

Order-No.: DD+DIS172.06E



1 Piece 6BXUV MA1

CR30-X

Type 5175/100

Edition 1, Revision 0



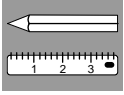
This documentation is separately available. Order No: DD+DIS172.06E

CONFIDENTIALITY NOTE:

Use, dissemination, distribution or reproduction of this document by unauthorized personnel is not permitted and may be unlawful.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



WARNING:

Improper operation or service activities may cause damage or injuries.

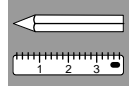


INSTRUCTION:

1. Read the "Generic Safety Directions" document (see MEDNET GSO => General Info => Agfa HealthCare => Publications => Service Manual) prior to attempting any operation, repair or maintenance task on the equipment.
2. Strictly observe all safety directions within the "Generic Safety Directions" and on the product.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



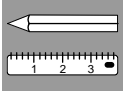
Chapter 11:

List of contents

1	Product Description	1
1.1	System Overview.....	1
1.2	Theory of Operation.....	2
2	Scope of Delivery and Accessories.....	4
2.1	Accessories	5
2.2	NX Workstation Licenses	7
3	Digitizer Dimensions	8
3.1	Dimensions of optional Table	9
4	Minimum free Space for Operation and Maintenance.....	10
5	System Integration	11
6	Climatic and ambient Conditions.....	13
6.1	During operation	13
6.2	During transport and storage.....	13
7	Electrical Connections.....	14
7.1	Electrical Connections at the Digitizer	15
7.2	Electrical Connections at the optional UPS	15
8	Specifications	16
8.1	Type Overview.....	16
8.2	Functional Data	16
8.3	Electrical DataDigitizer	16
8.4	Functional Dataoptional UPS	16
8.5	Climatic data.....	17
8.6	Sound Emission Data	17

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



8.7 Boot-up Time and Warm-up Time.....17

8.8 Interface Data.....17

8.9 Service Data.....17

8.10 Functional Data Image Plates17

8.11 Dimensions and Weight18

8.11.1 Dimensions, packed Machine18

8.11.2 Dimensions, closed Machine18

8.11.3 Dimensions, opened Machine.....18

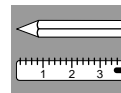
8.11.4 Weight 18

8.11.5 Dimensions Pallet18

9 Safety Standards 19

**Appended: Installation Checklist
Generic Safety Directions**

DOCUMENT CONTROL NOTE:
The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



1 Product Description

1.1 System Overview

The CR30-X digitizer is part of the "CR 30-X System" which comprises:

- Digitizer CR30-X
- NX Workstation
- Cassette with Image Plate (IP)

Optional Components (not displayed)

- Printer (Drystar 5302)
- Auto QC² Package
- Additional Cassettes
- UPS

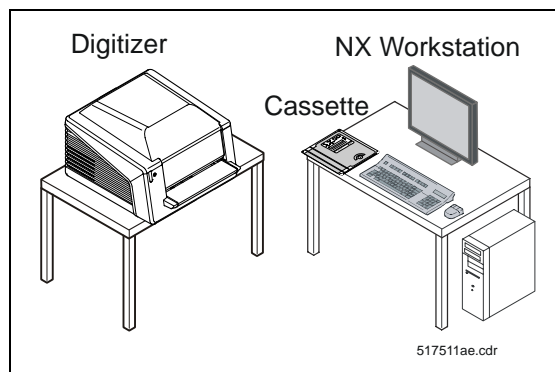


Figure 1



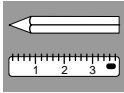
NOTE:

This document describes the installation planning of a CR30-X digitizer. For more information to the other components refer to

Component	Information Location
NX Workstation	MEDNET, GSO Library
Printer	MEDNET, GSO Library
UPS	Sections 2.1, 7.2 and 8.4

