



GE Healthcare

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**GE Healthcare
DR-F Pre-Installation**



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Important Precautions

LANGUAGE

- ПРЕДУПРЕЖДЕНИЕ** • **ТОВА УПЪТВАНЕ ЗА РАБОТА Е НАЛИЧНО САМО НА АНГЛИЙСКИ ЕЗИК.**
- (BG) • **АКО ДОСТАВЧИКЪТ НА УСЛУГАТА НА КЛИЕНТА ИЗИСКА ЕЗИК, РАЗЛИЧЕН ОТ АНГЛИЙСКИ, ЗАДЪЛЖЕНИЕ НА КЛИЕНТА Е ДА ОСИГУРИ ПРЕВОД.**
- **НЕ ИЗПОЛЗВАЙТЕ ОБОРУДВАНЕТО ПРЕДИ ДА СТЕ СЕ КОНСУЛТИРАЛИ И РАЗБРАЛИ УПЪТВАНЕТО ЗА РАБОТА.**
- **НЕСПАЗВАНЕТО НА ТОВА ПРЕДУПРЕЖДЕНИЕ МОЖЕ ДА ДОВЕДЕ ДО НАРАНЯВАНЕ НА ДОСТАВЧИКА НА УСЛУГАТА, ОПЕРАТОРА ИЛИ ПАЦИЕНТ В РЕЗУЛТАТ НА ТОКОВ УДАР ИЛИ МЕХАНИЧНА ИЛИ ДРУГА ОПАСНОСТ.**

警告

(ZH-CN)

- 本维修手册仅提供英文版本。
- 如果维修服务提供商需要非英文版本，客户需自行提供翻译服务。
- 未详细阅读和完全理解本维修手册之前，不得进行维修。
- 忽略本警告可能对维修人员，操作员或患者造成触电、机械伤害或其他形式的伤害。

VÝSTRAHA

(CS)

- **TENTO PROVOZNÍ NÁVOD EXISTUJE POUZE V ANGLICKÉM JAZYCE.**
- **V PŘÍPADĚ, ŽE EXTERNÍ SLUŽBA ZÁKAZNÍKŮM POTŘEBUJE NÁVOD V JINÉM JAZYCE, JE ZAJIŠTĚNÍ PŘEKladU DO ODPOVÍDAJÍCÍHO JAZYKA ÚKOLEM ZÁKAZNÍKA.**
- **NESNAŽTE SE O ÚDRŽBU TOHOTO ZAŘÍZENÍ, ANIŽ BYSTE SI PŘEČETLI TENTO PROVOZNÍ NÁVOD A Pochopili JEHO OBSAH.**
- **V PŘÍPADĚ NEDODRŽOVÁNÍ TĚTO VÝSTRAHY MŮŽE DOJÍT K PORANĚNÍ PRACOVNÍKA PRODEJNÍHO SERVISU, OBSLUŽNÉHO PERSONÁLU NEBO PACIENTŮ VlivEM ELEKTRICKÉHO PROUDU, RESPEKTIVE VlivEM MECHANICKÝCH ČI JINÝCH RIZIK.**

ADVARSEL

(DA)

- **DENNE SERVICEMANUAL FINDES KUN PÅ ENGELSK.**
- **HVIS EN KUNDES TEKNIKER HAR BRUG FOR ET ANDET SPROG END ENGELSK, ER DET KUNDENS ANSVAR AT SØRGE FOR OVERSÆTTELSE.**
- **FORSØG IKKE AT SERVICERE Udstyret MEDMINDRE DENNE SERVICEMANUAL HAR VÆRET KONSULTERET OG ER FORSTÅET.**
- **MANGLENDE OVERHOLDELSE AF DENNE ADVARSEL KAN MEDFØRE SKADE PÅ GRUND AF ELEKTRISK, MEKANISK ELLER ANDEN FARE FOR TEKNIKEREN, OPERATØREN ELLER PATIENTEN.**

WAARSCHUWING

(NL)

- DEZE ONDERHOUDSHANDLEIDING IS ENKEL IN HET ENGELS VERKRIJGBAAR.
- ALS HET ONDERHOUDSPERSONEEL EEN ANDERE TAAL VEREIST, DAN IS DE KLANT VERANTWOORDELIJK VOOR DE VERTALING ERVAN.
- PROBEER DE APPARATUUR NIET TE ONDERHOUDEN VOORDAT DEZE ONDERHOUDSHANDLEIDING WERD GERAADPLEEGD EN BEGREPEN IS.
- INDIEN DEZE WAARSCHUWING NIET WORDT OPGEVOLGD, ZOU HET ONDERHOUDSPERSONEEL, DE OPERATOR OF EEN PATIËNT GEWOND KUNNEN RAKEN ALS GEVOLG VAN EEN ELEKTRISCHE SCHOK, MECHANISCHE OF ANDERE GEVAREN.

WARNING

(EN)

- THIS SERVICE MANUAL IS AVAILABLE IN ENGLISH ONLY.
- IF A CUSTOMER'S SERVICE PROVIDER REQUIRES A LANGUAGE OTHER THAN ENGLISH, IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE TRANSLATION SERVICES.
- DO NOT ATTEMPT TO SERVICE THE EQUIPMENT UNLESS THIS SERVICE MANUAL HAS BEEN CONSULTED AND IS UNDERSTOOD.
- FAILURE TO HEED THIS WARNING MAY RESULT IN INJURY TO THE SERVICE PROVIDER, OPERATOR OR PATIENT FROM ELECTRIC SHOCK, MECHANICAL OR OTHER HAZARDS.

HOIATUS

(ET)

- KÄESOLEV TEENINDUSJUHEND ON SAADAVAL AINULT INGLISE KEELES.
- KUI KLIENDITEENINDUSE OSUTAJA NÕUAB JUHENDIT INGLISE KEELEST ERINEVAS KEELES, VASTUTAB KLIENT TÖLKETEENUSE OSUTAMISE EEST.
- ÄRGE ÜRITAGE SEADMEID TEENINDADA ENNE EELNEVALT KÄESOLEVA TEENINDUSJUHENDIGA TUTVUMIST JA SELLEST ARU SAAMIST.
- KÄESOLEVA HOIATUSE EIRAMINE VÕIB PÕHJUSTADA TEENUSEOSUTAJA, OPERAATORI VÕI PATSIENDI VIGASTAMIST ELEKTRILÖÖGI, MEHAANILISE VÕI MUU OHU TAGAJÄRJEL.

VAROITUS

(FI)

- TÄMÄ HUOLTO-OHJE ON SAATAVILLA VAIN ENGLANNIKSI.
- JOS ASIAKKAAN HUOLTOHENKILÖSTÖ VAATII MUUTA KUIN ENGLANNINKIELISTÄ MATERIAALIA, TARVITTAVAN KÄÄNNÖKSEN HANKKIMINEN ON ASIAKKAAN VASTUULLA.
- ÄLÄ YRITÄ KORJATA LAITTEISTOA ENNEN KUIN OLET VARMASTI LUKENUT JA YMMÄRTÄNYT TÄMÄN HUOLTO-OHJEEN.
- MIKÄLI TÄTÄ VAROITUSTA EI NOUDATETA, SEURAUKSENA VOI OLLA HUOLTOHENKILÖSTÖN, LAITTEISTON KÄYTTÄJÄN TAI POTILAAAN VAHINGOITTUMINEN SÄHKÖISKUN, MEKAANISEN VIAN TAI MUUN VAARATILANTEEN VUOKSI.

ATTENTION
(FR)

- CE MANUEL DE MAINTENANCE N'EST DISPONIBLE QU'EN ANGLAIS.
- SI LE TECHNICIEN DU CLIENT A BESOIN DE CE MANUEL DANS UNE AUTRE LANGUE QUE L'ANGLAIS, C'EST AU CLIENT QU'IL INCOMBE DE LE FAIRE TRADUIRE.
- NE PAS TENTER D'INTERVENTION SUR LES ÉQUIPEMENTS TANT QUE LE MANUEL SERVICE N'A PAS ÉTÉ CONSULTÉ ET COMPRIS.
- LE NON-RESPECT DE CET AVERTISSEMENT PEUT ENTRAÎNER CHEZ LE TECHNICIEN, L'OPÉRATEUR OU LE PATIENT DES BLESSURES DUES À DES DANGERS ÉLECTRIQUES, MÉCANIQUES OU AUTRES.

WARNUNG
(DE)

- DIESE SERVICEANLEITUNG EXISTIERT NUR IN ENGLISCHER SPRACHE.
- FALLS EIN FREMDER KUNDENDIENST EINE ANDERE SPRACHE BENÖTIGT, IST ES AUFGABE DES KUNDEN FÜR EINE ENTSPRECHENDE ÜBERSETZUNG ZU SORGEN.
- VERSUCHEN SIE NICHT DIESE ANLAGE ZU WARTEN, OHNE DIESE SERVICEANLEITUNG GELESEN UND VERSTANDEN ZU HABEN.
- WIRD DIESE WARNUNG NICHT BEACHTET, SO KANN ES ZU VERLETZUNGEN DES KUNDENDIENSTTECHNIKERS, DES BEDIENERS ODER DES PATIENTEN DURCH STROMSCHLÄGE, MECHANISCHE ODER SONSTIGE GEFAHREN KOMMEN.

ΠΡΟΕΙΔΟΠΟΙΗΣΗ
(EL)

- ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ ΔΙΑΤΙΘΕΤΑΙ ΣΤΑ ΑΓΓΛΙΚΑ ΜΟΝΟ.
- ΕΑΝ ΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ ΕΝΟΣ ΠΕΛΑΤΗ ΑΠΑΙΤΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕ ΓΛΩΣΣΑ ΕΚΤΟΣ ΤΩΝ ΑΓΓΛΙΚΩΝ, ΑΠΟΤΕΛΕΙ ΕΥΘΥΝΗ ΤΟΥ ΠΕΛΑΤΗ ΝΑ ΠΑΡΕΧΕΙ ΥΠΗΡΕΣΙΕΣ ΜΕΤΑΦΡΑΣΗΣ.
- ΜΗΝ ΕΠΙΧΕΙΡΗΣΕΤΕ ΤΗΝ ΕΚΤΕΛΕΣΗ ΕΡΓΑΣΙΩΝ ΣΕΡΒΙΣ ΣΤΟΝ ΕΞΟΠΛΙΣΜΟ ΕΚΤΟΣ ΕΑΝ ΕΧΕΤΕ ΣΥΜΒΟΥΛΕΥΤΕΙ ΚΑΙ ΕΧΕΤΕ ΚΑΤΑΝΟΗΣΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ.
- ΕΑΝ ΔΕ ΛΑΒΕΤΕ ΥΠΟΨΗ ΤΗΝ ΠΡΟΕΙΔΟΠΟΙΗΣΗ ΑΥΤΗ, ΕΝΔΕΧΕΤΑΙ ΝΑ ΠΡΟΚΛΗΘΕΙ ΤΡΑΥΜΑΤΙΣΜΟΣ ΣΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ, ΣΤΟ ΧΕΙΡΙΣΤΗ Ή ΣΤΟΝ ΑΣΘΕΝΗ ΑΠΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑ, ΜΗΧΑΝΙΚΟΥΣ Ή ΑΛΛΟΥΣ ΚΙΝΔΥΝΟΥΣ.

FIGYELMEZTETÉS
(HU)

- EZEN KARBANTARTÁSI KÉZIKÖNYV KIZÁRÓLAG ANGOL NYELVEN ÉRHETŐ EL.
- HA A VEVŐ SZOLGÁLTATÓJA ANGOLTÓL ELTÉRŐ NYELVRE TART IGÉNYT, AKKOR A VEVŐ FELELŐSSÉGE A FORDÍTÁS ELKÉSZÍTTETÉSE.
- NE PRÓBÁLJA ELKEZDENI HASZNÁLNI A BERENDEZÉST, AMÍG A KARBANTARTÁSI KÉZIKÖNYVBEN LEÍRTAKAT NEM ÉRTELMEZTÉK.
- EZEN FIGYELMEZTETÉS FIGYELMEN KÍVÜL HAGYÁSA A SZOLGÁLTATÓ, MŰKÖDTETŐ VAGY A BETEG ÁRAMÜTÉS, MECHANIKAI VAGY EGYÉB VESZÉLYHELYZET MIATTI SÉRÜLÉSÉT EREDMÉNYEZHETI.

ADVÖRUN (IS)

- ÞESSI ÞJÓNUSTUHANDBÓK ER EINGÖNGU FÁANLEG Á ENSKU.
- EF AÐ ÞJÓNUSTUVEITANDI VIÐSKIPTAMANNS ÞARFNAST ANNAS TUNGUMÁLS EN ENSKU, ER ÞAÐ SKYLDI VIÐSKIPTAMANNS AÐ SKAFFA TUNGUMÁLAPJÓNUSTU.
- REYNIÐ EKKI AÐ AFGREIÐA TÆKIÐ NEMA AÐ ÞESSI ÞJÓNUSTUHANDBÓK HEFUR VERIÐ SKOÐUÐ OG SKILIN.
- BROT Á SINNA ÞESSARI ADVÖRUN GETUR LEITT TIL MEIÐSLA Á ÞJÓNUSTUVEITANDA, STJÓRNANDA EÐA SJÚKLINGS FRÁ RAFLOSTI, VÉLRÆNU EÐA ÖÐRUM ÁHÆTTUM.

AVVERTENZA (IT)

- IL PRESENTE MANUALE DI MANUTENZIONE È DISPONIBILE SOLTANTO IN INGLESE.
- SE UN ADDETTO ALLA MANUTENZIONE ESTERNO ALLA GEMS RICHIEDE IL MANUALE IN UNA LINGUA DIVERSA, IL CLIENTE È TENUTO A PROVVEDERE DIRETTAMENTE ALLA TRADUZIONE.
- SI PROCEDA ALLA MANUTENZIONE DELL'APPARECCHIATURA SOLO DOPO AVER CONSULTATO IL PRESENTE MANUALE ED AVERNE COMPRESO IL CONTENUTO.
- IL NON RISPETTO DELLA PRESENTE AVVERTENZA POTREBBE FAR COMPIERE OPERAZIONI DA CUI DERIVINO LESIONI ALL'ADDETTO ALLA MANUTENZIONE, ALL'UTILIZZATORE ED AL PAZIENTE PER FOLGORAZIONE ELETTRICA, PER URTI MECCANICI OD ALTRI RISCHI.

警告

(JA)

- このサービスマニュアルには英語版しかありません。
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경고

(KO)

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BRĪDINĀJUMS

(LV)

- ŠĪ APKALPES ROKASGRĀMATA IR PIEEJAMA TIKAI ANGLŪ VALODĀ.
- JA KLIENTA APKALPES SNIEDZĒJAM NEPIECIEŠAMA INFORMĀCIJA CITĀ VALODĀ, NEVIS ANGLŪ, KLIENTA PIENĀKUMS IR NODROŠINĀT TULKOŠANU.
- NEVEICIET APRĪKOJUMA APKALPI BEZ APKALPES ROKASGRĀMATAS IZLASĪŠANAS UN SAPRAŠANAS.
- ŠĪ BRĪDINĀJUMA NEIEVĒROŠANA VAR RADĪT ELEKTRISKĀS STRĀVAS TRIECIENA, MEHĀNISKU VAI CITU RISKU IZRAISĪTU TRAUMU APKALPES SNIEDZĒJAM, OPERATORAM VAI PACIENTAM.

ĮSPĖJIMAS

(LT)

- ŠIS EKSPLOATAVIMO VADOVAS YRA PRIEINAMAS TIK ANGLŪ KALBA.
- JEI KLIENTO PASLAUGŲ TIEKĖJAS REIKALAUJA VADOVO KITA KALBA – NE ANGLŪ, NUMATYTI VERTIMO PASLAUGAS YRA KLIENTO ATSAKOMYBĖ.
- NEMĖGINKITE ATLIKTI ĮRANGOS TECHNINĖS PRIEŽIŪROS, NEBENT ATSIŽVELGĖTE Į ŠĮ EKSPLOATAVIMO VADOVĄ IR JĮ SUPRATOTE.
- JEI NEATKREIPSITE DĖMESIO Į ŠĮ PERSPĖJIMĄ, GALIMI SUŽALOJIMAI DĖL ELEKTROS ŠOKO.
- MECHANINIŲ AR KITŲ PAVOJŲ PASLAUGŲ TIEKĖJUI, OPERATORIUI AR PACIENTUI.

ADVARSEL

(NO)

- DENNE SERVICEHÅNDBOKEN FINNES BARE PÅ ENGELSK.
- HVIS KUNDENS SERVICELEVERANDØR TRENGER ET ANNET SPRÅK, ER DET KUNDENS ANSVAR Å SØRGE FOR OVERSETTELSE.
- IKKE FORSØK Å REPARERE UTSTYRET UTEN AT DENNE SERVICEHÅNDBOKEN ER LEST OG FORSTÅTT.
- MANGLENDE HENSYN TIL DENNE ADVARSELEN KAN FØRE TIL AT SERVICELEVERANDØREN, OPERATØREN ELLER PASIENTEN SKADES PÅ GRUNN AV ELEKTRISK STØT, MEKANISKE ELLER ANDRE FARER.

OSTRZEŻENIE

(PL)

- NINIEJSZY PODRĘCZNIK SERWISOWY DOSTĘPNY JEST JEDYNIEM W JĘZYKU ANGIELSKIM.
- JEŚLI DOSTAWCA USŁUG KLIENTA WYMAGA JĘZYKA INNEGO NIŻ ANGIELSKI, ZAPEWNIENIE USŁUGI TŁUMACZENIA JEST OBOWIĄZKIEM KLIENTA.
- NIE PRÓBOWAĆ SERWISOWAĆ WYPOSAŻENIA BEZ ZAPOZNANIA SIĘ I ZROZUMIENIA NINIEJSZEGO PODRĘCZNIKA SERWISOWEGO.
- NIEZASTOSOWANIE SIĘ DO TEGO OSTRZEŻENIA MOŻE SPOWODOWAĆ URAZY DOSTAWCY USŁUG, OPERATORA LUB PACJENTA W WYNIKU PORĄŻENIA ELEKTRYCZNEGO, ZAGROŻENIA MECHANICZNEGO BĄDŹ INNEGO.

ATENÇÃO

(PT)

- ESTE MANUAL DE ASSISTÊNCIA TÉCNICA SÓ SE ENCONTRA DISPONÍVEL EM INGLÊS.
- SE QUALQUER OUTRO SERVIÇO DE ASSISTÊNCIA TÉCNICA, QUE NÃO A GEMS, SOLICITAR ESTES MANUAIS NOUTRO IDIOMA, É DA RESPONSABILIDADE DO CLIENTE FORNECER OS SERVIÇOS DE TRADUÇÃO.
- NÃO TENHA TENTADO REPARAR O EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO ESTE MANUAL DE ASSISTÊNCIA TÉCNICA
- O NÃO CUMPRIMENTO DESTA AVISO PODE POR EM PERIGO A SEGURANÇA DO TÉCNICO, OPERADOR OU PACIENTE DEVIDO A CHOQUES ELÉTRICOS, MECÂNICOS OU OUTROS.

ATENȚIE

(RO)

- ACEST MANUAL DE SERVICE ESTE DISPONIBIL NUMAI ÎN LIMBA ENGLEZĂ.
- DACĂ UN FURNIZOR DE SERVICII PENTRU CLIEȚI NECESITĂ O ALTĂ LIMBĂ DECÂT CEA ENGLEZĂ, ESTE DE DATORIA CLIENTULUI SĂ FURNIZEZE O TRADUCERE.
- NU ÎNCERCAȚI SĂ REPARAȚI ECHIPAMENTUL DECÂT ULTERIOR CONSULTĂRII ȘI ÎNȚELEGERII ACESTUI MANUAL DE SERVICE.
- IGNORAREA ACESTUI AVERTISMENT AR PUTEA DUCE LA RĂNIREA DEPARATORULUI, OPERATORULUI SAU PACIENTULUI ÎN URMA PERICOLELOR DE ELECTROCUTARE, MECANICE SAU DE ALTĂ NATURĂ.

ОСТОРОЖНО!

(RU)

- ДАННОЕ РУКОВОДСТВО ПО ОБСЛУЖИВАНИЮ ПРЕДЛАГАЕТСЯ ТОЛЬКО НА АНГЛИЙСКОМ ЯЗЫКЕ.
- ЕСЛИ СЕРВИСНОМУ ПЕРСОНАЛУ КЛИЕНТА НЕОБХОДИМО РУКОВОДСТВО НЕ НА АНГЛИЙСКОМ, А НА КАКОМ-ТО ДРУГОМ ЯЗЫКЕ, КЛИЕНТУ СЛЕДУЕТ САМОСТОЯТЕЛЬНО ОБЕСПЕЧИТЬ ПЕРЕВОД.
- ПЕРЕД ОБСЛУЖИВАНИЕМ ОБОРУДОВАНИЯ ОБЯЗАТЕЛЬНО ОБРАТИТЕСЬ К ДАННОМУ РУКОВОДСТВУ И ПОЙМИТЕ ИЗЛОЖЕННЫЕ В НЕМ СВЕДЕНИЯ.
- НЕСОБЛЮДЕНИЕ ТРЕБОВАНИЙ ДАННОГО ПРЕДУПРЕЖДЕНИЯ МОЖЕТ ПРИВЕСТИ К ТОМУ, ЧТО СПЕЦИАЛИСТ ПО ОБСЛУЖИВАНИЮ, ОПЕРАТОР ИЛИ ПАЦИЕНТ ПОЛУЧАТ УДАР ЭЛЕКТРИЧЕСКИМ ТОКОМ, МЕХАНИЧЕСКУЮ ТРАВМУ ИЛИ ДРУГОЕ ПОВРЕЖДЕНИЕ.

