conduit supplied and installed by contractor - Philips cables installed by Philips.
B Conduit supplied and installed by contractor - Philips cables installed by contractor
C Conduit and cables supplied and installed by contractor
D Conduit existing - cables supplied and installed by Philips
E Conduit existing - cables supplied by Philips, installed by contractor
F Conduit existing - cables supplied and installed by contractor

* Cable Type
F Fiber Optic
H High Tension Power Cables
P Power / Ground
S Signal Cables
V Video Cables

	Conduit			Conduit Quantity	Cable Type *	Minimum Conduit Size	Maximum Conduit Length	Special Requirements
	Run No.	From	To					
C	1	Power Panel	CB	1	(P)	Per N.E.C.	Per N.E.C.	
B	2	CB	ME	1	(P)	2"	50'	
C	3	CB	ST	1	(P)	3/4"	50'	
C	4	ME	WL	1	(P)	1/2"	50'	
C	5	ME	DS	1	(P)	1/2"	50'	
A	6	ME	JB	1	(P)	2"	65'	
A	7	ME	JB	1	(S)	2"	65'	
A	8	ME	MS	1	(P)	2 1/2"	19'	
A	9	ME	MS	1	(S)	2 1/2"	19'	
A	10	ME	MU	1	(H/P)	2 1/2"	32'	
A	11	ME	MU	1	(S)	2 1/2"	32'	
A	12	ME	BVS	1	(P)	2"	40'	
A	13	ME	BVS	1	(S)	2 1/2"	40'	

All dimensions must be off of the finished wall.

If a wall is furred out to hide electrical duct or boxes, the dimensions included in this plan must come off of the finished furred wall.

Refer to Electrical Legend - Sheet EL

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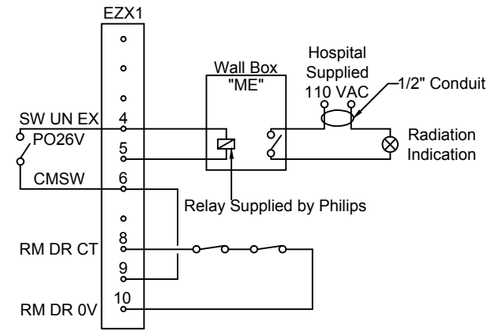
E1



WL DS

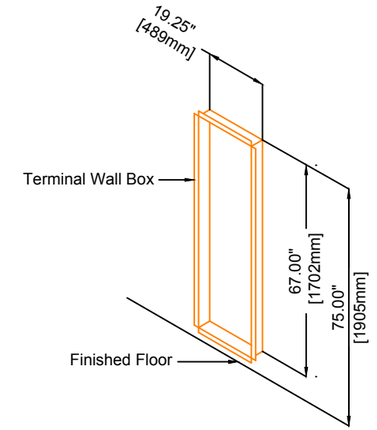
Diagram - X-Ray On Light and Door Switch

(Optimus Rad/RF Generator Only)

(08.0)

Detail - Wall Box Mounting

(Not to scale)

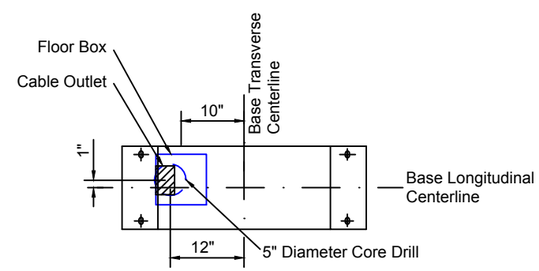


ME

(08.0)

Detail - Diagnost TH Table Base (10.0)

Not to Scale



MS

Provide a 5" diameter core drill if the floor cannot accommodate a standard 8"W x 8"L x 4"D floor box for "MS".