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



1.2 Theory of Operation

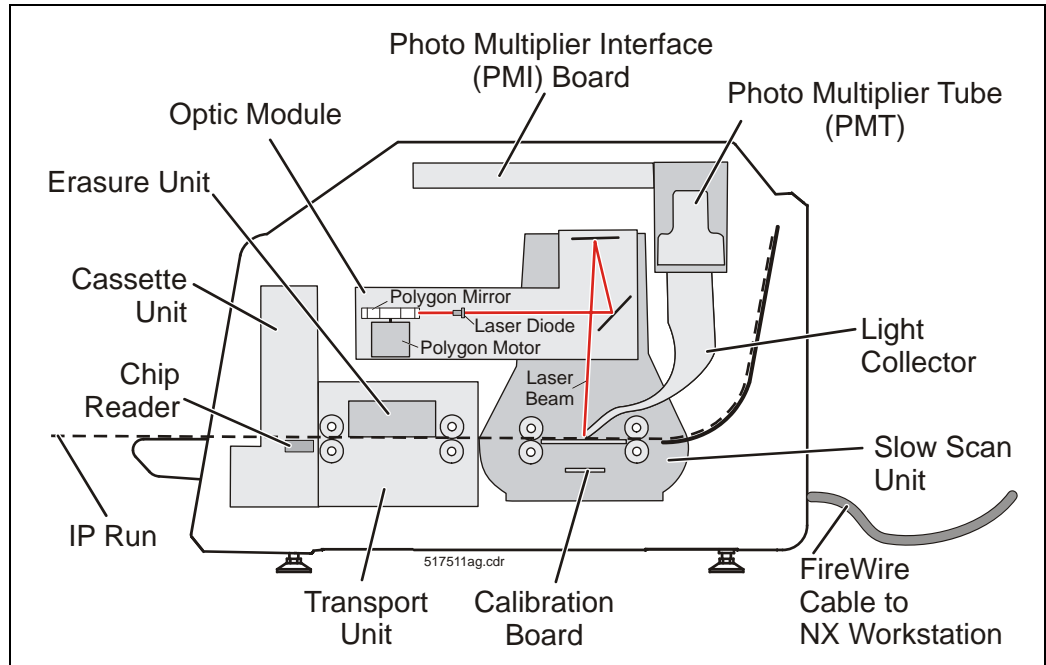


Figure 2: CR30-X general Structure

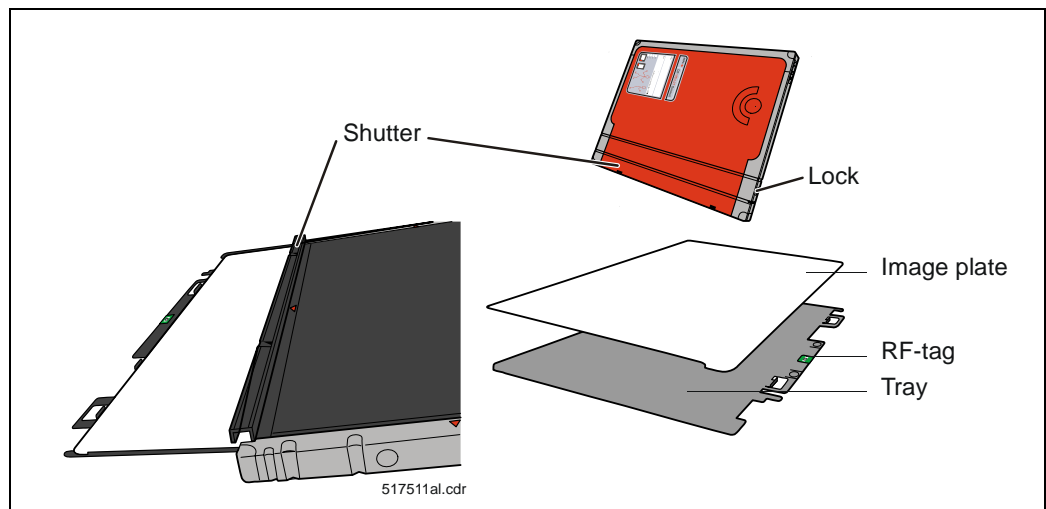
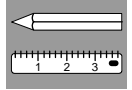


Figure 3: CR30-X Cassette with Image Plate "MD40"

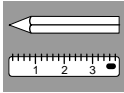
DOCUMENT CONTROL NOTE:
The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.