UPOZORNENIE

(SK)

- TENTO NÁVOD NA OBSLUHU JE K DISPOZÍCII LEN V ANGLIČTINE.
- AK ZÁKAZNÍKOV POSKYTOVATEĽ SLUŽIEB VYŽADUJE INÝ JAZYK AKO ANGLIČTINU, POSKYTNUTIE PREKLADATEĽSKÝCH SLUŽIEB JE ZODPOVEDNOSŤOU ZÁKAZNÍKA.
- NEPOKÚŠAJTE SA O OBSLUHU ZARIADENIA SKÔR, AKO SI NEPREČÍTATE NÁVOD NA OBLUHU A NEPOROZUMIETE MU.
- ZANEDBANIE TOHTO UPOZORNENIA MÔŽE VYÚSTIŤ DO ZRANENIA POSKYTOVATEĽA SLUŽIEB, OBSLUHUJÚCEJ OSOBY ALEBO PACIENTA ELEKTRICKÝM PRÚDOM, DO MECHANICKÉHO ALEBO INÉHO NEBEZPEČENSTVA.

ATENCION

(ES)

- ESTE MANUAL DE SERVICIO SOLO EXISTE EN INGLES.
- SI ALGUN PROVEEDOR DE SERVICIOS AJENO A GEMS SOLICITA UN IDIOMA QUE NO SEA EL INGLES, ES RESPONSABILIDAD DEL CLIENTE OFRECER UN SERVICIO DE TRADUCCION.
- NO SE DEBERA DAR SERVICIO TECNICO AL EQUIPO, SIN HABER CONSULTADO Y COMPRENDIDO ESTE MANUAL DE SERVICIO.
- LA NO OBSERVANCIA DEL PRESENTE AVISO PUEDE DAR LUGAR A QUE EL PROVEEDOR DE SERVICIOS, EL OPERADOR O EL PACIENTE SUFRAN LESIONES PROVOCADAS POR CAUSAS ELÉCTRICAS, MECÁNICAS O DE OTRA NATURALEZA.

VARNING

(SV)

- DEN HÄR SERVICEHANDBOKEN FINNS BARA TILLGÄNGLIG PÅ ENGELSKA.
- OM EN KUNDS SERVICETEKNIKER HAR BEHOV AV ETT ANNAT SPRÅK ÄN ENGELSKA ANSVARAR KUNDEN FÖR ATT TILLHANDAHÅLLA ÖVERSÄTTNINGSTJÄNSTER.
- FÖRSÖK INTE UTFÖRA SERVICE PÅ UTRUSTNINGEN OM DU INTE HAR LÄST OCH FÖRSTÅR DEN HÄR SERVICEHANDBOKEN.
- OM DU INTE TAR HÄNSYN TILL DEN HÄR VARNINGEN KAN DET RESULTERA I SKADOR PÅ SERVICETEKNIKERN, OPERATÖREN ELLER PATIENTEN TILL FÖLJD AV ELEKTRISKA STÖTAR, MEKANISKA FAROR ELLER ANDRA FAROR.

DİKKAT

(TR)

- BU SERVİS KILAVUZUNUN SADECE İNGİLİZCESİ MEVCUTTUR.
- EĞER MÜŞTERİ TEKNİSYENİ BU KILAVUZU İNGİLİZCE DIŞINDA BİR BAŞKA LİSANDAN TALEP EDERSE, BUNU TERCÜME ETTİRMEK MÜŞTERİYE DÜŞER.
- SERVİS KILAVUZUNU OKUYUP ANLAMADAN EKİPMANLARA MÜDAHALE ETMEYİNİZ.
- BU UYARIYA UYULMAMASI, ELEKTRİK, MEKANİK VEYA DİĞER TEHLİKELERDEN DOLAYI TEKNİSYEN, OPERATÖR VEYA HASTANIN YARALANMASINA YOL AÇABİLİR.

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent, write "Damage In Shipment" on ALL copies of the freight or express bill BEFORE delivery is accepted or "signed for" by a GE representative or hospital receiving agent. Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this 14 day period. Call GEHC Global Parts 1-800-548-3366 and select option 8, immediately after damage is found. At this time be ready to supply name of carrier, delivery date, consignee name, freight or express bill number, item damaged and extent of damage.

Complete instructions regarding claim procedure are found in Section S of the Policy And Procedures Bulletins.

14 July 1993

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT

All electrical Installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. In addition, electrical feeds into the Power Distribution Unit shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Healthcare personnel. The products involved (and the accompanying electrical installations) are highly sophisticated, and special engineering competence is required. In performing all electrical work on these products, GE will use its own specially trained field engineers. All of GE's electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE's field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

IMPORTANT...X-RAY PROTECTION

X-ray equipment, if not properly used, may cause injury. Accordingly, the instructions herein contained should be thoroughly read and understood by everyone who will use the equipment before you attempt to place this equipment in operation. The General Electric Company, Healthcare Group, will be glad to assist and cooperate in placing this equipment in use.

Although this apparatus incorporates a high degree of protection against x-radiation other than the useful beam, no practical design of equipment can provide complete protection. Nor can any practical design compel the operator to take adequate precautions to prevent the possibility of any persons carelessly exposing themselves or others to radiation.

It is important that anyone having anything to do with x-radiation be properly trained and fully acquainted with the recommendations of the National Council on Radiation Protection and Measurements as published in NCRP Reports available from NCRP Publications, 7910 Woodmont Avenue, Room 1016, Bethesda, Maryland 20814, and of the International Commission on Radiation Protection, and of any other local authorities, and take adequate steps to protect against injury.

The equipment is sold with the understanding that the General Electric Company, Healthcare Group, its agents, and representatives have no responsibility for injury or damage which may result from improper use of the equipment.

Various protective materials and devices are available. It is urged that such materials or devices be used.

OMISSIONS & ERRORS

Customers, please contact your GE Sales or Service representatives.

GE personnel, please use the GEHC PQR Process to report all omissions, errors, and defects in this publication.

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Preface

Publication Conventions

Standardized conventions for representing information is a uniform way of communicating information to a reader in a consistent manner. Conventions are used so that the reader can easily recognize the actions or decisions that must be made. There are a number of character and paragraph styles used in this publication to accomplish this task. Please become familiar with them before proceeding forward.

It is important that you read and understand hazard statements, and not just ignore them.

Section 1.0

Safety & Hazard Information

Proper product safety labeling allows a person to safely use or service a product. The format and style for safety communications reflected in this publication represents the harmonization of IEC/ISO 3864 and ANSI Z535 standards.

Within this publication, different paragraph and character styles are used to indicate potential hazards. Paragraph prefixes, such as hazard, caution, danger and warning, are used to identify important safety information. Text (Hazard) styles are applied to the paragraph contents that are applicable to each specific safety statement.

1.1 Hazard Messages

Any action that will, or could potentially cause personal injury will be preceded by the safety alert symbol and an appropriate signal word. The safety alert symbol is the triangle with an exclamation mark within it. It is always used next to the signal word to indicate the severity of the hazard. Together, they are used to indicate a hazard exists.

Signal words describe the severity of possible human injuries that may be encountered. The alert symbol and signal word are placed immediately before any paragraph they affect. Safety information includes:

- 1.) Signal Word - The seriousness level of the hazard.
- 2.) Symbol or Pictorial - The consequence of interaction with the hazard.
- 3.) Word Message:
 - a.) The nature of the hazard (i.e. the type of hazard).
 - b.) How to avoid the hazard.

The safety alert symbol is not used when an action can only cause equipment damage.

1.2 Text Format of Signal Words

DANGER - INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY. THIS SIGNAL WORD IS TO BE LIMITED TO THE MOST EXTREME SITUATIONS.

WARNING - INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

Caution - Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE - Indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property. This signal word is associated directly with a hazard or hazardous situation and is used in place of 'DANGER,' 'WARNING,' or 'CAUTION.' It can include:

- Destruction of a disk drive
- Potential for internal mechanical damage, such as to a X-ray tube

1.3 Symbols and Pictorials Used

The following Symbols and Pictorials may be used in this publication. These graphical icons (symbols) may be used to make you aware of specific types of hazards that could possibly cause harm.

NOTICE	CAUTION	WARNING	DANGER	
 keep_up	 magnetic	 biohazard	 compressgas	 ppe-hearing
 fragile	 impact	 corrosive	 heavyobject	 ppe-2people
 static_elec	 heat	 general	 laser	 ppe-respiratory
 keep_dry	 pinch	 radiation	 poisongas	 ppe-loto
 general	 explosive	 electrical	 flammable	 ppe-eye
 torque	 crush/mechanical	 tipping	 Read Manual	 ppe-gloves
 ce	 instuction	 poisonmatl	 entanglement	 instuction

1.4 Equipment Classification

The following equipment classifications are applicable to the product:

- Equipment classification with respect to protection from electric shock: Class I
- Degree of protection from electric shock: Type B
- Degree of protection against ingress of liquids: Not classified
- Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with nitrous oxide
- Mode of operation: Continuous operation with intermittent loading

Section 2.0 Publication Conventions

2.1 General Paragraph and Character Styles

Prefixes are used to highlight important non-safety related information. Paragraph prefixes (such as Purpose, Example, Comment or Note) are used to identify important but non-safety related information. Text styles are also applied to text within each paragraph modified by the specific prefix.

EXAMPLES OF PREFIXES USED FOR GENERAL INFORMATION:

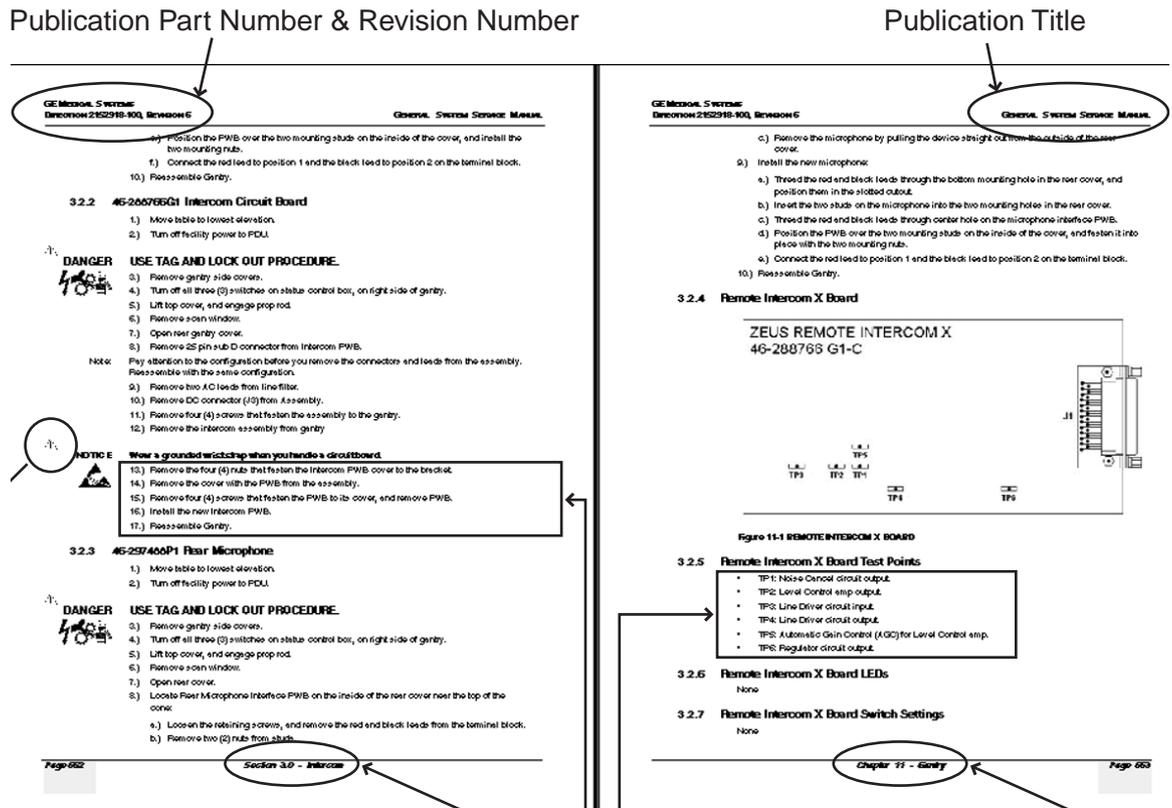
Purpose: Introduces and provides meaning as to the information contained within the chapter, section or subsection (such as used at the beginning this chapter, for example).

Note: Conveys information that should be considered important to the reader.

Example: Used to make the reader aware that the paragraph(s) that follow are examples of information possibly stated previously.

Comment: *Represents "additional" information that may or may not be relevant to your situation.*

2.2 Page Layout



The current section and its title are always shown in the footer of the left (even) page.

An exclamation point in a triangle is used to indicate important information to the user.

Paragraphs preceded by **Alphanumeric** characters (e.g. numbers) contain information that must be followed in a **specific order**.

The current chapter and its title are always shown in the footer of the right (odd) page.

Paragraphs preceded by a **symbol** (e.g. bullets) contain information that has **no specific order**.

Figure 1 Component Identification

Headers and footers in this publication are designed to allow you to quickly identify your location. The document part number and revision number appear in every header on every page. Odd numbered page footers indicate the current chapter, its title and current page number. Even numbered page footers show the current section and its title, as well as the current page number.

2.3 Computer Screen Output/Input Text Character Styles

Within this publication, mono-spaced character styles (fonts) are used to indicate computer text that is either screen input or output. Mono-spaced fonts, such as courier, are used to indicate text direction. When you type at your keyboard, you are generating computer input. Occasionally you will see the math operator “greater-than” and “less-than” symbols used to indicate the start and finish of variable output. When reading text generated by the computer, you are reading it as computer generated output. In addition to direction, characters are italicized (e.g. *italics*) to indicate information specific to your system or site.

Example: This paragraph's font represents computer generated screen "fixed" output.
Fixed Output Its output is fixed from the sense that it does not vary from application to application. It is the most commonly used style used to indicate filenames, paths and text that do not change from system to system. The character style used is a fixed width such as courier.

Example: *This paragraph's font represents computer screen output that is "variable". It is used to represent output that varies from application to application or system to system. Variable output is sometimes found placed between greater-than and less-than operators for clarification. For example: <variable_ouput> or <3.45.120.3>. In both cases, the < and > operators are not part of the actual input.*
Variable Output

Example: This paragraph's font represents fixed input. It is computer input that is typed-in via the keyboard. Typed input that does not vary from application to application or system to system. Fixed text the user is required to supply as input. For example: `cd /usr/3p`
Fixed Input

Example: *This paragraph's font represents computer input that can vary from application to application or system to system. With variable text, the user is required to supply system dependent input or information. Variable input sometimes is placed between greater-than and less-than operators. For example: <variable_input>. In these cases, the (<>) operators would be dropped prior to input. For example: `yocat hosts | grep <3.45.120.3>` would be typed into the computer as*
yocat hosts | grep 3.45.120.3
without the greater-than and less-than operators.
Variable Input

2.4 Buttons, Switches and Keyboard Inputs (Hard & Soft Keys)

Different character styles are used to indicate actions requiring the reader to press either a hard or soft button, switch or key. Physical hardware, such as buttons and switches, are called hard keys because they are hard wired or mechanical in nature. A keyboard or on/off switch would be a hard key. Software or computer generated buttons are called soft keys because they are software generated. Software driven menu buttons are an example of such keys. Soft and hard keys are represented differently in this publication.

Example: A power switch **ON/OFF** or a keyboard key like **ENTER** is indicated by applying a character style that uses both over and under-lined bold text. This is a hard key.
Hard Keys

Example: Whereas the computer MENU button that you would click with your mouse or touch with your hand uses over and under-lined regular text. This is a soft key.
Soft Keys

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Chapter 1 - Introduction

Section 1.0 Objective and Scope of this Manual

This document is intended as a guide and informational resource for planning and properly preparing a location for the installation of a system.

Section 2.0 Avoiding Unnecessary Expenses and Delays

To avoid unnecessary expenses and delays, use the “Pre-Installation” checklist located in [Chapter 8](#) to determine if you are ready for the installation to begin. Once you believe that your room/location is ready for installation to begin, complete the “Pre-Installation” checklist. The checklist is an important tool that helps verify that nothing has been missed. The checklist summarizes the preparations and allows you to record a permanent record of the activities that have taken place.

Section 3.0 An Overview of the Pre-Installation Process

Pre-installation is a co-operative effort between the customer/purchaser and GE Healthcare (GEHC). Complete the checklists contained in this manual. They are an important part of the pre-installation process. The checklists summarize the required preparations and verify the completion of the pre-installation procedures.

[Figure 1-1](#) outlines the information in this document and its place in the pre-installation process.

Chapter 3 --
Room
Requirements

Chapter 6 --
Product
Characteristics
Chapter 7 --
Room Layout

Chapter 4 --
Planning Electrical
Connections
Chapter 5 --
System Facility
Power & Grounds

Chapter 8 --
Planning Aids

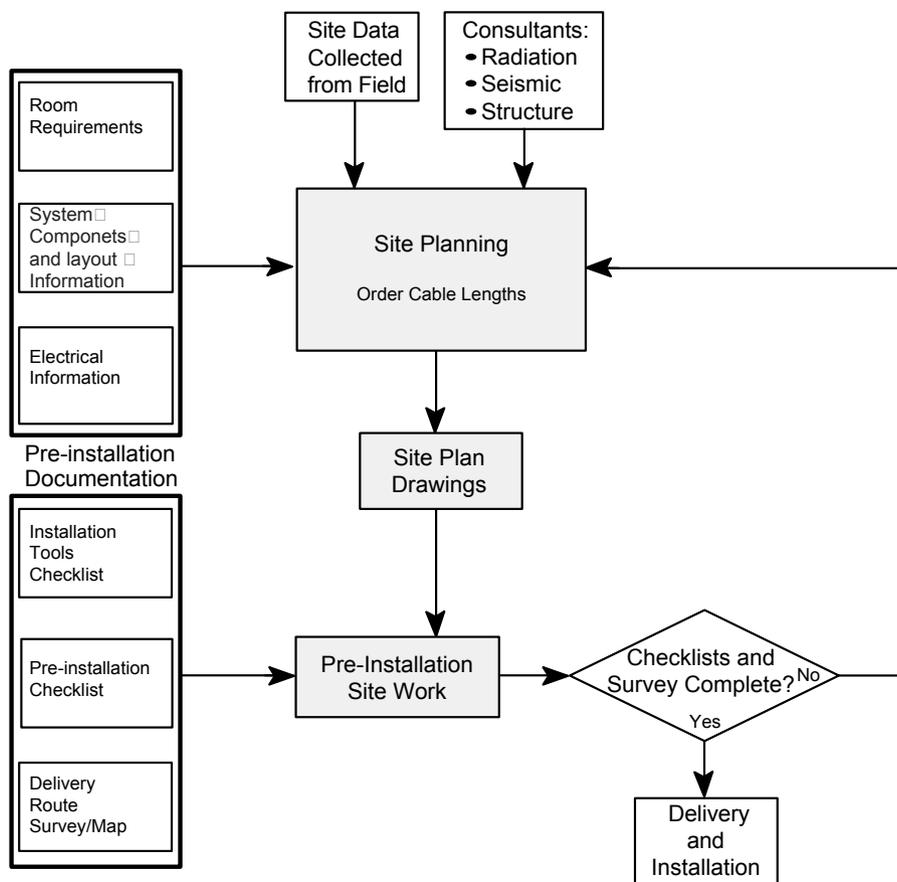


Figure 1-1 Pre-Installation Overtable

Section 4.0 Responsibility of Purchaser/Customer

To ensure that the installation of the system meets the purchaser or Customer expectations, it is important to determine who will take responsibility for various items in the course of the system installation process. To aid you in determining these responsibilities, review the following checklists with the customer and assign responsibilities as appropriate:

- Tools and Equipment Checklist (see [page 72](#))
- Pre-Installation Checklist (see [page 83](#))

Section 5.0 Contract Changes

Be sure to inform the customer that the cost of any alterations or modifications not specified in the sales contract are the responsibility of the customer.