Power Quality Requirements (08.0)

Optimus 80 / Optimus CXA

Power Output:	80 KW
Supply Configuration:	3 phase, 3 wire power and ground, delta or wye
Nominal Line Voltage:	400, 440, 460, or 480 VAC, 60 Hz
Line Voltage Variation:	± 8% steady-state
Line Voltage Balance:	2% maximum of nominal voltage between phases
Frequency Variation:	± 1% (± 0.6 Hz)
Voltage Surges:	To 110% of steady-state voltage 100 msecs. maximum duration, 6 per hour maximum
Voltage Sags:	To 90% of steady-state voltage 100 msecs. maximum duration, 6 per hour maximum
Line Impulses:	1000 VPK above phase-neutral RMS absolute maximum. No more than 1 impulse per hour to exceed 500 VPK.
Neutral-ground Voltage:	2.0 volts maximum RMS value
Neutral-ground Impulses:	No more than 1 per hour that exceeds 25 volts and 1 Mjoule
High Frequency Noise:	3.0 volts steady-state maximum. Over 3.0 volts permitted for 100 msec. maximum, 1 per hour maximum
Ground and Neutral Conductor Impedance:	0.1 Ω @ 60Hz maximum

Branch Circuit and Wire Gauge Requirements

Optimus 80 / Optimus CXA

Branch Power:	167 KVA
Circuit Breaker:	3 pole, 100 amperes (@ 480V)
Maximum Instantaneous Power:	158 KVA (800 MA @ 100 KV) (Short-term), < 8 amperes (Stand-by/Long-term)

Recommended conductor sizes for 1% impedence of branch conductors to circuit breaker (CB), based on 20°C copper conductors:

	400 VAC	440 VAC	460 VAC	480 VAC
#1 AWG	66 feet	79 feet	87 feet	96 feet
1/0 AWG	84 feet	100 feet	110 feet	121 feet
2/0 AWG	106 feet	126 feet	139 feet	152 feet
3/0 AWG	133 feet	159 feet	175 feet	192 feet
4/0 AWG	169 feet	201 feet	221 feet	242 feet
250 MCM	199 feet	230 feet	261 feet	287 feet
300 MCM	239 feet	285 feet	313 feet	344 feet
400 MCM	399 feet	380 feet	418 feet	459 feet
500 MCM	359 feet	476 feet	522 feet	574 feet
Instantaneous Current	228 A	210 A	200A	190 A
Maximum Phase-Phase Impedance	0.2 Ω	0.2 Ω	0.2 Ω	0.2 Ω
Maximum Load Voltage Drop	45.6 V	42.0 V	40.0 V	38.0 V
Percent Regulation at Maximum Load	11.4%	9.5 %	8.7 %	7.9 %

Minimum copper wire size, circuit breaker (CB) to equipment: #2, maximum 50' in length.

CB

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Quote: None
Order: None

ED1

4.29.10

Instructions

This form is to be used by Project Manager, Contractor and Service Engineer.

Information is used to develop and determine site ready date.

Items listed are go/no go items for delivery unless noted as delay only items.

Items identified with *** as delayed items must be completed after hours or on weekend. These items cannot be accomplished while installation is in progress. Also, these items must be completed within two days of installation start or they may stop installation.

Site Readiness Checklist

- ☐ Customer site preparation verified in general against the Philips final planning drawings.
- ☐ Walls finished including painting.
- ☐ Doors installed.
- ☐ Floor leveled according to Philips drawings and specifications.
- ☐ Floors are tiled/covered finished. Flooring is covered with protective covering (scratch protection).
- ☐ Ceiling lights installed.
- ☐ Cable conduit and ductwork installed and clean. Position checked. Duct covers in place but not finally closed. Cable opening are clear, without sharp edges. Pull strings in conduit. Installation per Philips specifications.
- ☐ HVAC environmental equipment installed and working according to Philips specifications.
- ☐ Ceiling installation completed.
- ☐ Electrical preparation according to Philips specifications.
- ☐ All network cabling, drops installed according to Philips specifications (including hardcopy cameras).
- ☐ All pre-cabling identified on Philips drawings has been installed.
- ☐ Pre-move survey completed - Delivery route identified.
- ☐ Led glass installed ***.
- ☐ X-ray warning lights installed ***.
- ☐ Dedicated phone line for modem use***.
- ☐ Room has been cleaned ***.
- ☐ Cabinets and casework installed***.

Modality Checklist

- ☐ Unistrut installed and level according to Philips specifications.
- ☐ Blocking support for wall stand.
- ☐ Conduit lengths measured according to Philips specifications. NOTE: Specifications are from source box to destination box (not just conduit run length).
- ☐ Wall support for wall stand.

Approved for Delivery

Project Manager Date

Service Engineer Date

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CHK