**Explanation of one scan cycle:**

- 1) The user inserts the cassette with image plate (IP) into the digitizer
- 2) The chip reader reads the image plate data
- 3) The user enters the patient data at the the NX workstation and selects the ID button to send the data to the digitizer
- 4) The cassette unit opens the cassette and pulls out the tray with IP
- 5) The transport unit drives the image plate to the slow scan unit
- 6) Via calibration board the digitizer determines the position of the polygon mirror to synchronize scanning and digitizing.
- 7) The laser beam which is generated in the optic module scans the image plate, while the slow scan unit drives the image plate
- 8) The blue emitted light is collected by the light collector
- 9) The PMT converts light to current, which is converted to digital pixels by the PMI board.
- 10) The digital image data are sent via FireWire Interface to the NX workstation
- 11) The image plate is driven back by slow scan unit and transport unit to the erasure unit: Several LED arrays erase the image plate.
- 12) The tranport unit puts the image plate back into the tray, and pushes the image plate with tray into the cassette.
- 13) The cassette unit closes the cassette.
- 14) The red blinking LED at the front panel changes to green, indicating that the scan cycle is finished.
- 15) The user removes the image plate for the next exposure.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



2

Scope of Delivery and Accessories**IMPORTANT:**

The digitizer is ordered and delivered with a dedicated NX workstation.

It is not possible to connect it to another type of Agfa CR workstation (e.g. QS 3.5)

**NOTE:**

The digitizer is delivered with all parts, which are required to connect it to a NX workstation.

Device name: CR30-X
 Type: 5175/100
 ABC Code ETDPS

Quantity	Description
1	CR30-X Digitizer
1	CU filter
1	Installation procedure
1	CE declaration of conformity
1	Installation report
1	Installation Instruction (Chapters 1 and 11 of the Technical Documentation)
1	FireWire cable (IEEE 1394), 4.5 m
1	1 power cable, Europe, 3 m long
1	1 power cable, USA, 3 m long
1	Backup CD with software for the digitizer
1	CD with User Manuals in 17 languages* and reference manual in English language

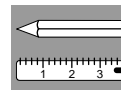
*Chinese-simplified, Chinese-traditional, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Vietnamese, Estonian, Hungarian, Latvian, Lithuanian, Slovak, Slovenian, Turkish.

**NOTE:**

Number and format of cassettes / image plates is depending on the individual order.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



2.1 Accessories

Item	Order Number	Comment
Table with wheels	EWRP3	For dimensions refer to 3.1
UPS Powerware 5115, 120 V Version	EGPSE	Can be used for digitizer and NX workstation. For technical specifications see sections 7.2 and 8.4. See safety note below.
UPS Powerware 5115, 220 V Version	EGPTG	
Wall fixation Kit	EWRQ5	To be used in earthquake areas and in mobile usage <div style="text-align: center;"> <p>Rear Mounting Plate</p> <p>Retainers for CR30-X Feet</p> <p>Base Plate</p> <p>517511bb.cdr</p> </div>
CR Inroom X-Ray Shielding	EQBD5	For protection from scattered radiation for CR cassettes inside or outside the digitizer, if installed in the X-ray room. May not be used to protect operator personnel. <div style="text-align: center;"> <p>X-Ray Shielding</p> <p>517511ak.cdr</p> </div>



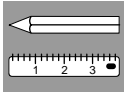
WARNING:

Risk of retakes due to power loss during scanning.