Section 6.0

Responsibilities of the Purchaser

The purchaser is responsible for completion of “Pre-Installation”. This includes the procurement and installation of all required materials and services to get the room ready for installation of the product. This responsibility includes providing:

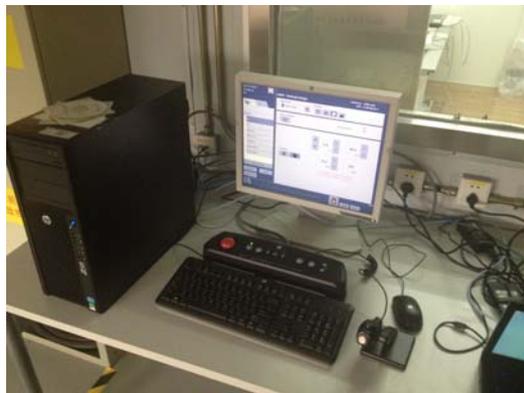
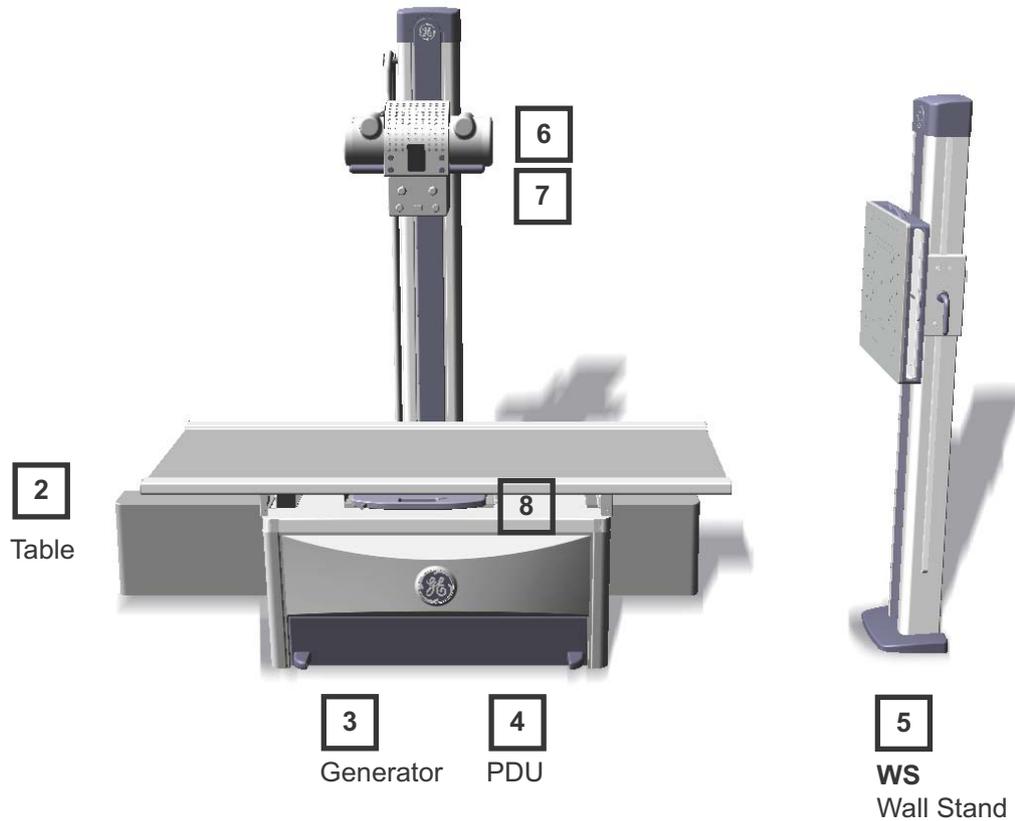
- A clean and safe work environment for installation of the product (finished floor, ceiling, walls, and proper room lighting).
- A location suitable for the installation of the product. See [Chapter 3 - - Room Requirements](#).
 - Suitable support structures in the floor, walls, or ceiling necessary for the mounting of the product and/or its components.
 - Installation of conduit, ducts and/or raceways necessary to route cables safely. See [Chapter 5 - - System Facility Power & Grounds](#) and [Chapter 6 - - Product Characteristics](#)
 - Electrical power and grounds of specified quality and reliability. See [Chapter 5 - - System Facility Power & Grounds](#).
 - * Electrical power of the required voltage, including an emergency-off safety switch in the room. Power and ground cables to the PDU (The power cable also can be ordered and the part number is S39222KP).
 - * Properly installed and sized junction boxes, including covers and fittings at locations required and called out in architectural drawings.
- A location suitable for operation of the product. See [Chapter 7 - - Room Layout](#).
- Installation of non-electric services.

Section 7.0

What You Will Receive (System Components)

The system may consist of the following main components (See [Figure 1-2](#) and [Table 1-1](#)):

- Radiographic Table
- Standard Integrated Tube Stand
- Standard Wall Stand
- Control room collector (Magic PC, Monitor, RCIM)
- Generator
- PDU
- E7843X X-Ray Tube
- Collimator



RCIM II 1 Control room collector

The Product is divided into basic components:

1. Control room collector
2. Digital Table
3. Generator
4. PDU
5. Wall Stand
6. X-ray Tube
7. Collimator
8. Detector



RCIM I 1 Control room collector



UPS

Figure 1-2 System Component Identification

Item	Component	Part Number
1	Control room collector	5267820
1a	Magic PC and Mouse	5263305
1b	LCD Monitor	5178602
1c	RCIM	2383880/ 5272215-1
2	Standard Integrated Table	5233510
2a	Standard Integrated Tube Stand	5270027
3	Generator (VR Jedi 50 R1T)	2212259-2
4	PDU	5220653
5	Standard Wall Stand	5233511
6	X-ray Tube - E7843X	5192454
7	Manual Collimator	5189248
8	Detector	5215463/ 5215463-rohs

Table 1-1 System Component Identification

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Chapter 2 - Special Construction

Section 1.0 Radiation Protection

Because X-ray equipment produces radiation, special precautions may need to be taken or special site modifications may be required. The General Electric Company does not make recommendations regarding radiation protection. It is the purchasers responsibility to consult a radiation physicist for advice on radiation protection in X-ray rooms.

Chapter 3 - Room Requirements

Section 1.0 Environmental Requirements

1.1 Relative Humidity and Temperature

Transportation and Storage Conditions

- Environment temperature: -20°C ~ 70°C (-4°F ~ 158°F) (The environment temperature of digital detector and monitor: ($+0^{\circ}\text{C}$ ~ $+50^{\circ}\text{C}$) (32°F ~ 122°F))
- Relative humidity: 10 ~ 90%

In-Use Conditions

- Environment temperature: 10° ~ 30°C (50°F ~ 86°F)
- Relative humidity: 30 ~ 80%

Limits for rates of change:

In-Use

< 10°C / hour (< 50°F / hour)

< 30% / hour

Storage

< 20°C / hour (< 68°F / hour)

< 30% / hour

Note: STORAGE values only refer to equipment that is still in shipping containers. If the equipment is partially or completely installed, refer to IN-USE values.

1.2 Altitude and Atmospheric Pressure

Transportation and Storage Conditions:

Atmospheric pressure: 700 ~ 1060 hPa

In-use Conditions :

Atmospheric pressure: 700 ~ 1060 hPa

Limits for rates of change:

In-Use

< 1.8 hPa / hour

Storage

< 76 hPa / hour

Note: STORAGE values only refer to equipment that is still in shipping containers. If the equipment is partially or completely installed, refer to IN-USE values.

1.3 Heat Output

PRODUCT OR COMPONENT	HEAT OUTPUT MAX	HEAT OUTPUT Idle
HP Workstation	220 W (751 BTU/h)	120 W (409 BTU/h)
Chilin LCD Monitor	55 W (188 BTU/h)	5 W (17 BTU/h)
TBL & WS	3100 W (10577 BTU/h)	1500 W (5118 BTU/h)
UPS	13 W (45.45 BTU/h)	9 W (31.61 BTU/h)
Total System Output	3.4KW (11600 BTU/h)	1.7KW (5800 BTU/h)

Table 3-1 Heat Outputs by Component

1.4 Acoustic Output

COMPONENT	SOUND OUTPUT (dBA)	
	IN-USE (measured 1m from any point in system)	STAND-BY (measured 1m from any point in system)
System	< 60	< 55

Table 3-2 Acoustic Output

1.5 Light Specification

The monitor screen is adjusted for an optimum ambient light level of 50 lux.

1.6 Radiation Protection

Because X-ray equipment produces radiation, special precautions may need to be taken or special site modifications may be required. The General Electric Company does not make recommendations regarding radiation protection. It is the purchaser's responsibility to consult a radiation physicist for advice on radiation protection in X-ray rooms.

Section 2.0 Structural Requirements

2.1 Door Size Requirements

Minimum door sizes also apply to hallway and elevator. [Chapter 6 - - Product Characteristics](#), for additional details.

Door Height: The minimum door height to accommodate the WallStand is 206 cm (81 in).

Door Width:

- The minimum door width to accommodate the Table is: 100 cm (39 in).

- The minimum door width is calculated based on a straight-in approach requiring a 2.5 m wide corridor. Minimum widths will change based on narrower corridors.

2.2 Floor Requirements

The preferred method of installing the table and standard wall stand is to use the provided floor anchors.

2.2.1 Floor Requirements when using provided Floor Anchors

CAUTION

Potential for Injury and/or Equipment Damage:

Anchors must be a minimum of 75mm from any concrete edge including ducts and cracks. In addition, the general condition of the concrete in the immediate mounting area should be inspected to ensure that anchors will be set in good quality concrete.

2.2.1.1 Table

The Table Assembly is placed on the floor, which must accept the weight and the weight/area defined in [Chapter 6, Section 3.1 - Floor Loading and Recommended Mounting Methods](#).

- The weight of the complete table is 632kg (1393 lbs).
- The ground surface must be approximately level.
- The Table system must be attached to the floor.

The floor bearing the system must be concrete and the thickness to be determined by a Structural Engineer to properly support the equipment loads. The supplied anchors require a minimum embedment of 55 mm into the concrete. If the floor thickness is less than 75 mm, it is recommended that the unit be secured using a through-bolt method with a reinforcement plate on the back side. For additional details, see [Chapter 6, Section 3.1 - Floor Loading and Recommended Mounting Methods](#).

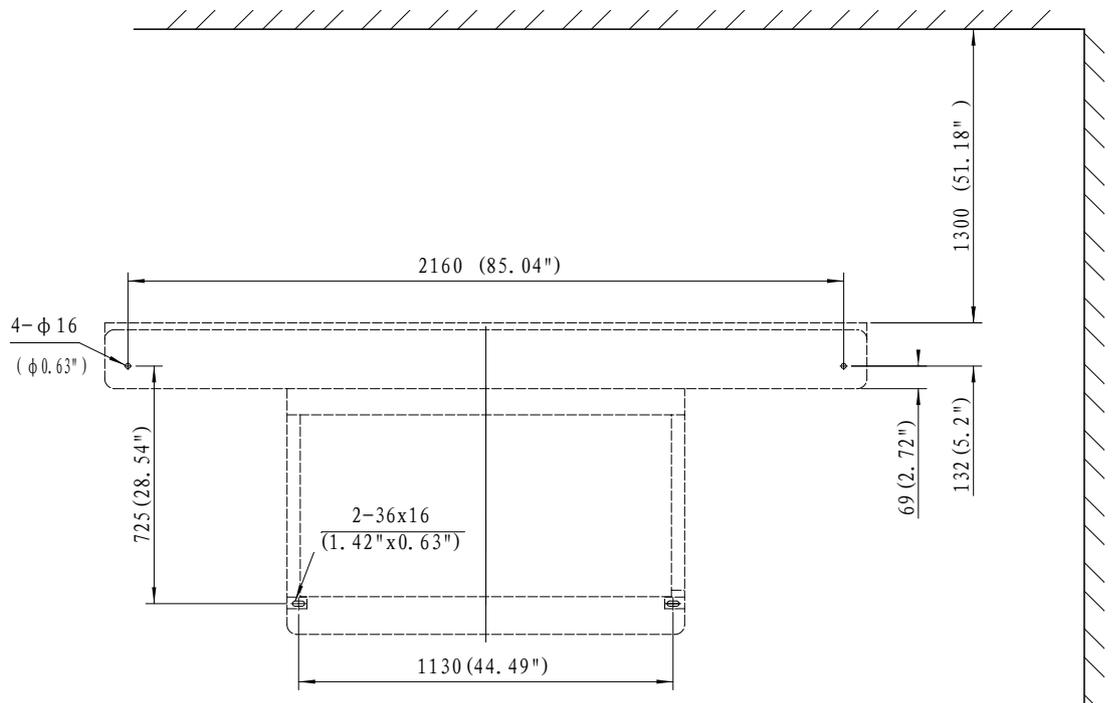


Figure 3-1 Floor Mounting - Table Assembly

Note: Table mounting bolt size is M10X100 mm.

2.2.1.2 Wall Stand

The Wall Stand Assembly is placed on the floor, which must accept the weight and the weight/area defined in [Chapter 6, Section 3.1 - Floor Loading and Recommended Mounting Methods](#).

- The weight of the complete standard wall stand is 185 kg.
- The ground surface must be approximately level.
- The Wall Stand system must be attached to the floor.



Concrete area for wall stand installation should be 0.1 m².

The floor bearing the system must be concrete and the thickness to be determined by a Structural Engineer to properly support the equipment loads. The supplied anchors require a minimum embedment of 55 mm into the concrete. If the floor thickness is less than 75 mm, it is recommended that the unit be secured using a through-bolt method with a reinforcement plate on the back side. For additional details, see [Chapter 6, Section 3.1 - Floor Loading and Recommended Mounting Methods](#).

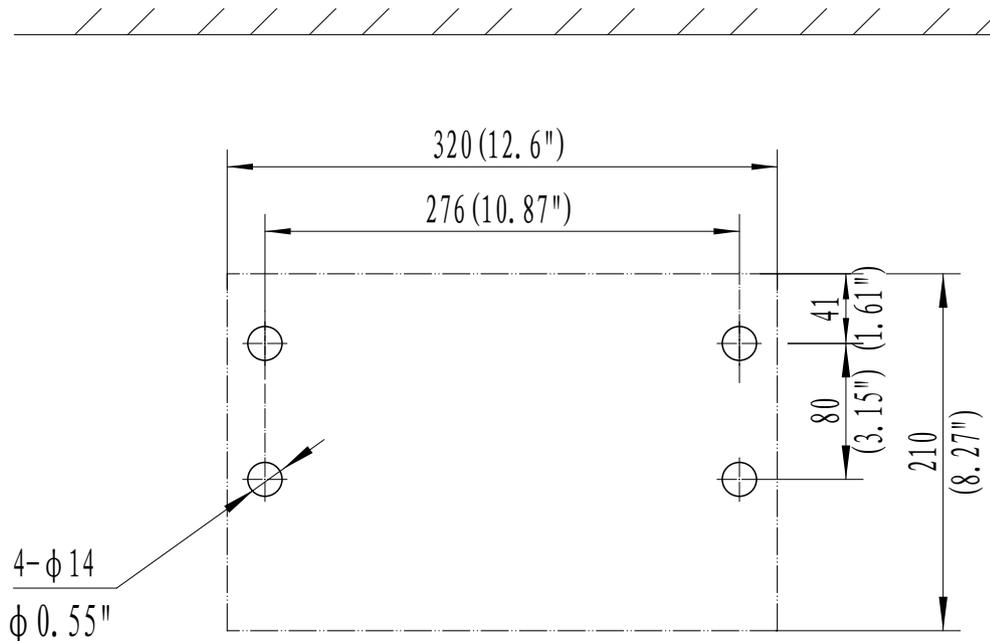


Figure 3-2 Floor Mounting - Wall Stand

Note: Wallstand mounting bolt size is M10X100 mm.

2.2.2 Service Access Requirements

Allow appropriate space for service access of equipment, per country and regional requirements.

2.2.3 Ceiling height Requirements

The ceiling height should be above 2400mm. If the ceiling height is lower than 2400mm, you will not be able to install the tube stand top cover.

Chapter 4 - Planning Electrical Connections

Section 1.0 Routing Cables

1.1 General

High voltage and power cables must be separated from other cables. Use a separate trough in the duct system, or use a separate conduit. Minimize cable length between the line disconnect and the System Cabinet power unit to reduce voltage regulation problems and wiring costs.

For information about the cables supplied with your system, please refer to [Chapter 9 - - System Cable Information](#).

1.2 Conduit

Separate conduits must be used for power and signal wires. These wires must be kept separated from each other.

Using conduit imposes some important considerations when used with this system. Of primary concern, the majority of cables used are pre-terminated. Pre-termination greatly simplifies interconnection but makes cable-pulling difficult because of the added dimensions of the connectors.

Conduit must be large enough to pass the cable and connector through with all other cables already in the conduit. Also, the size of conduit chosen must allow for future growth. There is the possibility of additional cables being added later as the system is developed and options are added.

The use of conduit is recommended for cables running overhead between rooms, especially when a diagonal run provides the shortest cable path.

1.3 Electrical Ducts

It's important that electrical ducts have separate compartments for power and signal wires. These wires must be kept separated from each other for proper system operation.

Electrical ducts have advantages, when used with a single room or two adjacent rooms. Electrical ducts combine cabling in a neat and functional appearance, with accessibility and room for expansion.

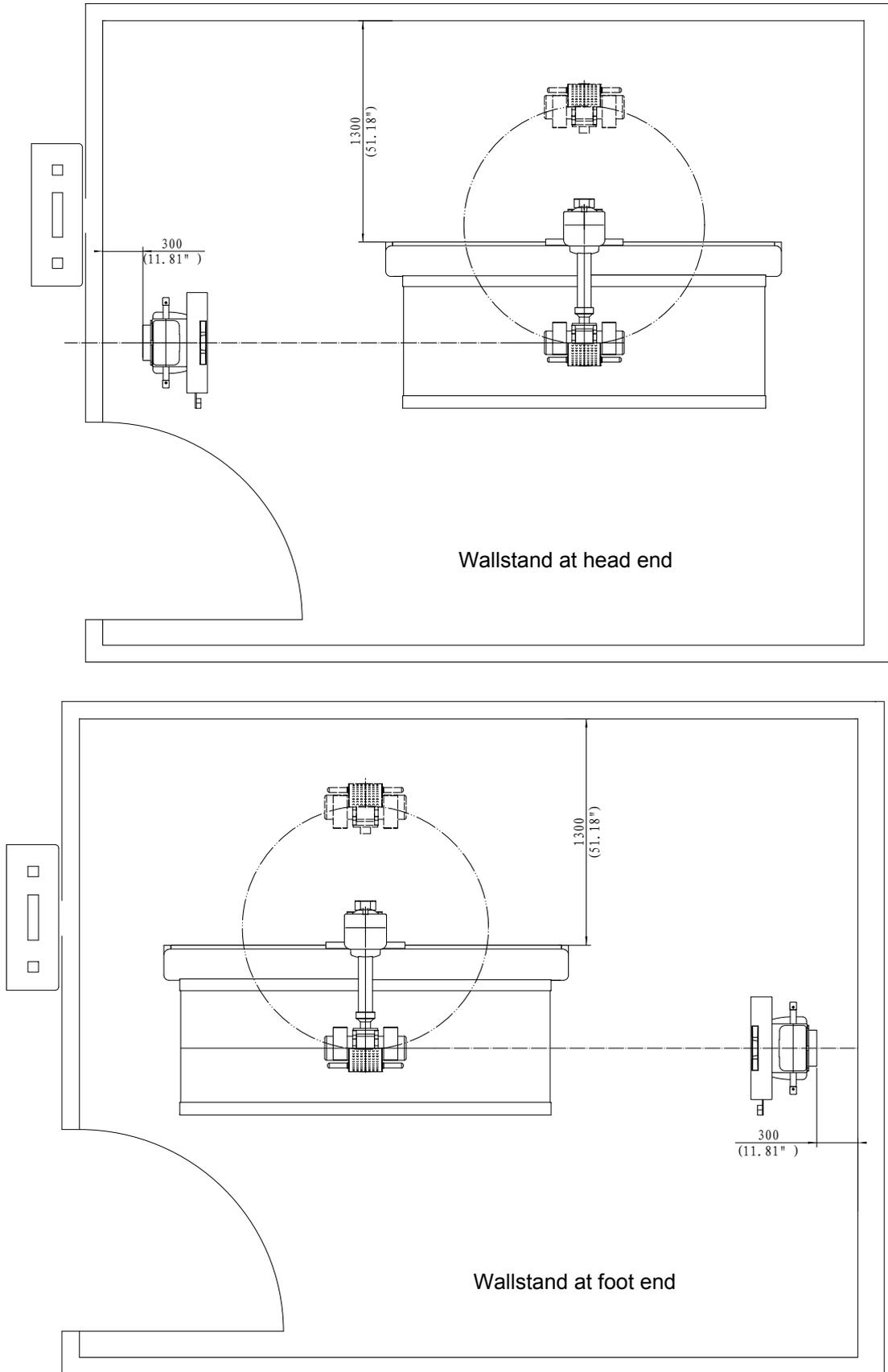


Figure 4-1 System Electrical Ducts

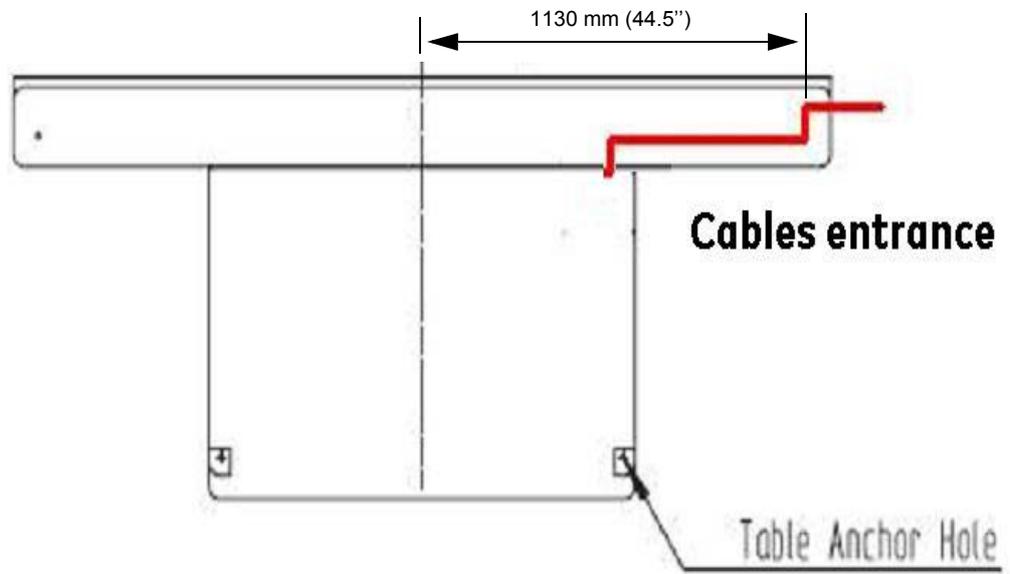


Figure 4-2 Table Electrical Ducts

1.4 Power Distribution

system power distribution consists of two major components that must either be customer supplied or GE Healthcare supplied. These are:

- Feeder power from Hospital distribution center to the Power Distribution Unit (PDU).
- Power distribution from the Power Distribution Unit (PDU) to all the components in the system room.

Usually the feeder power from the Hospital distribution center is customer supplied and the power distribution within the system is supplied by GEHC.

Note:
Additional
Reference
Material Exists

For hospital facility feeder power and ground requirements to the system power unit, refer to: [Chapter 5 - - System Facility Power & Grounds](#).

For system power distribution from the System power unit, refer to MIS Map, see [Chapter 9 - - System Cable Information](#).

Section 2.0 Hospital Network

2.1 Broadband Network Connection

Systems are equipped with Broadband fast Ethernet hardware for Service diagnostics. systems equipped with Digital Imaging are capable of placing electronic images on the Hospital image Ethernet Network. It is the purchasers responsibility to provide the Ethernet connection (rated at 100Mb/sec transfer rate for optimal performance) within 0.91 meters of the Operator Console. The network connection is made at the Operator Console.

- 100BaseT network connection is preferred
- 10BaseT network connection is acceptable

Note: If using GE PACS LITE BOX software, the GE PACS LITE BOX software revision must be 6.1d02 or greater. Older versions will not work with the system.

For DICOM information, refer to: 5135613-100, Acquisition Workstation Conformance Statement for DICOM V3.0.

Connection of the product to a network that includes other equipment could result in previously unidentified risks to patients, operators or third parties;

The responsible organization should identify, analyze, evaluate and control these risks;

Subsequent changes to the network could introduce new risk and require additional analysis; and Changes to the network include:

- * Changes in network configuration;
- * Connection of additional items to the network;
- * Disconnecting items from the network;
- * Update of equipment connected to the network;
- * Upgrade of equipment connected to the network.

The means required to present the images for diagnostic purpose shall comply with the requirements of DICOM standards.

2.2 Remote Services Broadband Pre-Installation Requirements for Europe

- To enable an easier installation and to benefit from remote support (service and engineering teams), equipments should be Insite connected at installation.
- Thus the connectivity solution to implement should be decided during pre installation and all related data should be available before installation starts.
- For all installations make sure that you have at least one RJ45 dedicated to connect the new equipment on the LAN. In case of Broadband, this connection will also be used for the remote service of the equipment.
- GEHC offers a wide range of connectivity solutions: From full GE package (GE supplies Router and customer buys the line) to customized solutions (GE adapts to customer infrastructure).
- Network devices (like CISCO Routers for instance) can be shipped with the equipment only if the Sales Representative has added the connectivity item in the order.

For complete descriptions of these connectivity solutions, please refer to the Broadband Solutions

- catalogue available through your local GEHC sales and service representative.
- Connectivity Process and pre-installations checklists are available in the Broadband onnectivity PIM available through your local GEHC sales and service representative.
- For each solution selected by the customer the pre-installation checklist must be fulfilled by site IT manager in order to get connectivity information (site IT manager contacts, IP address...) available at installation.
- In case Broadband is not available: Modem A dedicated phone line using a RJ11 used only for the connection to a modem must be located at 1 mm maximum from the operator console.
- This line will be a direct classical phone line.

Section 3.0 Master Interconnect System (MIS)

System interconnect cables are described in MIS (Master Interconnect System) documents shipped with the system. These documents specify all interconnections between components within the system and its options.

Note:
Additional
Reference
Material Exists

For specific system interconnect maps and connection details, please refer to [Chapter 9 -- System Cable Information](#).

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Chapter 5 - System Facility Power & Grounds

Section 1.0 Introduction

The purpose of this chapter is to ensure that the product is properly powered and grounded, thus ensuring the proper operation of the product installed. The information in this chapter should be adhered to, unless there are written deviations approved by GE Healthcare.

This chapter gives the sizes and procedures on how to power and ground your system. If these power and grounding instructions are not adhered to, proper operation cannot be guaranteed. Any cost associated and found to be a result of non-conformity, as stated in this chapter, may result in additional cost charged back to the institution and/or their contractor.

NOTICE

All system and sub-system power connections shall be made ONLY to power outlets that are connected to the system.

All system component power connections must be made in accordance with the MIS Map, see [Chapter 9 - - System Cable Information](#).

1.1 Power Quality

The electrical power, from its origination to the system, must adhere to the wire size and transformer sizes as prescribed in the installation drawings. The feeder voltage-drops, as well as the supplying power, must be within the given parameters. Sizing for feeder is usually calculated for a maximum of 2% voltage drop at the minimum voltage range. The actual feeder sizing may vary from the installation drawing for a facilities voltage.

Calculate feeder losses before you begin. Total feeder losses must be calculated to ensure that the losses are less than those specified in the installation drawings. Calculating the recommended minimum transformer sizing for feeding a system ensures the transformer losses are less than half of the maximum regulation for the system.

Regulation is the calculated voltage losses for the entire power distribution system (No-Load Voltage minus Full-Load Voltage) divided by the no-load voltage minus the system losses (Full-Load Voltage):

$$\text{Regulation} = \frac{\text{NoLoadVoltage} - \text{FullLoadVoltage}}{\text{FullLoadVoltage}} \times 100$$

In the X-ray room, there must be a lockable facility power disconnect. It must be installed electrically before the equipment, for the purpose of locking out the power. This must be done before service to the high voltage system is performed.

1.2 Electrical Requirements

NOTICE

In China, all cables used to provide system power and ground must be CCC certified.

NOTICE

Only WYE connected power source are currently permitted, due to current system (generator) design.

All system components obtain their power from the Power Distribution Unit (PDU) under the system table. **Providing power and ground wires to the PDU are the responsibility of the customer.** As an aid, wire sizes for various lengths of the power supply cable are shown in the following tables.

WARNING

PE CABLES SHALL HAVE THE DIAMETER NOT LESS THAN THE POWER SUPPLY CONDUCTOR, AND SHALL HAVE AN IMPEDENCE NOT MORE THAN 0.1 OHMS.

1.2.1 System Electrical Requirements

1.2.1.1 System Power Specifications

PARAMETER	JEDI GENERATOR - 50kW										
Input Voltage	380/400/440/480 VAC WYE 3-Phase and ground without neutral										
Required Power Source	WYE Distribution										
Daily Voltage variations	+/- 10% (VAC) In this range, the generator will operate without any de-rating in accuracy.										
Line Impedance	The apparent line impedance guaranteed by the customer should be equal or less than the values indicated below, according to the voltage value and the commercial power of the generator. Voltage range (V) Line Impedance (ohms) <table border="1"> <thead> <tr> <th>3 phase</th> <th>50kW</th> </tr> </thead> <tbody> <tr> <td>380</td> <td>0.15</td> </tr> <tr> <td>415</td> <td>0.18</td> </tr> <tr> <td>440</td> <td>0.20</td> </tr> <tr> <td>480</td> <td>0.24</td> </tr> </tbody> </table> Note: 400-480 VAC impedance values are based on IEC 601-2-7 standard. Values are interpolated from values in standard.	3 phase	50kW	380	0.15	415	0.18	440	0.20	480	0.24
3 phase	50kW										
380	0.15										
415	0.18										
440	0.20										
480	0.24										
HV cable length	8 m										
HV cable type	IB EEC: 22 mm cable de Lyon (<=150 pF/m) USA: 22 mm DSI (<=165pF/m) EEC: 16 mm Claymount (<=165 pF/m) HV cable connector = Federal standard										
Ground Wire	#8 AWG										
Inrush current	600 A										

Table 5-1 System Power Specifications

PARAMETER	JEDI GENERATOR - 50kW
Normal Frequency	50/60Hz
Daily frequency variation	47~63Hz

Table 5-1 System Power Specifications

1.2.2 Recommended Power Supply

PDU Power Supply cable is offered by the customer, and also can be ordered from GE (S39222KP). Wire size for various lengths of the Power Supply cable are shown in [Table 5-5](#).

Note: Power cable should be flexible enough to allow generator to roll back into table.

PARAMETER Input Voltage Wire Size Length	THREE PHASE GENERATOR - 50kW							
	380 VAC		400 VAC		440 VAC		480 VAC	
15 m (50 ft.)	10 mm ²	(#8 AWG)	10 mm ²	(#8 AWG)	10 mm ²	(#8 AWG)	10 mm ²	(#8 AWG)
30 m (150 ft.)	16 mm ²	(#6 AWG)	16 mm ²	(#6 AWG)	16 mm ²	(#6 AWG)	16 mm ²	(#6 AWG)
46 m (200 ft.)	22 mm ²	(#5 AWG)	22 mm ²	(#5 AWG)	22 mm ²	(#5 AWG)	22 mm ²	(#5 AWG)
60 m (100 ft.)	30 mm ²	(#3 AWG)	30 mm ²	(#3 AWG)	30 mm ²	(#3 AWG)	30 mm ²	(#3 AWG)

Table 5-2 Minimum Wire Size 50 kW

Phase	3	3	3	3
Nominal Line Voltage (Vac)	380	400	440	480
Voltage Range (Vac)	+/- 10%	+/- 10%	+/- 10%	+/- 10%
Momentary Line Current (Amp)	110	110	110	110
Continuous Line Current (Amp)	7	6.7	6	5.5
Power Demand (kVA)	70	70	70	70
Frequency	47/53Hz and 57/63Hz			

Table 5-3 kVA Load Characteristics 50 kW

1.2.3 Recommended Wall “Circuit-Breaker” Ratings

Power / Voltage	50 kW
380 V	110 A / 600 V
400 V	105 A / 600 V
440 V	95 A / 600 V
480 V	88 A / 600 V

Table 5-4 Wall Breaker Parameter (Theoretical Current Values)

Note: Shunt trip circuit breaker required. The main circuit breaker supplied by the customer must be sized in accordance to local regulations.

1.2.4 Wiring Electrical Power and Disconnects

This section provides additional data regarding power circuits the customer must provide, and internal electrical circuits necessary to supply the correct power to the system. Figure 5-1 shows the room power supply installed.

1.2.4.1 Room Power Supply

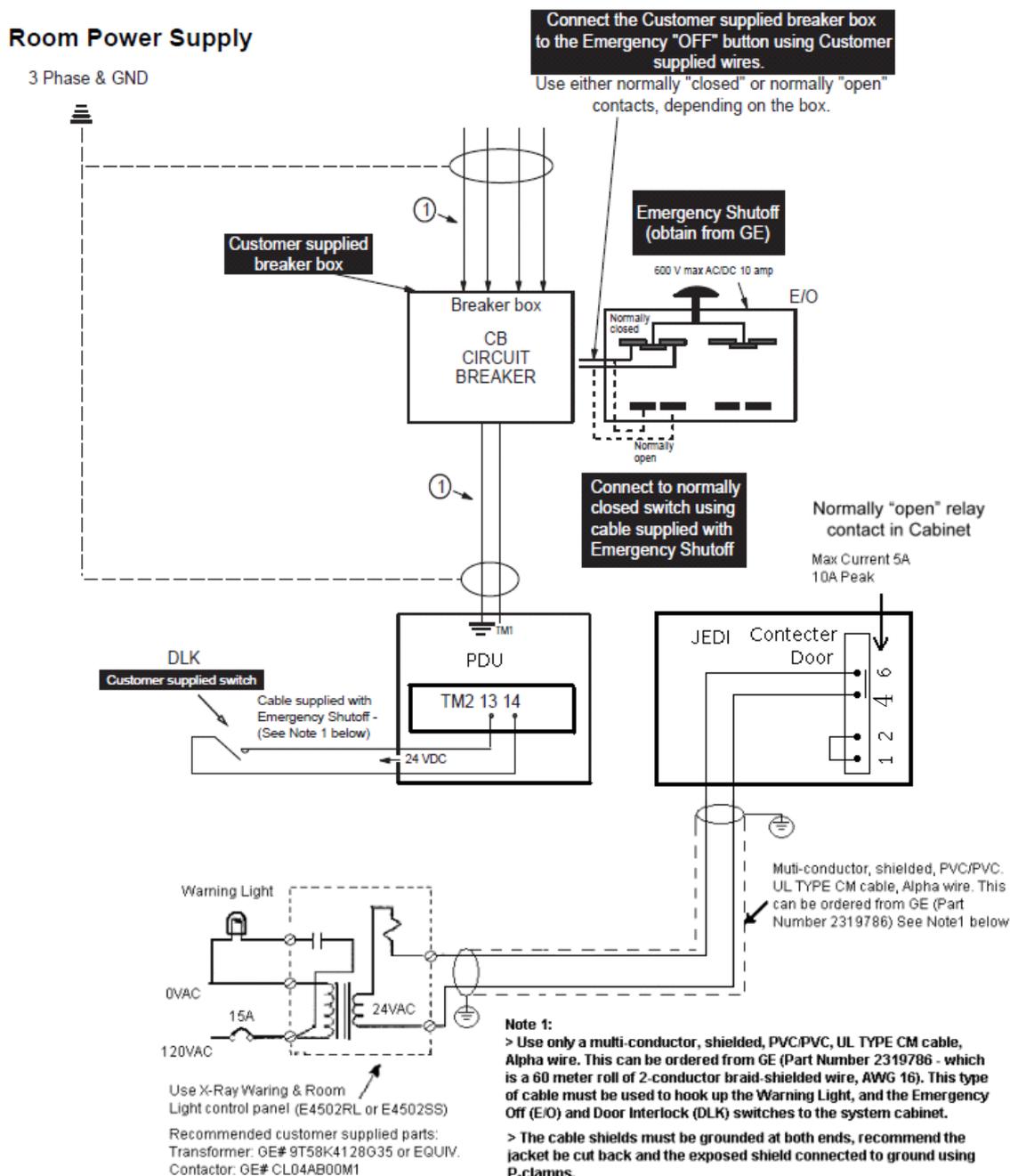


Figure 5-1 Room Power Supply (see Table 5-5 for Legend)

Key for Figure 5-1	Description
CB	Circuit breaker with remote trip (shunt) capabilities supplied by customer.
DLK <i>(see note below)</i>	Open-door detector (per local regulations). SKL provides 24 VDC.
XRL	Yellow X-ray emission indicator lamp above the room access door. 220 V in Europe/120 V in USA with 25 W max. bulb (per local regulations). Wires and light fixtures supplied by customer.

Note: Use only a multi conductor, shielded, PVC/PVC, UL TYPE CM cable. Alpha Wire. CQA10210637. This wire is found in GE Catalog Item A8091JH as a “bulk” roll of wire (60 Meters). Material consists of two 16 AWG (19/0.0117 strand) conductors. Shields must be grounded at both ends.

Table 5-5 Legend for Figure 5-1 and Figure

1.2.4.2 Multiple Emergency “OFF” Switches

Figure 5-2 shows how multiple emergency “OFF” switches could be wired.

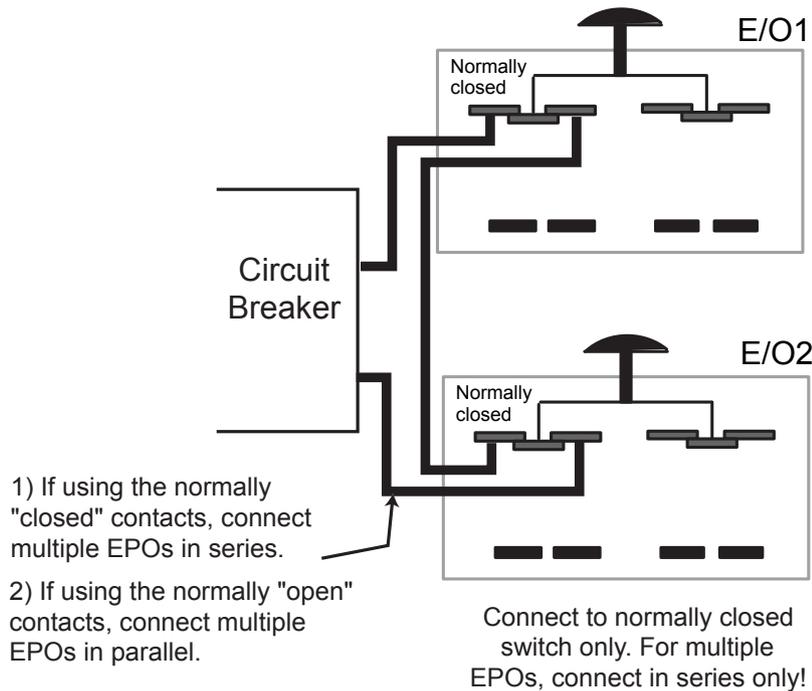


Figure 5-2 Wiring Multiple “Emergency OFF” (E/O) Switches

1.2.4.3 Customer-supplied Electrical Outlet

Customer must provide an electrical outlet of appropriate voltage rating within 0.91 meters of the System Cabinet.

Section 2.0 Electrical Grounds

2.1 System and Facility Grounds

The ground for this system must originate at the system's power source and be continuous (i.e., transformer or first access point of power into a facility, and be continuous to the system power disconnect in the room). Ground connection at the power source must be at the grounding point of the "Neutral/Ground" if a "Wye" transformer is used, or typical grounding points of a separately derived system. In the case of an external facility, it must be bonded to the facility ground point at the electrical service entrance.

The "system" ground can be spliced using "High Compression Fittings" but must be properly terminated at each distribution panel it passes through. When it is terminated, it must be connected into an approved grounding block. Incoming and outgoing grounds must terminate at this same grounding block. Grounds must only be terminated to approved grounding blocks. Grounds must never connect directly to the panels, frames or other materials in a cabinet or distribution panel (refer to [Figure 5-3](#)).

2.2 Recommended Ground Wire Sizes

The ground wire must be copper and never smaller than 8 AWG.

The ground wire impedance from the system disconnect (including the ground rod) measured to earth, must not exceed 2 ohms (as measured by one of the applicable techniques described in Section 4 of ANSI/IEEE Standard 142 - 1982). Refer to [Figure 5-3](#) and [Figure 6](#) for typical equipment and methods to measure the different portions of the 2 ohm impedance.

Note:
Additional
Reference
Material Exists

For general system grounding requirements and information on establishing an equi-potential grounding system, refer to:

- Direction 46-014505, *Electrical Safety - Equipment Grounding*
- Direction 46-014546, *Electrical Safety - Leakage Currents*

For specific system grounding maps and connection details, refer to [Chapter 9 - - System Cable Information](#).

2.3 Final Checks, Before System Installation Can Begin

The customer must provide GE Healthcare or its representative (installation specialist) evidence that grounds and electrical power meet GE Healthcare' specifications.

Prior to product installation, a local service or installation specialist, to be determined by GEHC, will do a physical walk through of the exam suite to ensure the following:

- 1.) Ground wires are of the same size as the power feeder or 8 AWG, whichever is larger.
- 2.) Grounds at junction points are connected properly and securely to an approved ground bus.
- 3.) Grounds within an enclosure are tied together by copper wire or to an appropriate buss bar (i.e., separate buss bars within an enclosure must be tied together with copper wire of appropriate size).
- 4.) Grounds originate at the power source (i.e., transformer or entrance panel into facility).
- 5.) Ground wires measure less than 2 ohms to earth.

You may use the following form to record the results of that inspection.