It is strongly recommended to install a UPS for the digitizer and the NX workstation.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



NOTE to Accessory "Remote Service":

In general it is possible to diagnose and repair the digitizer to a certain extent remotely.

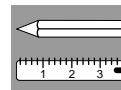
To enable remote service of the digitizer remote access has first to be organized.

Remote Access is established via the Agfa own Secure Remote Service System (SRSS).

For more information to the SRSS see MEDNET – GSO Library - Technical Services - Service Delivery - SRSS

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



2.2 NX Workstation Licenses

			NX Lite - EL Order Codes	NX Premium - EL Order Codes
Mandatory Starter Pack	NX application in 4 main panes	<ul style="list-style-type: none"> Workflow Engine CR30-X DICOM Print DICOM Store Export 	ES82S	ES83U
Optional Feature Packs	NX Optiview	<ul style="list-style-type: none"> Square marker Grid Line suppression Black border 	ES897	ES897
	NX Integrated Workflow	<ul style="list-style-type: none"> Emergency MPPS Viewing priors 	Not applicable	ES9AC
	NX Precision Tools	<ul style="list-style-type: none"> Advanced tools and annotations Advanced measurements Musica1 Advanced processing 	Not applicable	ES9BE
	NX Quality Assurance	<ul style="list-style-type: none"> Dose consistency reporting Repeat Reject Program 	Not applicable	ES9DJ
Optional Feature Packs	NX RIS Connectivity	RIS Link	ES9CG	ES9CG
	NX Full Leg Full Spine	Full Leg/spine stitching	Not applicable	Not applicable
	NX Mammo	Musica for mammo	Not applicable	Not applicable
	NX Musica2 Adaptive	Musica ² for GenRad & Thorax	Not applicable	ES9GP
	NX Pediatric	Enhanced Pediatric age groups	Not applicable	ETL4H
	AUTOQC2	AutoQC ² SW only	EVC2V / EVCZR	EVC2V / EVCZR
NX Radiotherapy	Radiotherapy	ES9FN	ES9FN	

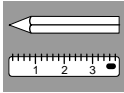


NOTE:

The NX workstation is delivered together with the CR30-X. The ordered mandatory starter pack and the NX Optiview license are activated from factory.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



3 Digitizer Dimensions

Scale 1:20. Dimensions in cm [inch].

Digitizer closed:

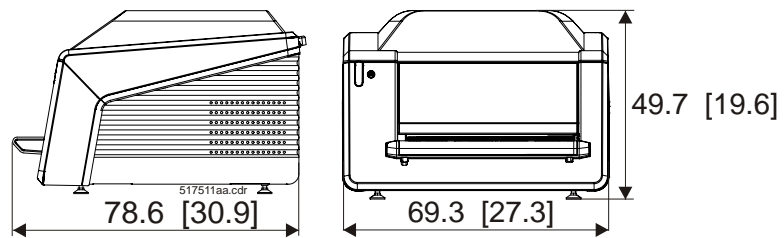


Figure 4

Digitizer opened:

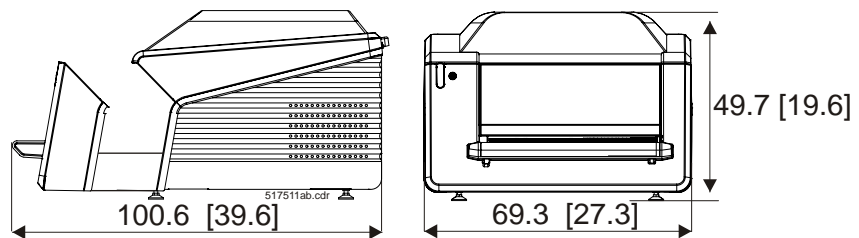
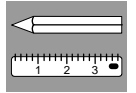


Figure 5

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



3.1 Dimensions of optional Table

Scale 1:20. Dimensions in cm [inch].

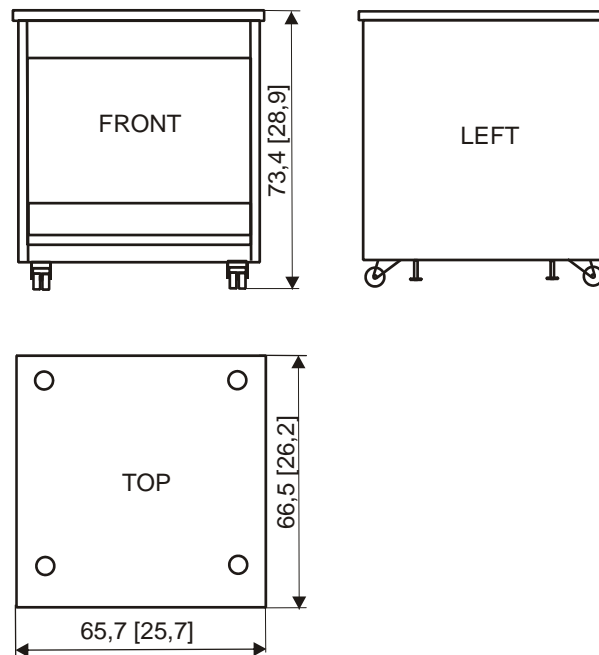
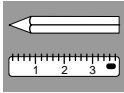


Figure 6

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



4 Minimum free Space for Operation and Maintenance

Scale 1:20. Dimensions in cm [inch].

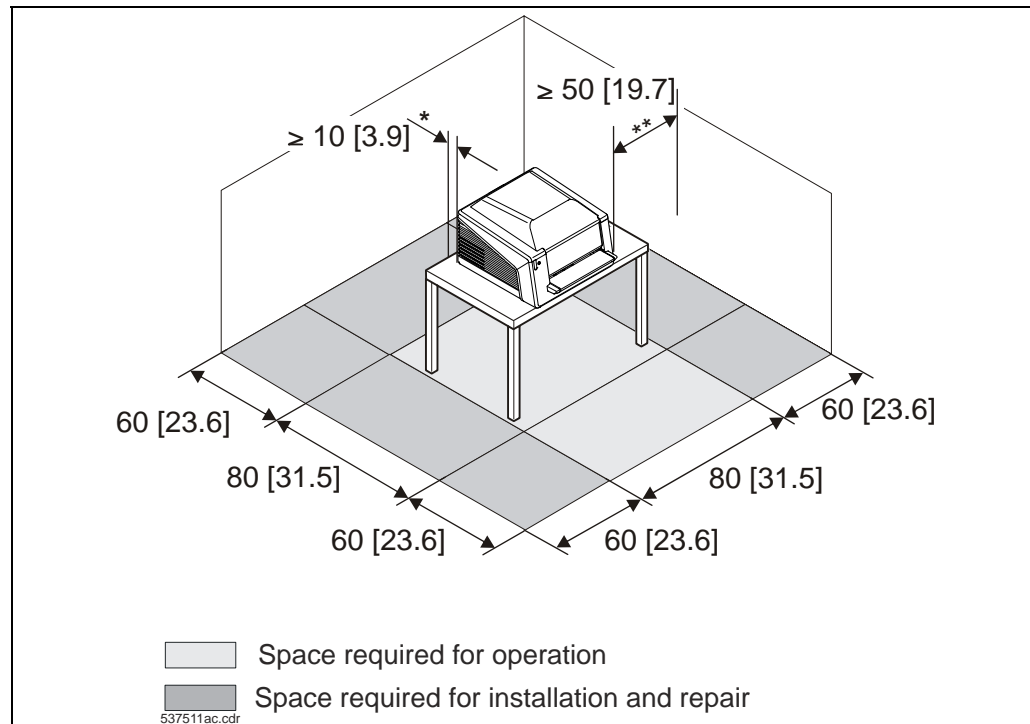


Figure 7



NOTE:

If installed on the optional wheel table (see section 2.1) the digitizer can also be installed in a corner.