GROUND IMPEDANCE MEASURED TO BE _____ OHMS

Inspector's Name and Date: _____

Customer's Name and Date: _____

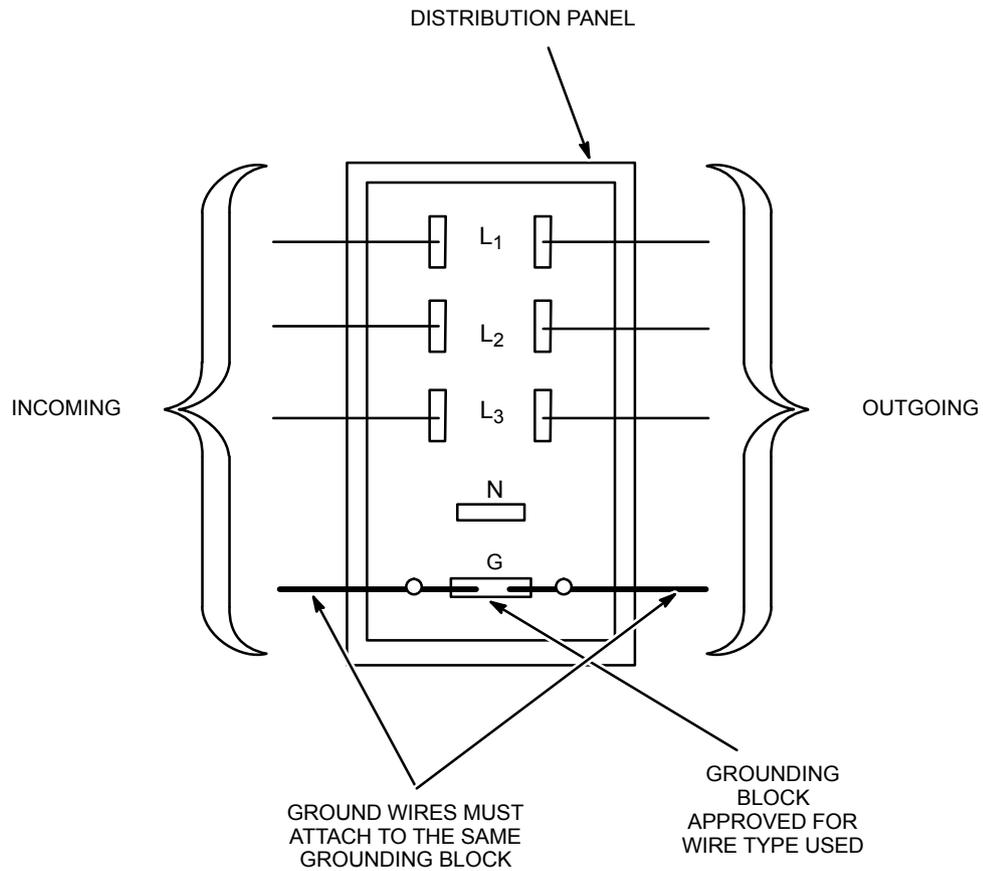
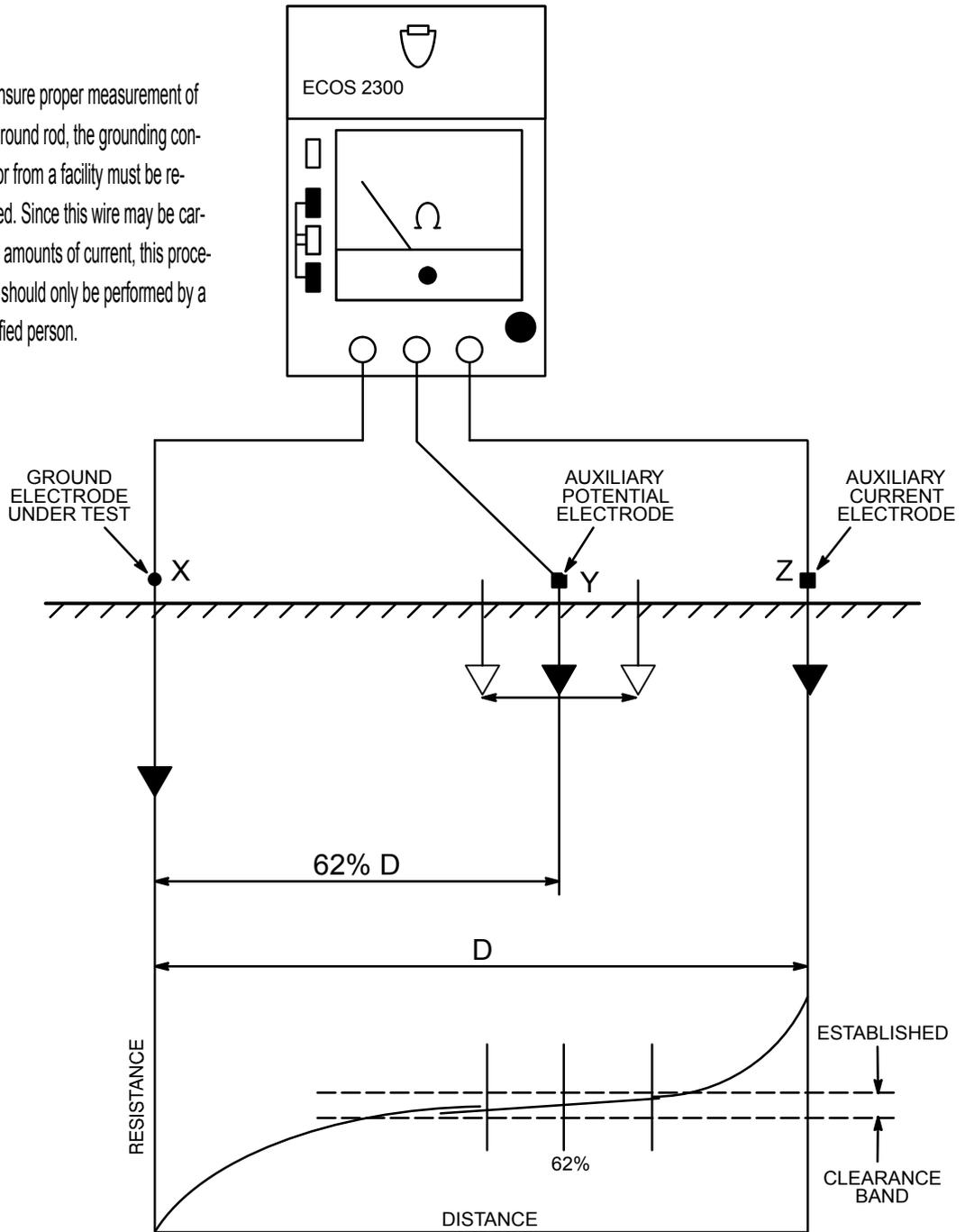


Figure 5-3 Ground Connection at Distribution Panel

To ensure proper measurement of the ground rod, the grounding conductor from a facility must be removed. Since this wire may be carrying amounts of current, this procedure should only be performed by a qualified person.



Chapter 6 - Product Characteristics

Section 1.0 Overview

Refer to this section for dimensional drawings for the components of the system. These components include:

- System - [Figure 6-2](#) through [Figure 6-3](#)
- Operator Console - [Figure 6-1](#) through [Figure 6-3](#).
- Integrated Table - [Figure 6-4](#) through [Figure 6-6](#).
- Radiographic Table - [Figure 6-7](#) through [Figure 6-8](#).
- Integrated Tube Stand - [Figure 6-9](#).
- Standard Wall Stand - [Figure 6-10](#) through [Figure 6-12](#).
- Dolly - [Figure 6-13](#).

Note: Drawings are not to scale. Dimensions are called out on each drawing.

Section 2.0 System Components Dimensions and Weights

2.1 Dimensions

PRODUCT OR COMPONENT	DIMENSIONS			References
	Width	Depth	Height	
Operator Console:				
PC	440 mm (17.3")	440 mm (17.3")	170 mm (6.7")	Figure 6-1 through Figure 6-3
LCD Monitor	387 mm (15.2")	180 mm (7.1")	504 mm (19.8")	
RCIM	451 mm (17.8")	135 mm (5.3")	70 mm (2.8")	
Standard Integrated Table	2300 mm (90.6")	1115 ~ 1335 mm (43.9" ~ 52.6")	2240 mm (88.2')	See Figure 6-4 through Figure 6-6
Standard Wall Stand	651 mm (25.6")	285 mm (11.2")	2060 mm (81.1")	See Figure 6-10 through Figure 6-12
UPS (Option)	214 mm (8.43")	410 mm (16.14")	325 mm (12.80")	See Figure 6-14

*Showing: Mounting Holes, Cable Entrance, Air Vents, Service Access, Center of Gravity

Table 6-1 Product Physical Characteristics (Width / Depth / Height)

2.2 Dimensioned Figures and Drawings

2.2.1 Control room collector

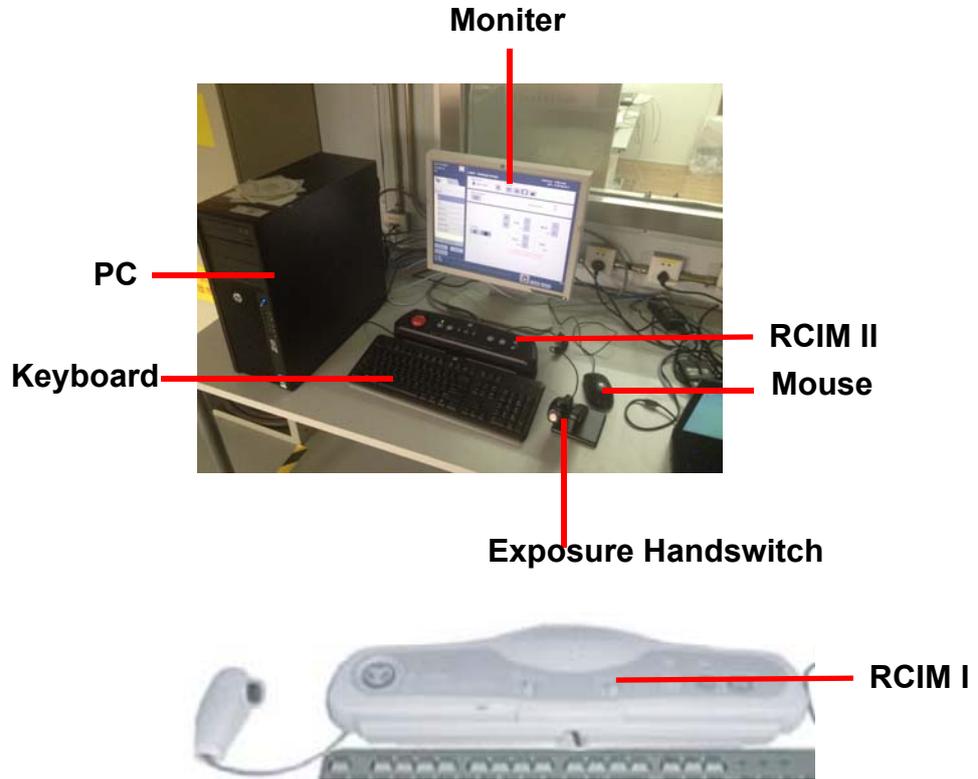


Figure 6-1 Control Room collector

2.2.2 System

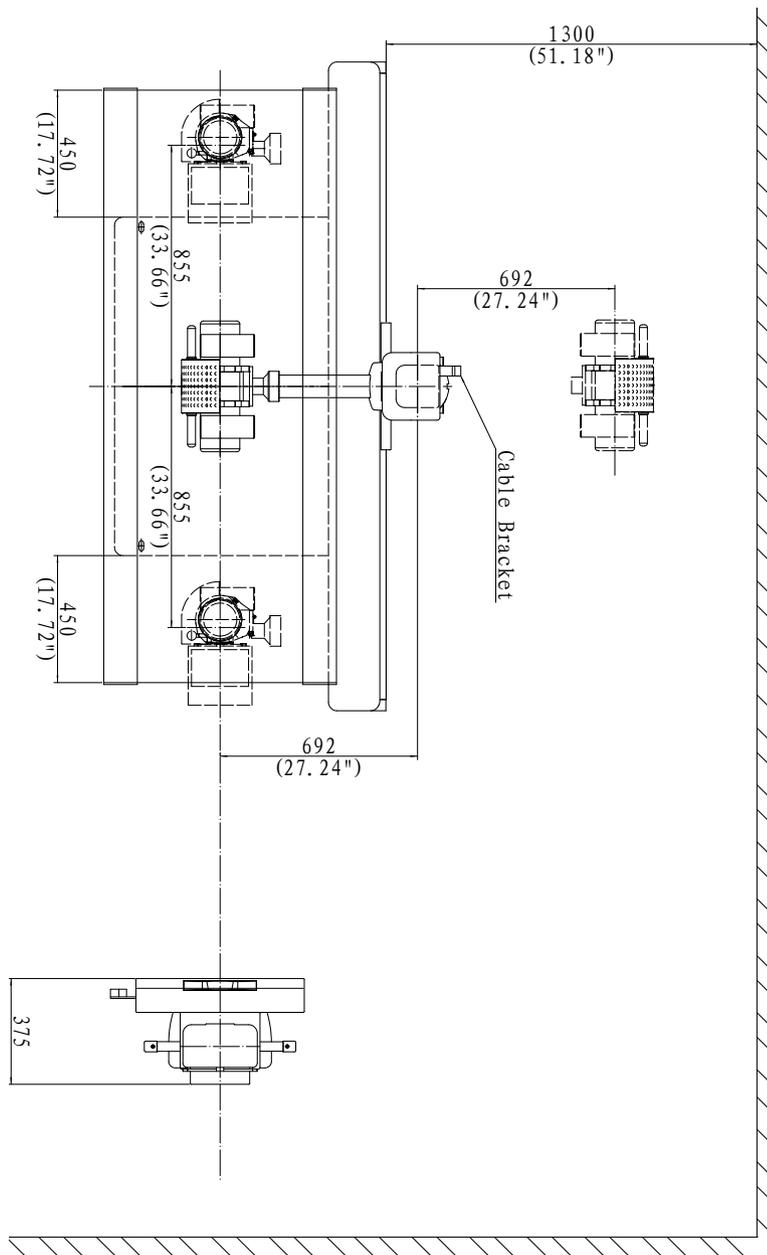


Figure 6-2 System Views

Note: The least SID is 1m.

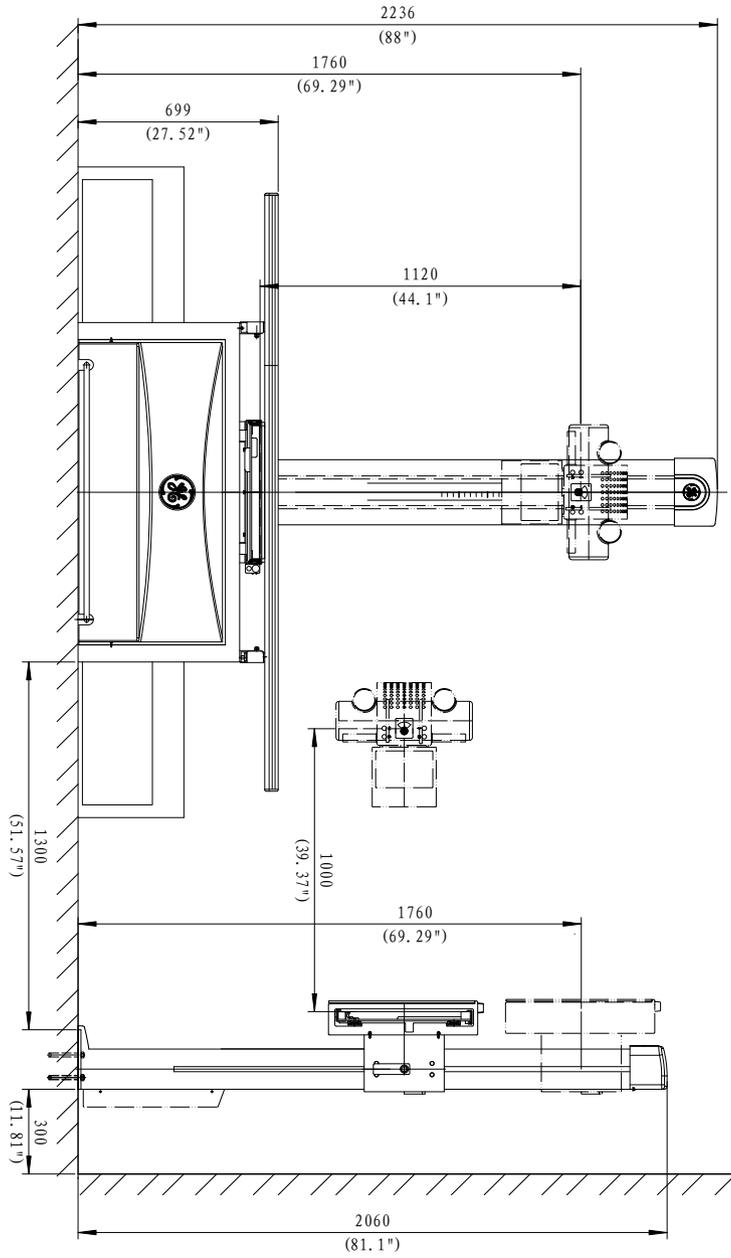


Figure 6-3 System Views (Front View)

2.2.3 Integrated Table

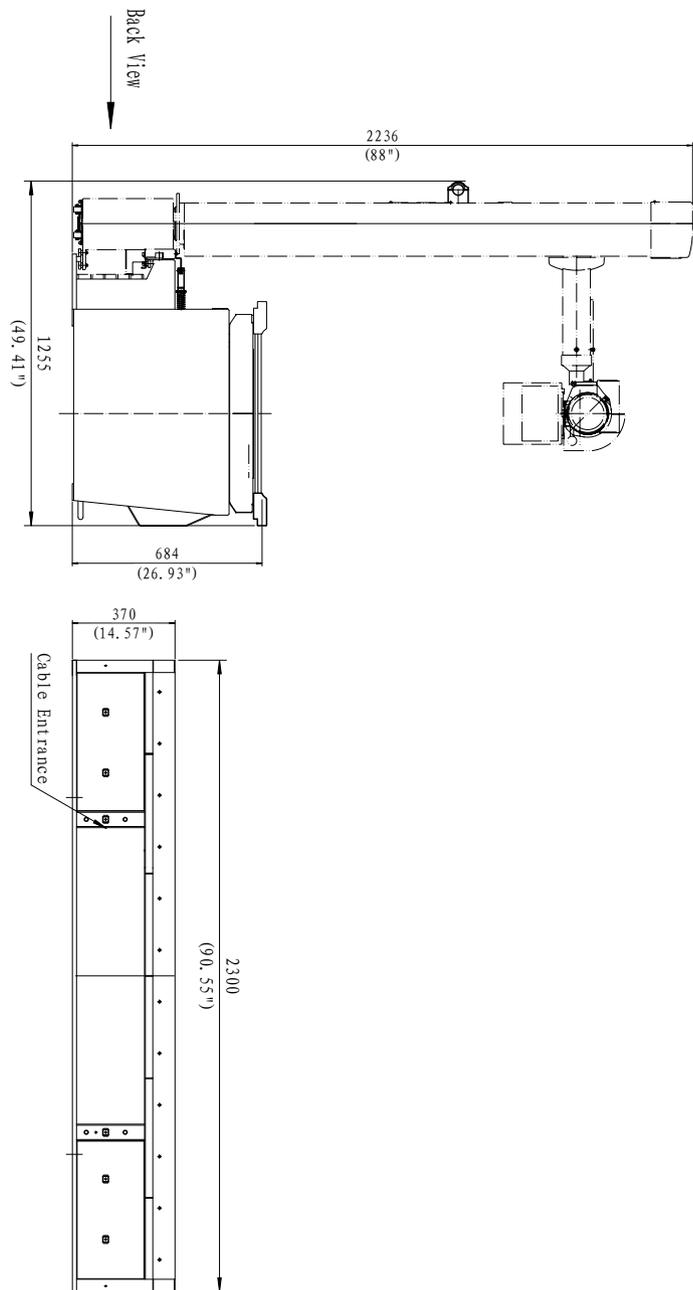


Figure 6-4 Integrated Table Side View

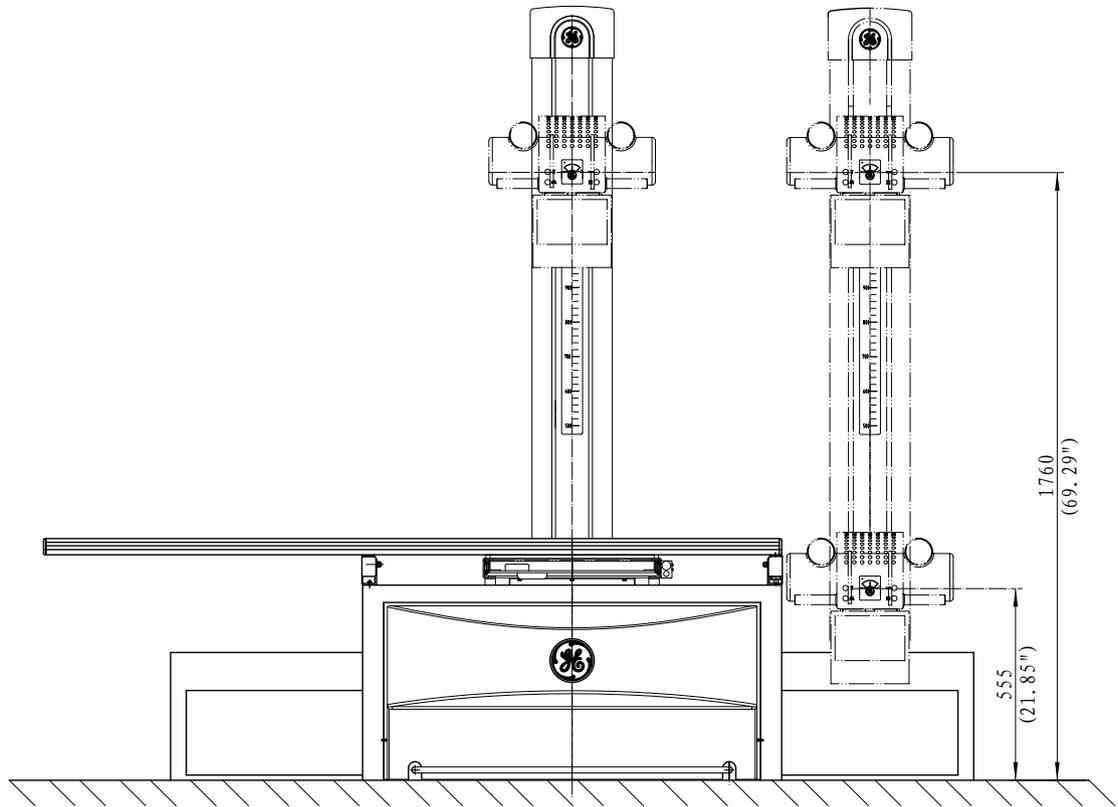


Figure 6-5 Integrated Table Front View

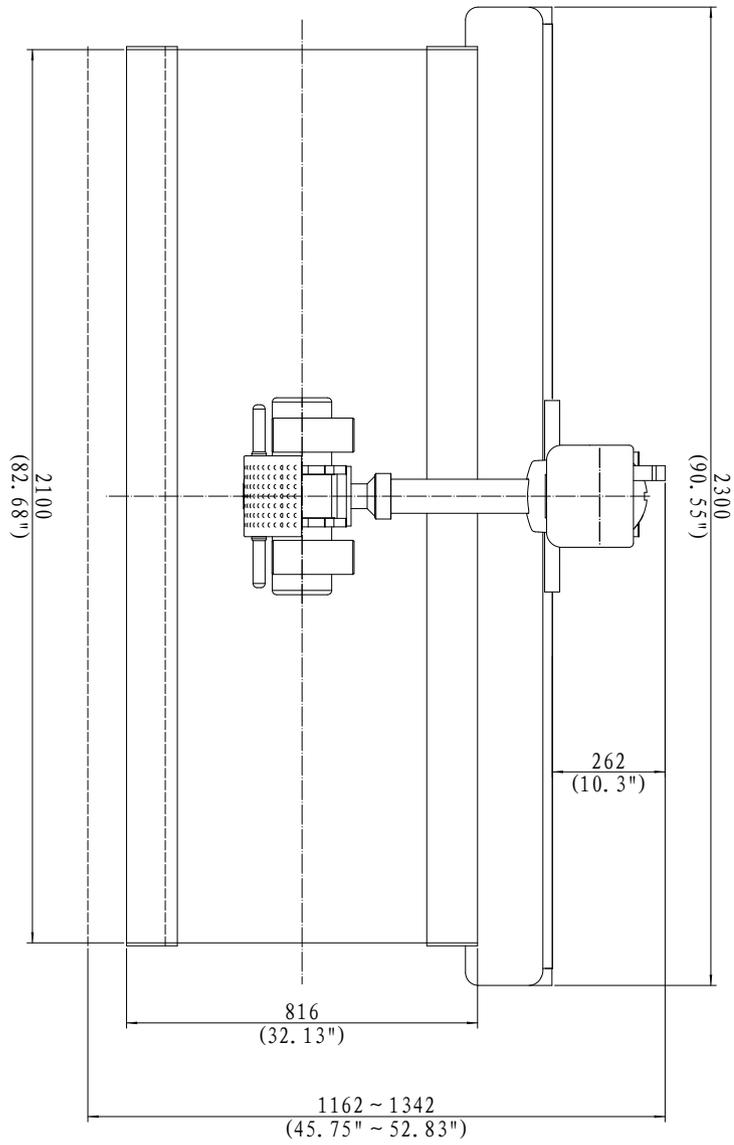


Figure 6-6 Integrated Table Top View

2.2.3.1 Table

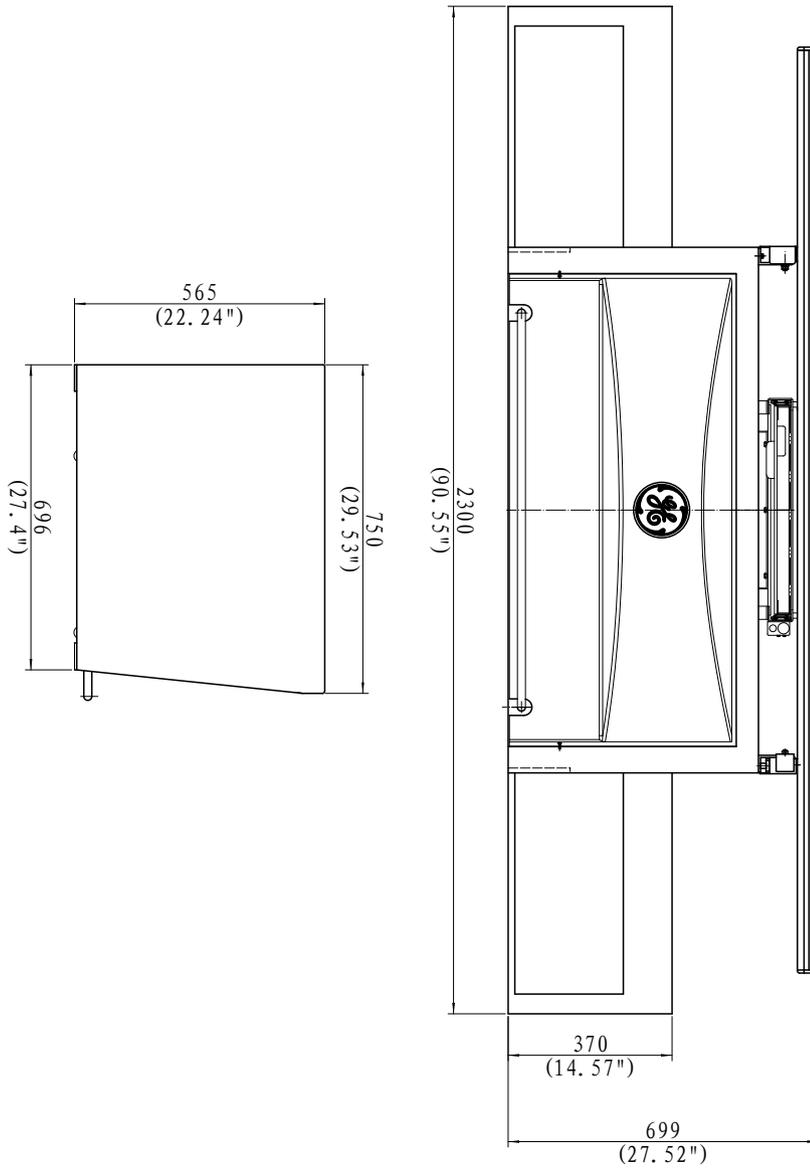


Figure 6-7 Table Dimensions

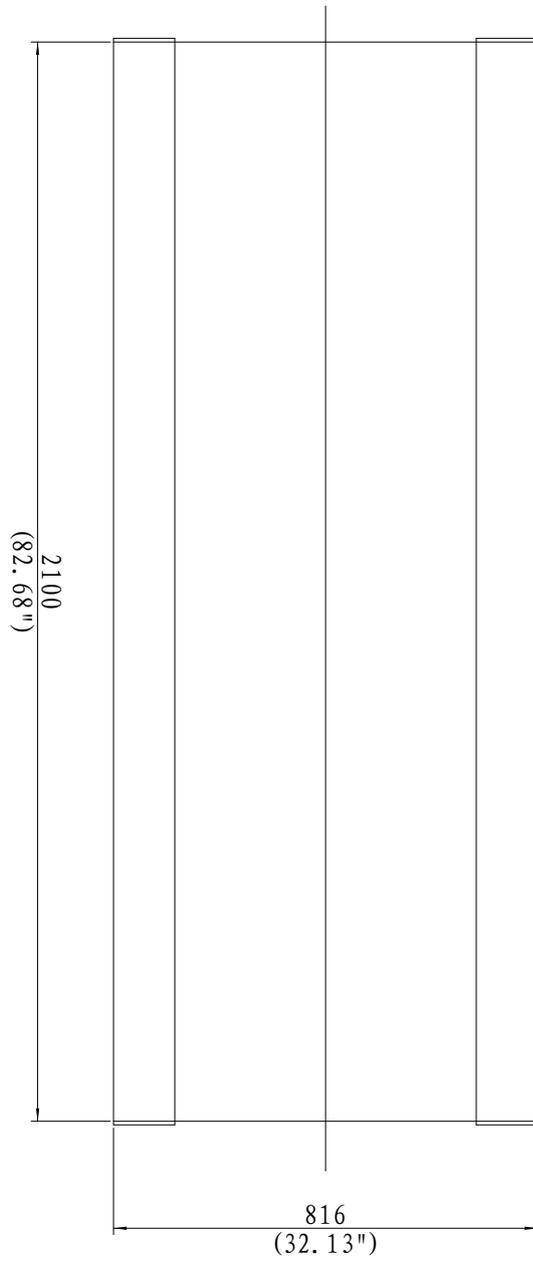


Figure 6-8 Table Top Dimensions

2.2.3.2 Tube Stand

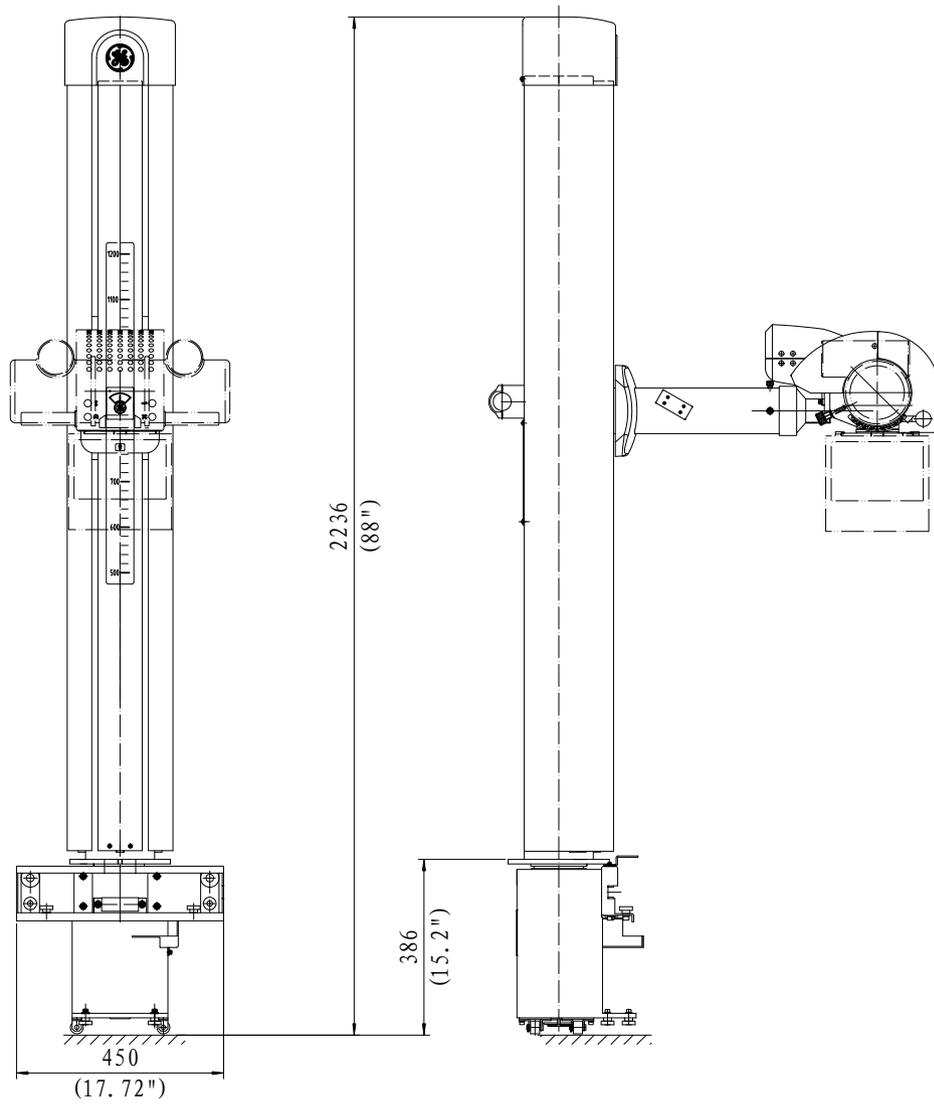


Figure 6-9 Standard Tube Stand

2.2.4 Wall Stand

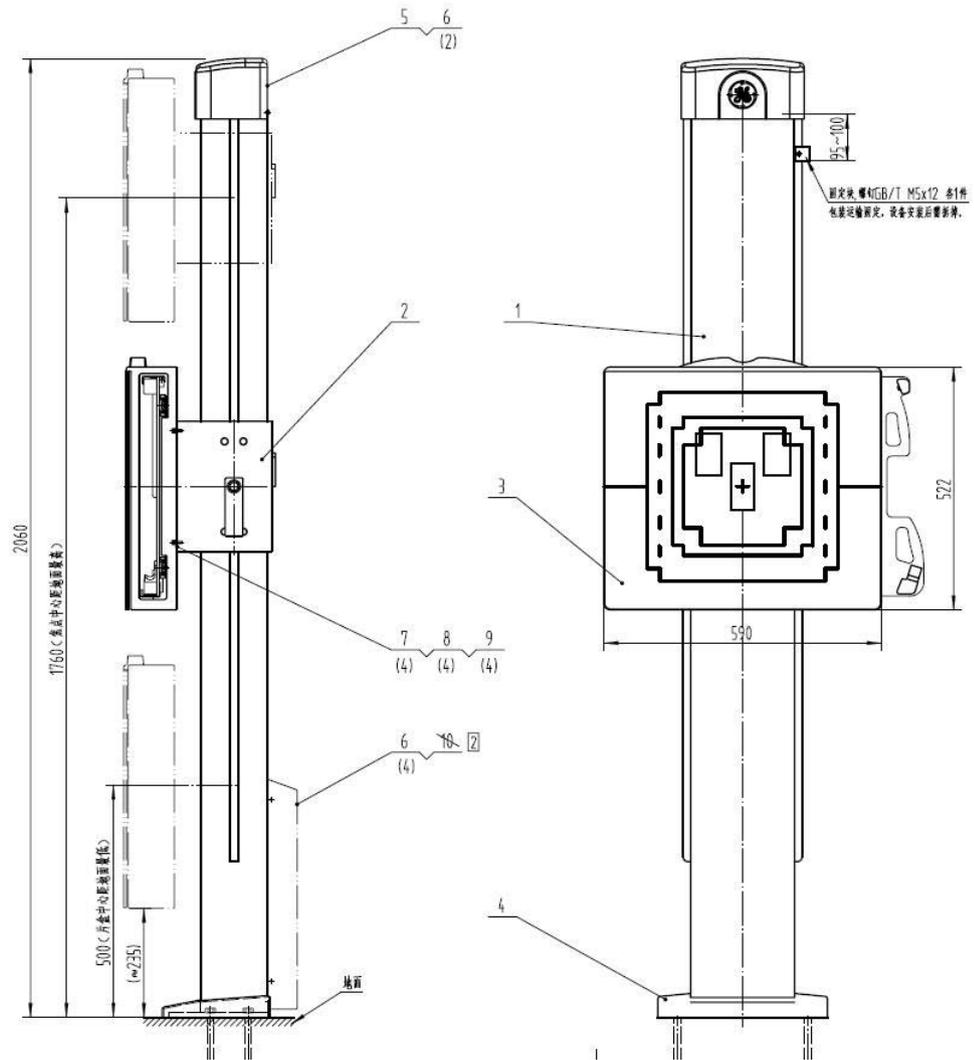


Figure 6-10 Standard Wall Stand Plan View

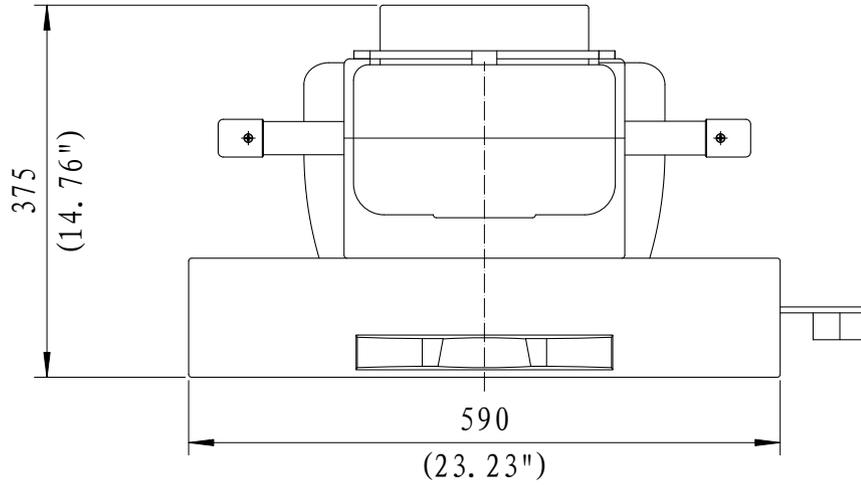


Figure 6-11 Standard Wall Stand Top View

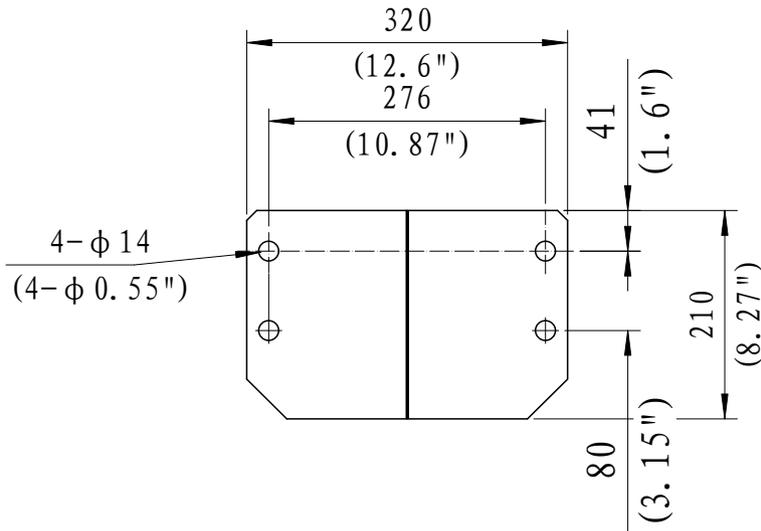


Figure 6-12 Standard Wall Stand Template

2.2.5 Table and Wallstand shipping Dolly

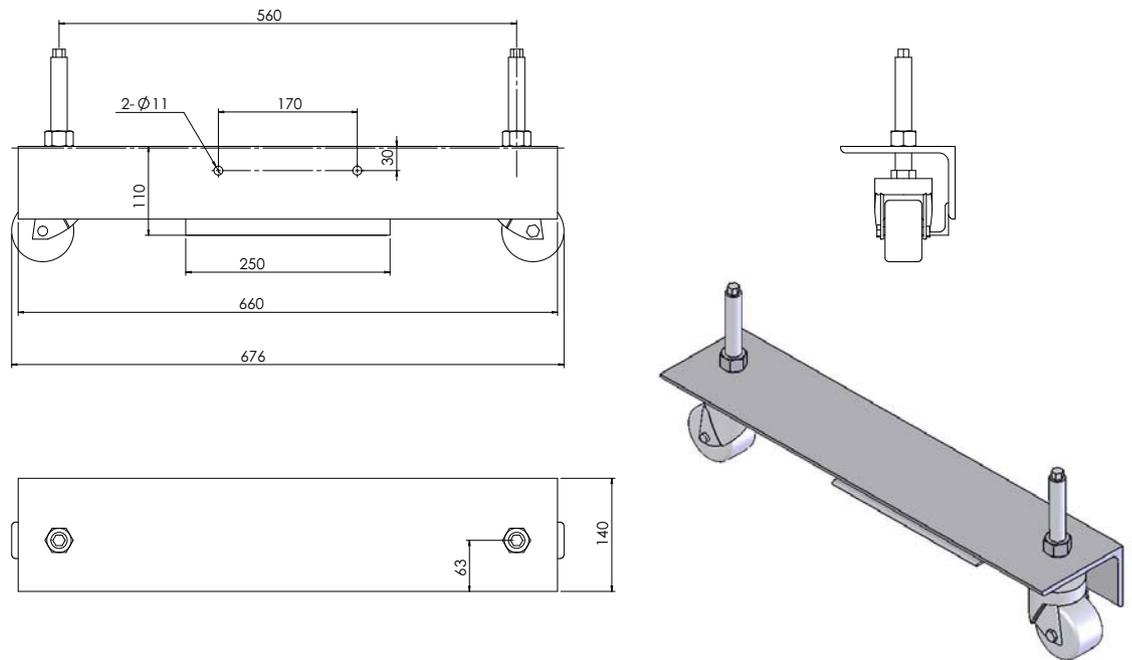


Figure 6-13 Dolly

2.2.6 UPS (Optional)



Figure 6-14 UPS Dimensions (Optional)

NOTICE

If the UPS grounding impedance exceeds 0.2ohm, UPS will alarm with site wiring fault and this could be disabled through UPS “User Settings”, but not recommended.

Section 3.0 Positioning and Mounting Equipment

3.1 Floor Loading and Recommended Mounting Methods

PRODUCT OR COMPONENT	WEIGHT	LOAD BEARING AREA	WEIGHT/OCCUPIED AREA	RECOMMENDED MOUNTING INFORMATION
Control room collector: PC Tower Monitor	16 kg (35.3 lbs.) 8.2 kg (18.1lbs)		NA NA	Shelf/Table mount (not anchored)
Standard Radiographic Table	632 kg (1393.3 lbs) Max. Patient Load is 150 kg (330.7 lbs)	1.25 m ² (13.5 ft ²)	625 kg/m ² (128 lbs/ft ²)	Floor mounting Recommendations: (4) M10 X 95 mm anchors (supplied)
Standard Wall Stand	185 kg (407.9 lbs)	0.07 m ² (0.75 ft ²)	2643 kg/m ² (541.3 lbs/ft ²)	Floor mounting Recommendations: (4) M10 X 95 mm anchors (supplied)
UPS	34.5 Kg (76.06 lbs)	0.08774 m ² (0.944 ft ²)	393.21 kg/m ² (80.57lb./ft ²)	Shelf/Table mount (not anchored)

Table 6-2 Product Physical Characteristics (weight)

Chapter 7 - Room Layout

Section 1.0 Radiation Production

Because X-ray equipment produces radiation, you may need to take special precautions or make special site modifications. The General Electric Company does not make recommendations regarding radiation protection. It is the purchaser's responsibility to consult a radiation physicist for advisement on radiation protection in X-ray rooms.

Section 2.0 Clinical Access

Make sure that you plan the room with the following clinical access requirements:

- Provide emergency egress path out of the room for patient, operators and service personal, per country and regional requirements.
- Provide easy access to the patient table. Stretchers and other mobile hospital equipment must reach the table quickly.
- Clinicians at the patient table must be able to communicate with assistants in the control area.
- Operators in the control area must have easy access to the Operator Console. However, position the controls (including handswitches) so the operator cannot take exposures while looking around or standing outside the control booth's lead glass window.
- Consult customer on the number and location of nonelectrical lines (air, oxygen, vacuum, water, etc.) in the radiographic room.
- Provide easy access to the Wall Stand.
- Ensure there is enough space between the table and the Wall Stand to perform standing ankles, knees, etc.
- For the wallstand, ensure that the room layout is such that the tube can be centered on top of the horizontal detector.

Note: The generally accepted practice is to load the patient laterally. In case of room layout designed for longitudinal patient loading, some modifications must be brought to the table.

Section 3.0 Peripheral Equipment

Consult hospital personnel regarding additional space requirements for the following types of hospital equipment:

- Storage Cabinet
- Sinks
- Oxygen Stations
- Monitoring Equipment
- Crash Cart

Section 4.0

Room Layout Drawings

See [Figure 7-1](#) for detailed service and operation area requirements.