Be aware, that the mains switch is in the rear. See section 7.1. At a corner installation the mains switch may not be accessible.



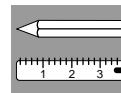
IMPORTANT:

*The clearance in the rear for electrical connectors and to provide sufficient air flow has to be at least 10 cm [3.9 in] in any case.

**Also at least 50 cm [19.7 in] space has to be provided on the right hand side to allow cleaning of the scan line with the cleaning brush. This can be performed by the customer.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



5 System Integration

- The digitizer has to be connected to a dedicated NX workstation via Fire Wire cable.
- One NX workstation can acquire images from one digitizer.



IMPORTANT:

- Unpacking and putting on table to be performed by forwarder.
- Recommended table height: 75 cm.
- The standard Fire Wire cable length is 4.5 m, what is sufficient for the standard "Fast ID workflow".
- If the 4.5 m Fire Wire cable is too short, a "FireWire to fibre optic converter" has to be installed between Digitizer and NX workstation. This converter has to be organized locally.



NOTE:

***Fast ID Workflow** means: The cassette is not identified before exposure, but waits for patient data entry at the NX after the cassette is entered into the digitizer. Only when the patient data are entered at the NX and sent to the digitizer the scan cycle begins.

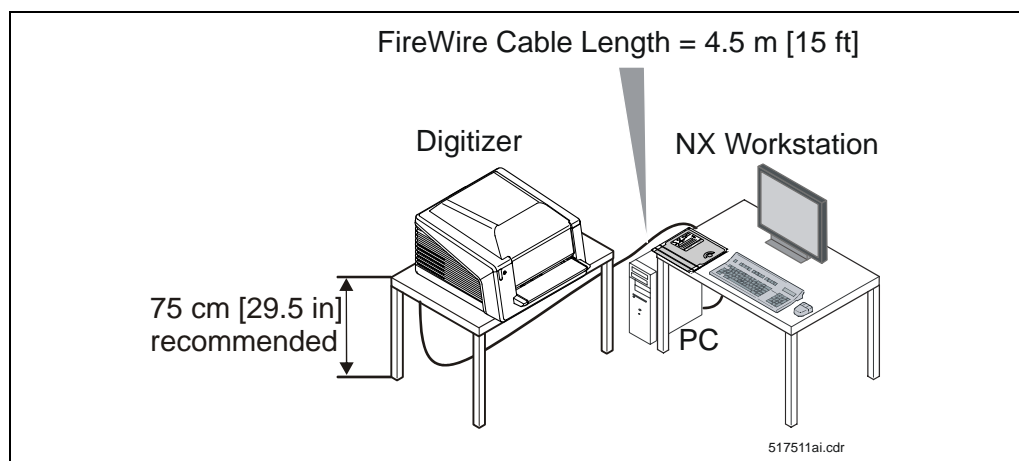
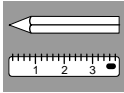


Figure 8

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



WARNING:

Using a FWI cable > 4.5 m may lead to unstable or no communication between digitizer and NX workstation: Retakes possible.

If the 4.5 m FWI cable (part of delivery) is not sufficient, use a “FWI to fiber optic converter” for extension (commercially available).



WARNING:

Using different power circles may lead to ground potential differences: In this case the leakage current via FireWire cable may exceed the limits as defined by IEC 60601:

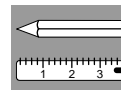
Confirm that both, NX workstation and digitizer are connected to the same ground, e.g. via multiple socket or UPS. If this is not possible use a “FWI to fiber optic converter” (commercially available) for the FireWire connection between NX workstation and digitizer.



WARNING:

Excessive vibrations during scanning may decrease image quality.