See [Figure 7-2](#) for typical system room layouts.

Note: The room layout shows the minimum room size that system needs, but customers should be required to prepare a room according with local regulatory requirements.

- Note:
1. Service area A is the least area to allow you to pull the table top out. That's to say, if the length of service area A is less than 2100mm, you will not be able to pull the table top off.
 2. Service area B is the least area to allow you to draw the table top out to open a service area for detector housing which is necessary for grid and Ion chamber install and disassembly.
 3. Area C's length 1300 is fixed, which allow the operator to pull down the tube to a height lower than the table top when SID is 1m for child patient.
 4. Service area E is the least area to allow you to pull out the PDU.
 5. Service area F is necessary.
 6. Operation area G only needed if you want to use the system with tube arm rotated 180 degree.

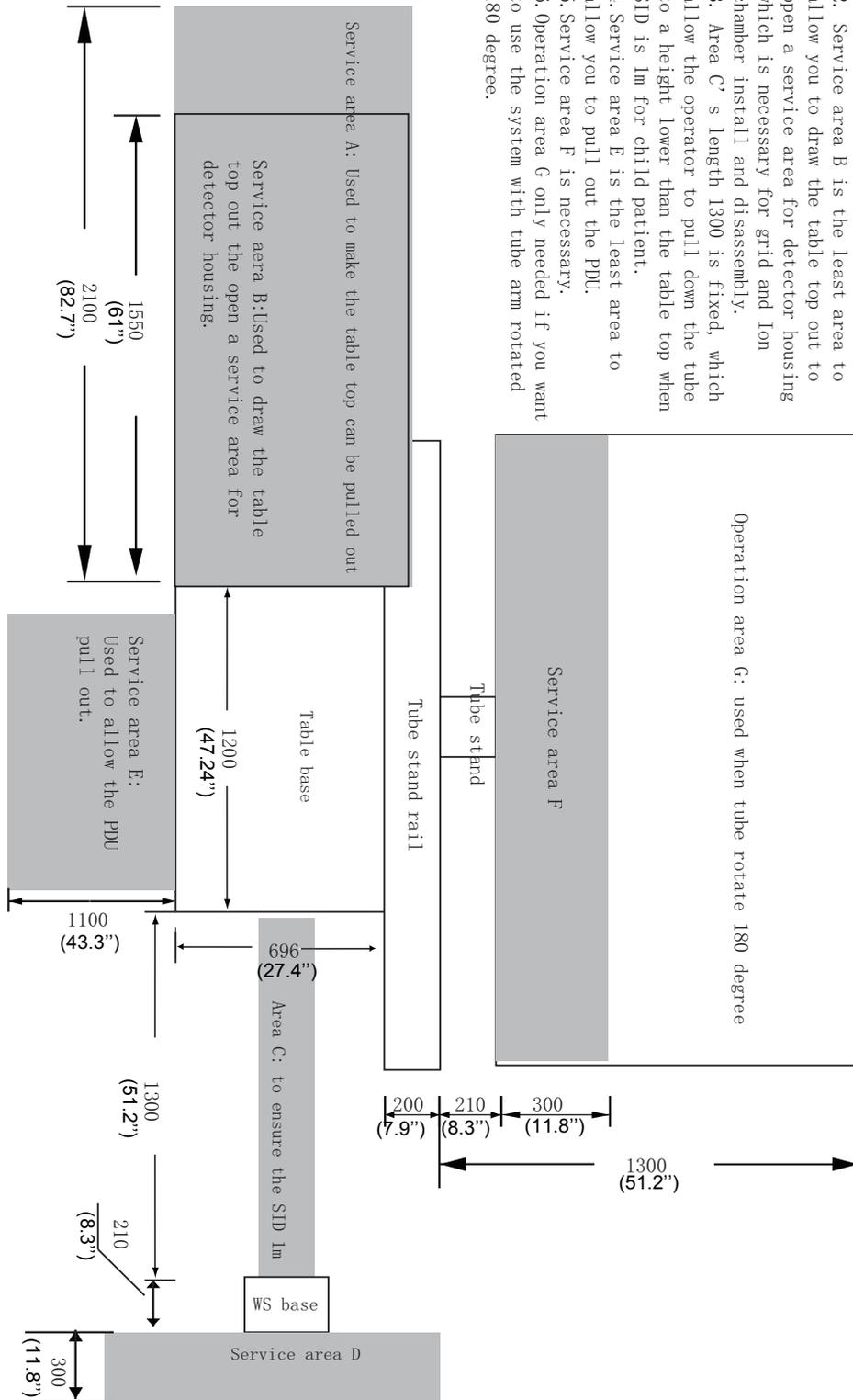


Figure 7-1 Detailed service and operator area requirements

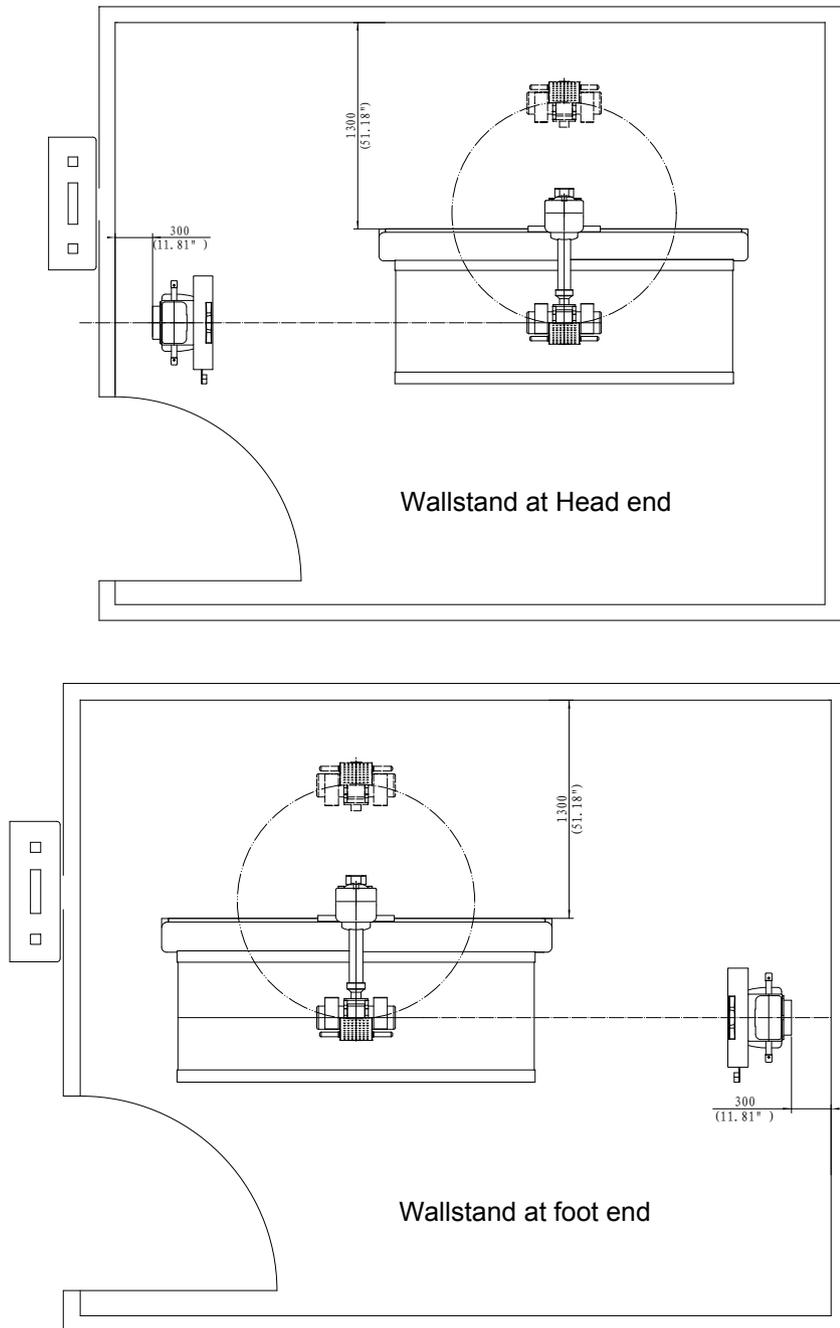


Figure 7-2 Typical Room Layout

Item	Component
1	Radiographic Table
2	Standard Wall Stand

Table 7-1 System Components

Item	Component
3	Control room collector Magic PC and Mouse LCD Monitor RCIM

Table 7-1 System Components

Application	Service	Length(Min)	Width(Min)	Ceiling(Min)
With 180° tubestand rotation	Tabletop service max	5.5m (18.1ft)	3.8m (12.5ft)	2.4m (7.9 ft)
	Tabletop service min	4.8m (15.8ft)	3.8m(12.5ft)	2.4m(7.9 ft)
Without 180° tubestand rotation	Tabletop service max	5.5m(18.1ft)	2.5m (8.2ft)	2.4m(7.9 ft)
	Tabletop service min	4.8m (15.8ft)	2.5m(8.2ft)	2.4m(7.9 ft)

Table 7-2 System Room Size Dimension

Figure 6-2 Detailed service and operator area requirement

Chapter 8 - Planning Aids

Section 1.0 Shipping Dimensions and Weights

PRODUCT OR COMPONENT	SHIPPING DATA					
	SHIPPING DIMENSIONS (APPROX.)			GROSS SHIPPING WEIGHT (approx.)	NET SHIPPING WEIGHT (approx.)	SHIPPING METHOD
	LENGTH	WIDTH	HEIGHT			
Table	250 cm (98.4")	128 cm (50.4")	120 cm (47.2")	650 kg (1433 lbs)	440 kg (970 lbs)	box 1# including "FIRST OPEN ME" box
Tube Stand	230 cm (90.6")	20 cm (7.9")	37 cm (14.6")	215 kg (474 lbs)	60 kg (132 lbs)	box 2#
Wall Stand	225 cm (88.6")	86 cm (33.9")	61 cm (24")	250 kg (551 lbs)	185 kg (408 lbs)	box 3#
Workstation+Monitor+RCIM	75 cm (29.5")	100 cm (39.4")	115 cm (45.3")	70 kg (154 lbs)	45 kg (99 lbs)	box 4#
Detector	102 cm (40.2")	80 cm (31.5")	44 cm (17.3")	40 kg (88 lbs)	12 kg (26 lbs)	box 5#

Table 8-1 Shipping Data

Section 2.0

Installation Tools and Materials Required

2.1 Tools and Materials Checklist

The following tools and materials are needed for installation, but are not shipped with the product:	Completed
Assorted hardware for termination of electrical connections (solder-less ring lug terminals and butt splices, AWG 2-18)	<input type="checkbox"/>
Tie wraps, electrical tape and wire markers	<input type="checkbox"/>
Tags for labelling incomplete work in accordance to OSHA and regulatory requirements	<input type="checkbox"/>
Tag and lock-out equipment	<input type="checkbox"/>
Assorted 12-point sockets (SAE and metric), drives, wrenches and torque wrench (Nm and ft.-lbs)	<input type="checkbox"/>
Electric and hammer drill. Assorted masonry and high-speed bits in both metric and SAE sizes	<input type="checkbox"/>
Assorted sizes of tongue and groove pliers, hammers, hex wrenches (metric and SAE), screw drivers and metal files	<input type="checkbox"/>
Assorted sizes of wire cutters and strippers, ratchet and standard crimpers (42,400 mm ² and upwards), and a 75 watt soldering iron	<input type="checkbox"/>
Heat and electrical tape	<input type="checkbox"/>
Chalk line	<input type="checkbox"/>
Digital multimeter	<input type="checkbox"/>
4 ft. level (or two standard levels)	<input type="checkbox"/>
Dosemeter	<input type="checkbox"/>
Densitometer	<input type="checkbox"/>
Thread fixing glue	<input type="checkbox"/>

Section 3.0 Preparing the Delivery Route

1.) Step One – Sketch out the Route

Begin preparing Route Survey by sketching the area of the hospital or clinic which will receive the equipment. Include all areas on the delivery route from outside of building to destination. See sample sketch below.

Reference Numbers

Numbers in circles refer to the Route Survey data. The Route Survey is a form on which site data is listed (step 2).

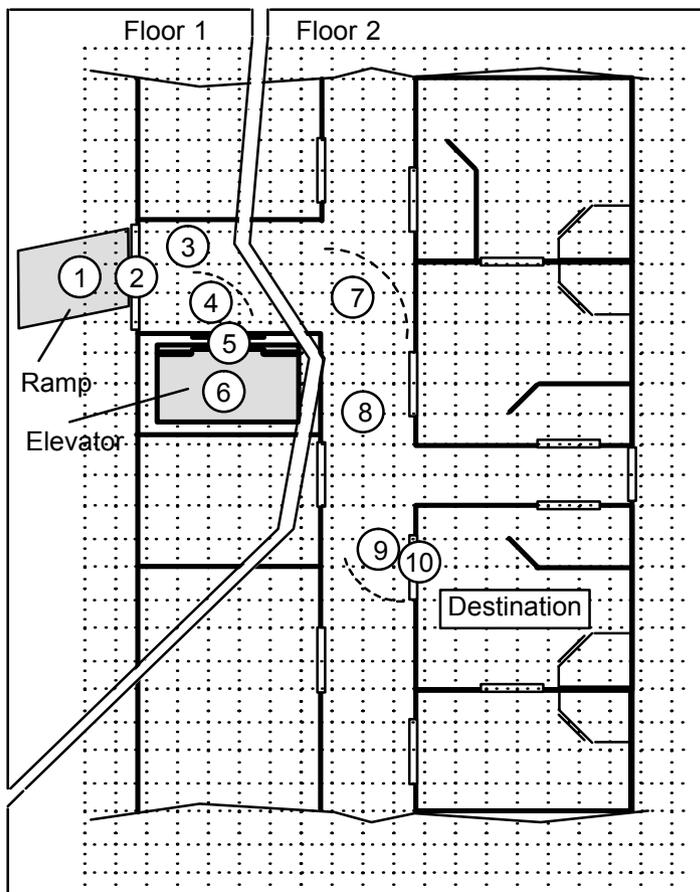


Figure 8-1 Sample Route

2.) Step Two – Survey the Route

Record all loading capacities, corridor widths, door openings, turning radii, flooring materials, elevator sizes, obstructions and so on for reference.

3.) Step Three – Check the Route

Verify equipment can actually be transported via the route determined in step 1.

Section 4.0

Networkflow Audit

Networkflow (net' wurk' flo) *n* 1. The study of how to integrate diagnostic imaging devices into both your facility's network *and* workflow. -*v* 2. The act of integrating a digital diagnostic device most effectively for your particular situation. 3. Leveraging your network equipment and workflow investment for peak efficiency.

Understanding how your facility leverages its network investment through our *Networkflow* process will help us better integrate the system into your operations. The following is intended to identify the various ways the system can fit into your workflow and the ramifications of selecting one path or another. We would like to start at the beginning, with the patient arriving at your facility, going through registration/admittance/patient scheduling and proceed all the way to the read images being archived.

4.1 What is the *Networkflow* Audit?

This audit was designed to collect information on your network, your DICOM equipment, your workflow and your dataflow. Once this information is collected, it will be used to determine the best way the system can fit into your facility. The information will also be used to ease and speed the integration of the system into your facility.

This audit is intended to be performed before the system is quoted to you. The audit process will uncover aspects of your network and workflow that will impact how well the system will integrate into your facility. With all facts uncovered, GE can prepare a more accurate quote and minimize "surprises" at the time of install.

You should fill this out with the GE Healthcare representative. They will be able to answer any questions you may have.

4.2 Facility Information

Name of facility:	_____	Room #:	_____
Workflow contact:	_____	Phone:	_____
Network Infrastructure contact:	_____	Phone:	_____
DICOM Device contact:	_____	Phone:	_____
Other contact:	_____	Phone:	_____
GEHC Sales Representative:	_____		
GEHC Auditor:	_____		

4.3 Workflow Analysis

When the patient arrives in the system room for the exam, how is the patient data entered into the system?

- Manually typed Entered via barcode reader Downloaded from HIS/RIS
Barcode format: _____

If the patient information was downloaded from a HIS/RIS system, how would the query be structured? *(Pick all that apply)*

- By date By modality By patient information
 By procedure By product (AE Title)
 Other method - Please explain: _____

In retrieving patient schedule information, do you query

- Once at the start of the shift Several times during a shift Before each patient

What percent of images acquired are reviewed via softcopy? _____%

What percent of images acquired are printed? _____%

Once the digital diagnostic images are acquired, what is your facility's default workflow?

(Pick one)

- Manually send Automatically push

(Pick all that apply)

- Review station(s) Archive system(s) Printer(s)

When images are configured for automatic push, what would you like to be sent to PACS/archive/review stations?

- Raw Processed Raw and Processed

When images are printed, on what device is the print command originated? *(Pick all that apply)*

- The system A review workstation A PACS system

How soon after the images are acquired is the first image quality check done?

- Before the next image is shot Before the patient leaves After patient leaves

When it comes to image quality, would you prefer to;

- Consider all images good unless marked bad
 Consider all images bad unless marked good

4.4 The Physical Network

Physical infrastructures vary widely from institution to institution. GE Healthcare tried to pick the most popular networking connection to ease integration into your facility's network.

In the system room, this facility;

- Has 100baseT installed Has 10baseT installed Has a different network installed
 Will have 100baseT installed Will have 10baseT installed We don't have a network installed

Is the network open to GE?

- Yes No

Do you segment your network using subnets?

- Yes No

Our equipment's IP addresses are:

- Static Acquired via DHCP A combination of both methods

4.5 System Parameters

System	
Host Name:	_____
Network (IP) Address:	____ . ____ . ____ . ____
Subnet Mask:	____ . ____ . ____ . ____
Router IP:	____ . ____ . ____ . ____
Scheduled Station AE Title:	_____

The **Host Name** is the network's name for the system.

IP addresses uniquely identify a device on a network. IP addresses are constructed of 32 bits, usually displayed as four numbers separated by a period. Please indicate the **Network (IP) Address** that will be assigned to the system.

Subnets are a method of logically dividing a network into smaller blocks. This is usually done based upon locality, functionality or security requirements. If your facility will place the system on a subnet, please list the **Subnet Mask** and **Router IP**.

The **Scheduled Station AE (Application Entity) Title** is the name your HIS/RIS system will use to send worklist information to the system.

4.6 Devices & Services Audit

Use the following narrative to complete the form on the previous page.

REMOTE HOSTS: Remote hosts are DICOM devices to which the system can push an image. Remote hosts can be review workstations, archival devices, or PACS systems. Please indicate the type of remote host.

Now indicate the manufacturer and model name or number.

Compatibility can vary with software versions, please indicate the version of device firmware/software the device will be running.

List the device's **IP address**.

The answers to the next several items can be found in the device's DCS (DICOM Conformance Statement).

Please indicate the highest level of **DICOM conformance** for this device. If the device is not DICOM compliant, please indicate so and move on to the next device.

If the device does have some level of DICOM conformance please return a copy of the DICOM Conformance Statement with this completed form.

DICOM supports a number of **image types**. Please indicate if this device supports the DX and/or the CR image types.

The **host name** is the name that will appear on the screen and users will use to indicate this device. Please list the host name.

The next four sections address the four services that remote host devices may offer. Each of the services will have its own AE (application entity) title and port number. The AE title is the name given to a service or application provided by a DICOM device. The port number is a logical designation within the device. These pieces of information are available in the device's DCS.

Being a **remote host server** allows the system to push images to other devices. If you want the device to accept this service, check yes and provide the AE title and port number.

Being a **query/retrieve** service class provider allows the system to query this device and retrieve images stored there. If you want this device to provide these services to the system check yes and fill in the requested items.

The **query/retrieve by** study or patient controls how much the user is able to retrieve at one time. For study, the user may retrieve studies, series, images. For patient, the user may retrieve all of the study attributes plus a patient's entire image collection.

A **storage commitment** provider confirms that images sent by the system to an archival system were received and stored. Note - This option is only available when the system is sending DX type images. If your device supports both DX image types and storage commitment check yes and provide the AE title, the port number and the network (IP) address.

The **MPPS server** receives the messages sent by the system. These messages consist of information such as when the exam started and closed, how many images were acquired, dose information, etc. This information is then updated on the Hospital Scheduling system. If the site has an MPPS server, provide the AE Title , IP address and port number.

Printers	Include a DICOM Compliance Statement for each printer	
Manufacturer/Model:	_____	_____
Software/Firmware Version:	_____	_____
Prints via Spooler:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Network (IP) Address:	_ _ . _ _ . _ _ . _ _	_ _ . _ _ . _ _ . _ _
DICOM Compliance Level:	<input type="checkbox"/> 1.0 <input type="checkbox"/> 2.0 <input type="checkbox"/> 3.0 <input type="checkbox"/> Not DICOM Compliant	<input type="checkbox"/> 1.0 <input type="checkbox"/> 2.0 <input type="checkbox"/> 3.0 <input type="checkbox"/> Not DICOM Compliant
Host Name:	_____	_____
Printer AE Title:	_____	_____
Port Number:	_____	_____

Printers: As with the remote hosts, please list the manufacturer and the model name/number. The software/firmware version should also be entered. Next, supply the IP address of the printer.

Indicate the DICOM compliance level of the printer. If it is not DICOM compatible, please indicate so.

DICOM compatibility does not guarantee all functions will work properly. **Include every unique printer's DICOM Compliance Statement.**

Supply the Host name for the printer. Look in the DCS for the printer's AE title and port number.