The structure and stability of the used table need to be suitable in relation with the size and weight of the system. The table may not be subject to excessive shock and vibrations from other sources.



6 Climatic and ambient Conditions

6.1 During Operation

Ambient temperature:

min.:	+15°C (59°F)
max.:	+30°C (86°F)
best:	+20°C (68°F) to 25° C (77°F)

Relative humidity:

min.:	15%
max.:	80%
best:	30% to 60%

(at 25°C (77°F) ambient temperature)

Radiation influences: If the digitizer is installed in the X-Ray room, it has to be protected against scatter radiation. See section 2.1 Accessories

Ambient Light: The digitizer may not be operated in direct sun light. No influence on image quality is guaranteed if operated in ambient light of max. 2500 Lux.

High Frequency Emission and Immunity For detailed information refer to the user manual CR30-X, Appendix B.

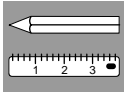
6.2 During Transport and Storage

Storage: According IEC 721-3-1 Storage: 1K2, 1M2

Transport According IEC 721-3-2 Transport: 2K2, 2M2

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



7

Electrical Connections**Installation guidelines**

Electrical installations have to be done in accordance with national regulations or statutory requirements, e.g.:

VDE (Germany) Electrical installations in the installation room must be in compliance with the regulations IEC 364, VDE 0100, and VDE 0107.

UL (US) Electrical installations in the installation room must be in compliance with the regulations: "National Electrical Code" (NEC) (NFPA70).

**WARNING:**

The digitizer uses high voltage. Electrical shock possible.

A ground fault interrupter (GFI) ($I_N = 30 \text{ mA}$) must be installed at a suitable point in the circuit (in compliance with VDE 664).

Mains connection in the installation room

VDE Double earthed pin outlet in compliance with DIN 49441 and with CEE 7 standard cover V II.


UL Earthed contact outlet for the NEMA 5-15 P plug

Mains cable
(part of delivery)

Euro-Version: H05VV - F3G - 3 x 2.5 mm² with earthed pin plug; 2,5 m

US/CAN-Version: SJT, 3 x AGW 18 with NEMA 5-15P plug; 2,5 m

Mains cable for the UPS
(only part of delivery if UPS is ordered)

UPS 120 V Version	UPS 230 V Version
Input: Fixed SJT, 3 x AGW 18 with NEMA 5-15 P plug; 1,8 m	Input: Use CR30-X mains cable
Output: Use CR30-X and NX workstation mains cable	Output: 2 x extension cable 1,8 m long
	

Fire Wire cable
(part of delivery)

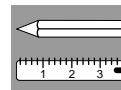
EEE 1394, 4,5 m with ferrite core

Mains switch

Upon digitizer installation, it must be ensured that either the mains connector or an all-pole circuit breaker for the installation on site is located close to the machine and easily accessible.