RIS Systems	Include a DICOM Compliance Statement for each device	
Manufacturer/Model:	_____	_____
Software/Firmware Version:	_____	_____
Network (IP) Address:	____.____.____.____	____.____.____.____
DICOM Compliance Level:	<input type="checkbox"/> 1.0 <input type="checkbox"/> 2.0 <input type="checkbox"/> 3.0 <input type="checkbox"/> Not DICOM Compliant	<input type="checkbox"/> 1.0 <input type="checkbox"/> 2.0 <input type="checkbox"/> 3.0 <input type="checkbox"/> Not DICOM Compliant
Host Name:	_____	_____
HIS/RIS AE Title:	_____	_____
Port Number:	_____	_____
Modality used for Scheduling:	<input type="checkbox"/> DX <input type="checkbox"/> CR	<input type="checkbox"/> DX <input type="checkbox"/> CR

RIS Systems: As with the remote hosts please list the manufacturer and the model name/number. The software/firmware version should also be entered.

Indicate the IP address the device is using as well as the DICOM compliance level. **Please include the DCS for the RIS with this completed form.**

Fill in the Host name.

Look in the DCS for the AE title and port number.

Please indicate if this device supports the DX and/or the CR image types. This information should also be in the device's DCS.

4.7 Dataflow Analysis

Now that we have outlined the way your facility works and the devices you work with, we would like to define how the images flow through your network.

The system is an acquisition-only device. Because of that fact you will need to move acquired images off the system and into your work/data flow. Please use the chart below to describe your data flow. As an example, if your facility reviewed images as the first step after acquisition, the review box would be checked in the first column of the **Task** row and the review workstation would be checked in the first column of the **Device** row. You should use each of the functions once.

	1st step after acquisition	2nd step after acquisition	3rd step after acquisition
Task	<input type="checkbox"/> Archive <input type="checkbox"/> Print <input type="checkbox"/> Review	<input type="checkbox"/> Archive <input type="checkbox"/> Print <input type="checkbox"/> Review	<input type="checkbox"/> Archive <input type="checkbox"/> Print <input type="checkbox"/> Review
Device	<input type="checkbox"/> Archive device <input type="checkbox"/> PACS <input type="checkbox"/> Printer <input type="checkbox"/> Review Workstation <input type="checkbox"/> Spooler ➡ Printer(s) <input type="checkbox"/> Spooler ➡ Review Workstation(s)	<input type="checkbox"/> Archive device <input type="checkbox"/> PACS <input type="checkbox"/> Printer <input type="checkbox"/> Review Workstation <input type="checkbox"/> Spooler ➡ Printer(s) <input type="checkbox"/> Spooler ➡ Review Workstation(s)	<input type="checkbox"/> Archive device <input type="checkbox"/> PACS <input type="checkbox"/> Printer <input type="checkbox"/> Review Workstation <input type="checkbox"/> Spooler ➡ Printer(s) <input type="checkbox"/> Spooler ➡ Review Workstation(s)

Printing: It is important to us to understand the path your images follow before they are printed. We are now looking to answer the question of what road an image most typically travels on its way to be printed regardless if that is the first step in your process or not. Please try to find in the list below the path that best describes the path the image takes from acquisition to printing.

- System ➡ Printer
- System ➡ Spooler ➡ Printer(s)
- System ➡ Archive Device ➡ Printer
- System ➡ Archive Device ➡ Spooler ➡ Printer(s)
- System ➡ Archive Device ➡ Review Workstation ➡ Printer
- System ➡ Archive Device ➡ Review Workstation ➡ Spooler ➡ Printer
- System ➡ PACS ➡ Printer
- System ➡ PACS ➡ Spooler ➡ Printer
- System ➡ Review Workstation ➡ Printer
- System ➡ Review Workstation ➡ Spooler ➡ Printer(s)
- System Other: _____ ➡ Printer(s)

Image Review: Now let's trace the path from acquisition to image review. Again, pick the item below that best describes how the image flows from the system to the radiologist.

- System ➡ Printer ➡ Printed Film ➡ Radiologist
- System ➡ Review Workstation ➡ Radiologist
- System ➡ Archive Device ➡ Review Workstation ➡ Radiologist
- System ➡ PACS ➡ Radiologist
- System ➡ PACS ➡ Review Workstation ➡ Radiologist
- System ➡ Other: _____ ➡ Radiologist

Archive: The final part of this triad is archiving images. Pick the item below that best describes the flow of images to be archived.

- System ➡ Archive Device
- System ➡ PACS
- System ➡ Printer ➡ Printed Film ➡ Filing System
- System ➡ Review Workstation ➡ Archive Device
- System ➡ Review Workstation ➡ PACS
- System ➡ Other: _____ ➡ Archive Device

4.8 What Will Happen Next?

Next, your completed audit sheet will be analyzed by your GE Healthcare representative and any issues identified.

Section 5.0

Pre-Installation Checklist

Delivery Date: _____ Sales Person: _____
Customer: _____ FDO No.: _____ Room # _____
Equipment: _____

Physical Requirements of Site **Completed**

- 1.) Room size adequate for intended equipment configuration?
- 2.) Floor is strong enough for intended equipment and mounting methods approved – seismic regulatory codes considered?
- 3.) Delivery route accommodates all intended equipment?
- 4.) Radiation physicist consulted?
- 5.) Necessary alterations made to circumvent obstructions?
- 6.) Modifications to room finished?
- 7.) Supports, platforms been provided?
- 8.) Support structures installed for floor, and wall mounted equipment?
- 9.) Has floor been modified for cable ducts?
- 10.) Electrical service in place - at the ratings specified in pre-installation documentation?
- 11.) Power available to operate power tools?
- 12.) All non-electrical lines (air, water, oxygen, vacuum) installed?

Interconnections **Completed**

- 1.) Signal cable, power and grounding plans produced?
- 2.) Necessary interconnection hardware, such as junction boxes, conduit or raceways, and fittings provided?
- 3.) Interconnection hardware installed?
- 4.) Flexible, stranded wire provided for System input power connection?
- 5.) System “feeder” power cables pulled and sufficient length available at disconnect box for connections?
- 6.) Interconnecting cables continuity checked, and labeled?
- 7.) All high voltage cable lengths verified?
- 8.) Interface information available for equipment?

General	Completed
1.) Walls, and floor clear of all obstructions?	<input type="checkbox"/>
2.) Walls finished?	<input type="checkbox"/>
3.) Finished floor installed?	<input type="checkbox"/>
4.) Room lights installed?	<input type="checkbox"/>
5.) Dust-creating work completed?	<input type="checkbox"/>
6.) Old equipment within room removed?	<input type="checkbox"/>
7.) Component positions clearly marked on floor?	<input type="checkbox"/>
8.) Space available to store equipment?	<input type="checkbox"/>
9.) Lock on door, or locked room available?	<input type="checkbox"/>
10.) Room IP Addresses for DICOM and Broadband identified?	<input type="checkbox"/>
11.) Have all fire/safety inspections for occupancy been completed?	<input type="checkbox"/>

Comments: _____

Inspection Date(s): _____

Installation Project Manager Signature

Chapter 9 - System Cable Information

Section 1.0 Introduction

The following information is provided as an aid to make the physical installation of system cables easy and efficient. In the tables that follow, the physical characteristics of each cable and its associated connectors is provided. Thus making it easier to plan cable paths and clearances in advance. Physical characteristics are given for each available cable length. Review cable lengths carefully and choose lengths appropriate for your installation prior to the equipment arriving, to avoid unnecessary installation delays.

Remember, it is up to you to make sure that all cables are routed and connected in accordance with all regulatory laws that may apply.

Section 2.0 Cable Information

2.1 Cable Lengths and Characteristics

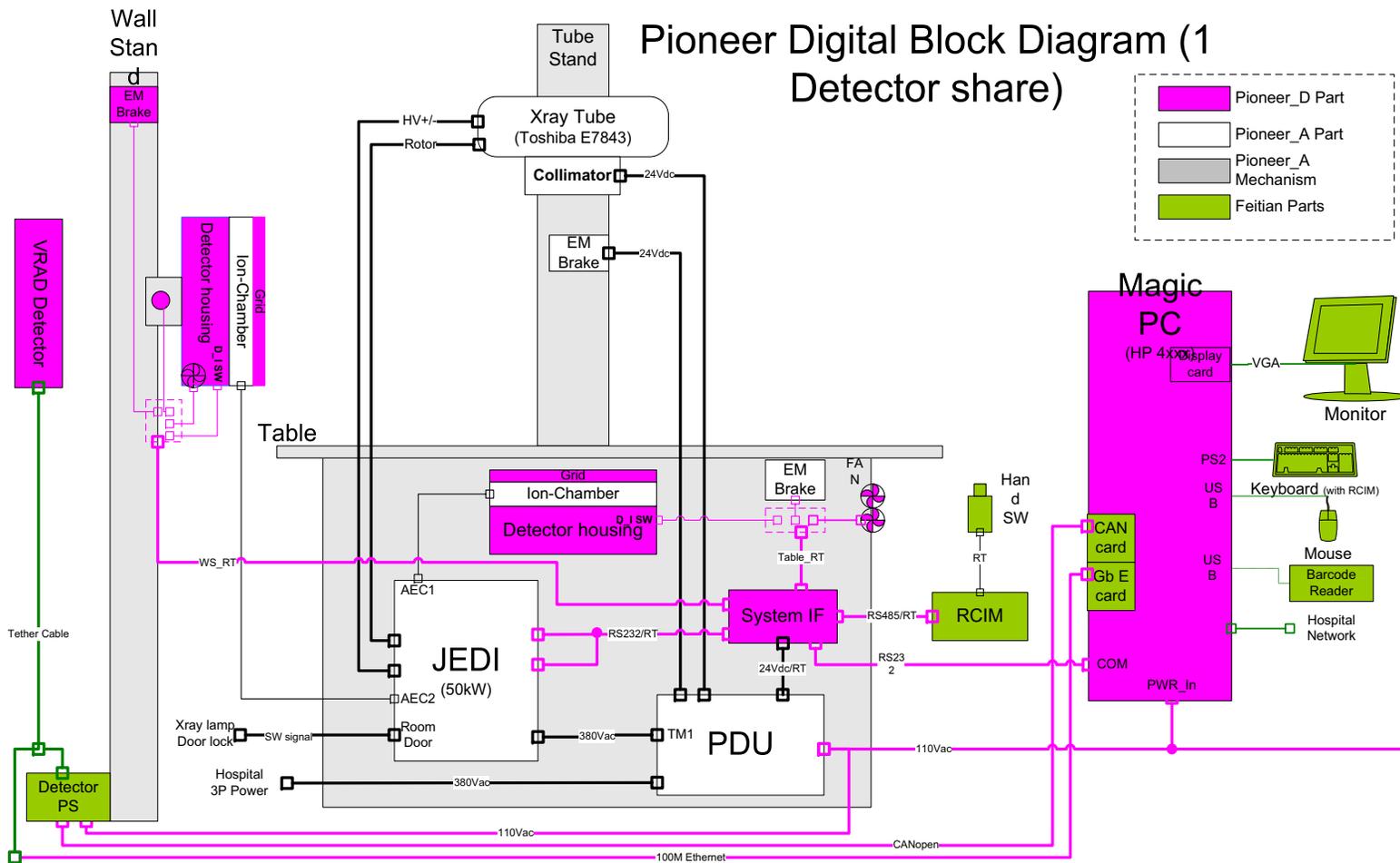
Item	Cable Number or Name	PN.	Voltage (V)	Length	Usable Length (m)	Diameter	Cable Specification	Connector One End	Plug Size One End	Connector The Other End	Plug Size The Other End
1	Main power cable	Provided by customer									
2	Grounding cable	Provided by customer									
3	PC power cable	5237591	110	15 m (49.2 ft)	12.8 m (42 ft)	10 mm (0.39")	ULSJT#18x3C	PDU J1 or J2	30x15	PC	25x17
4	Monitor power cable	5237591	110	15 m (49.2 ft)	12.8 m (42 ft)	10 mm (0.39")	ULSJT#18x3C	PDU J1 or J2	30x15	Monitor	25x17
5	DPS Power cable	5241090	110	12 m (39.3 ft)	10 m (32.8 ft)	10 mm (0.39")	ULSJT#16x3C	PDU J3	30x15	DPS power filter	20x10
6	Wall stand AEC cable	N/A	N/A	24 m	N/A	N/A	N/A	Generator	N/A	Wall Stand	N/A
7	Wall stand grounding cable	5273210	0	12m	12	4.65	UL1015#10	Wall Stand	N/A	PDU	N/A
8	IF to WS cable	5241091	24	12 m (39.3 ft)	10 m (32.8 ft)	10 mm (0.39")	UL2464#18X8c	PDU IF J11	70x18	WS power box	20x20
9	IF RS232 cable	5241094	24	15 m (49.2 ft)	12.2 m (40 ft)	8 mm (0.31")	UL2464#22x10C	IFBd J7	33x16	PC RS232 port	33x16
10	RCIM IF cable	5241095	24	15 m (49.2 ft)	12.4 m (40.6 ft)	10 mm (0.39")	UL 20276#30x25P	IF Bd J4	70x18	console RCIM port	65x16
11	DPS CAN cable	5241087	24	15 m (49.2 ft)	14.4 m (47.2 ft)	8 mm (0.31")	UL2464#22x6P	DPS Can Port	33x16	PC can port	33x16
12	Detector Ethernet cable	5241097	24	15 m (49.2 ft)	14.4 m (49.2 ft)	8 mm (0.31")	CAT-5 LAN	Detector Ethernet port	12x10	PC Ethernet port	12x10
13	Rotation cable	5195936	120	8.7 m	8.7	13.8 mm	UL2501#16*6C+B	Generator j3	N/A	Tube	N/A
14	HV cable	220-0120	75K	8 m	8	33.4 mm	N/A	Generator	N/A	Tube	N/A
15	DR-F Power cable from PDU to UPS	5736255	110	15 m	15	N/A	N/A	PDU	3P, P=6.35	UPS	N/A

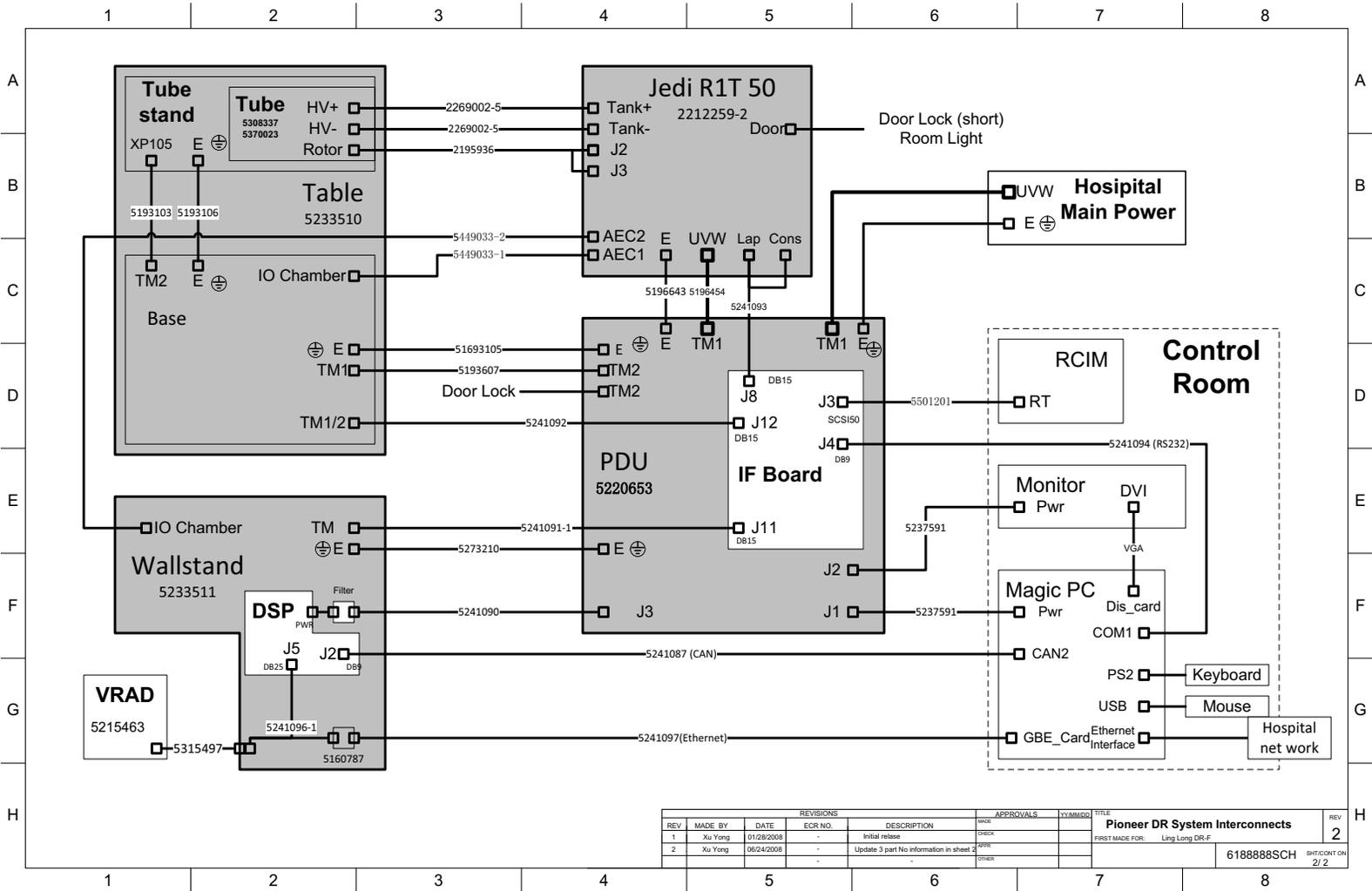
Item	Cable Number or Name	PN.	Voltage (V)	Length	Usable Length (m)	Diameter	Cable Specification	Connector One End	Plug Size One End	Connector The Other End	Plug Size The Other End
16	power cable from UPS to PC or Monitor	5732360	110	3 m	3	N/A	N/A	UPS	3P, P=6.35	PC	N/A
17	power cable from UPS to PC or Monitor	5732360	110	3 m	3	N/A	N/A	UPS	3P, P=6.35	Monitor	N/A
18	VRAD 7m Tether with Lemo head at system end cable	5315497	24	7 m	7	11.2-11.7 mm	N/A	WS	N/A	Detector	N/A
19	Main Power Cable - option	5245375	380	15 m (49.2 ft)	13 m (42.6 ft)	17 mm (0.67")	UL 600	Main Power	-	PDU TM1	-
20	Main Grounding Cable - option	5245422	0	15 m (49.2 ft)	13 m (42.6 ft)	8 mm (0.31")	UL 600	Main Power	-	PDU TM1	-
21	RCIM2 IF cable	5501201	30	15 m (49.2 ft)	12.4 m (40.6 ft)	7mm (0.275")	UL 20276#28x18P	RCIM 2	40*41.3	IF BOARD J3	49.91*36

Section 3.0 - System Master Interconnect Schematic (MIS)

NOTE: UPS is an optional part, for its installation or replacement, please refer to its installation manual.

Pioneer Digital Block Diagram (1 Detector share)





REVISIONS				APPROVALS	DATE	TITLE
REV	MADE BY	DATE	DESCRIPTION	APPROVALS	DATE	TITLE
1	Xu Yong	01/28/2008	Initial release	DR		Pioneer DR System Interconnects
2	Xu Yong	06/24/2008	Update 3 part No information in sheet	DR		FIRST MADE FOR: Ling Long DR-F

618888SCH SHEET NO. ON 2/2

Appendix A - Revision History

Revision	Date	Reason for change
1	May 27, 2008	First Release
2	Aug 28, 2008	Update room layout
3	Mar 12, 2009	No change, just for revision control
4	Mar 12, 2009	No change, just for revision control
5	Mar 26, 2009	<ul style="list-style-type: none"> • Add whole system room temperature and humidity requirement in Chapter 2.1 Enviroment requirements • Update heat out put data in Chapter 2.1 Enviroment requirements • Add ceiling height requirement in Chapter 2.2 Structural requirements • Updated Chapter 3 Figure 3-2 • Updated Chapter 5 Figure 5-13 • Add detailed service and operation area illustration in Chapter 6.4 Room layout. • Update Cable length information in Chapter 8. • Update System interconnection Schematic to latest revision in Chapter 8.
6	Jul 10,2010	<ul style="list-style-type: none"> • Update heat out put data in Chapter 2.1 Enviroment requirements • Updated DPS box cable exit drawing. • Changed the Momentary Line Current (Amp) to 60 in table 4-3. Changed Wall Breaker Parameter to 60 A in table 4-4. • Add explanation for scale 1300: "It allows most of the clinical applications with the SID range of 1m-1.8m for WS by moving the tubestand." in p70 roomlayout. Changed service area between WS and wall from 210mm to 280mm. • Canceled note 2 in p70. • Updated room size dimension table in p69. • Add chapter 2 Special Construction. • Add second cover page for Brivo XR385. • Updated the Table 8-1 Shipping Data.
7	Dec 25,2010	<ul style="list-style-type: none"> • Modify MIS cable usable length. • Add second cover page for Brivo XR385. • Add English unit measurement • Add mounting bolt size for Table and Wallstand in chapter 6 section 3.
8	19JUN2012	<ul style="list-style-type: none"> • Add Section 1.4 for equipment classification in p19 • Add note for broadband connection in p42
9	28Feb2014	<ul style="list-style-type: none"> • Update RCIM to IF cable part number in chapter 9 • Update MIS cable graphic in chapter 9
10	23Mar2015	<ul style="list-style-type: none"> • Add RCIM I information in P28/P29/P52
11	07May2016	<ul style="list-style-type: none"> • Add UPS information



GE HEALTHCARE

**NO.1, YONGCHANG NORTH ROAD
ECONOMIC & TECHNOLOGICAL DEVELOPMENT ZONE
FAX: 86-10-67881850
TELE: 86-10-58068888
BEIJING, P. R. CHINA 100176**