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



7.1 Electrical Connections at the Digitizer

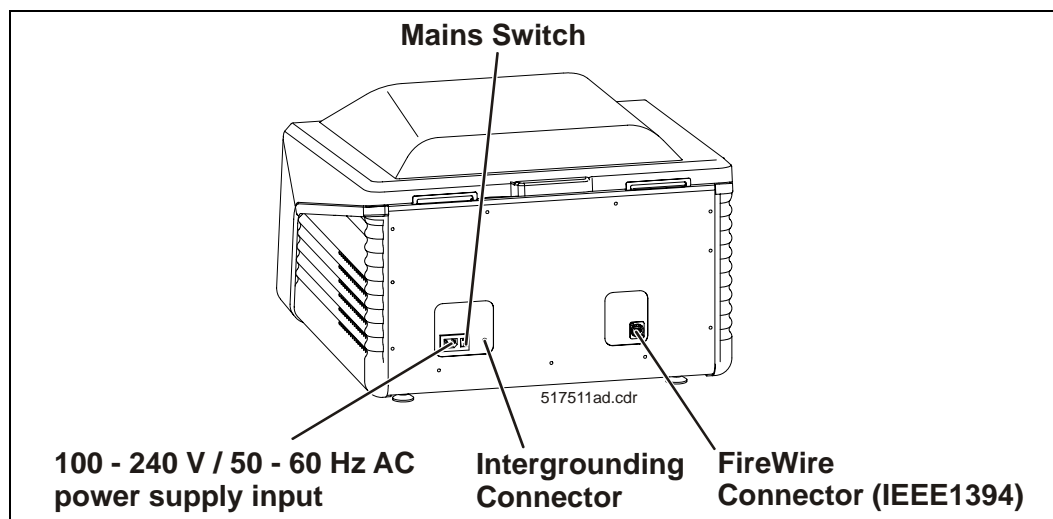


Figure 9

7.2 Electrical Connections at the optional UPS

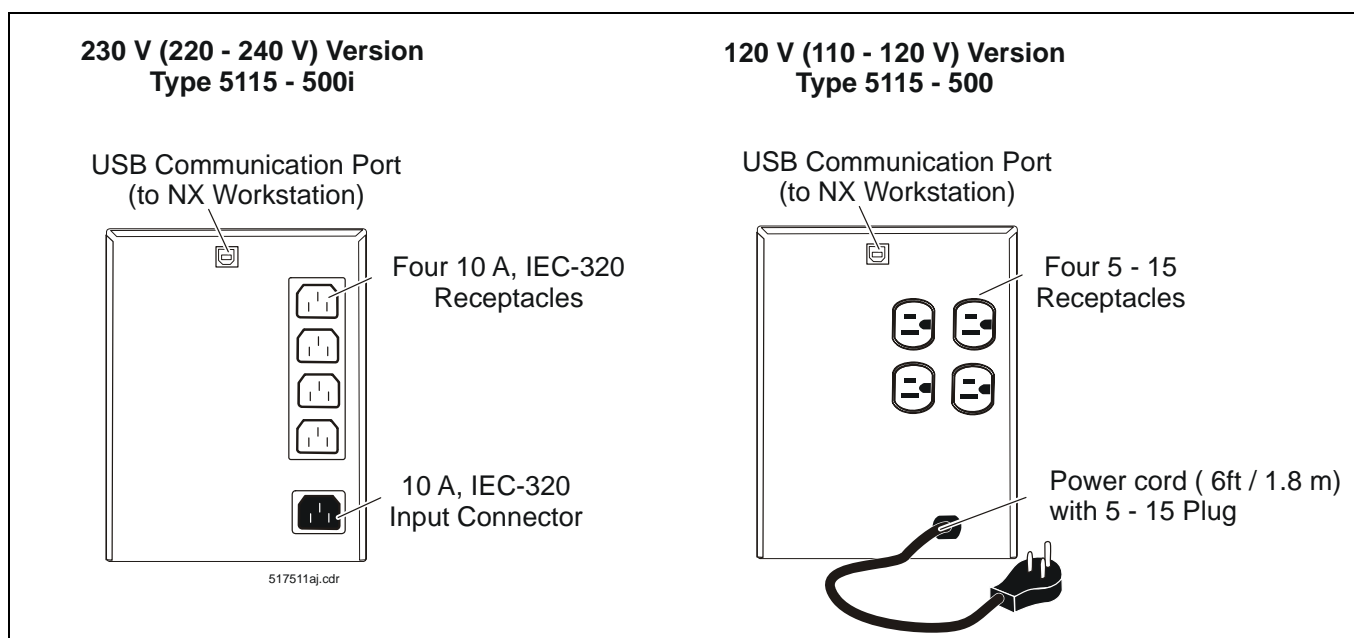
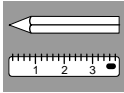


Figure 10

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



8 Specifications

8.1 Type Overview

Digitizer	Type
CR30-X	5175/100

8.2 Functional Data

Cassette return time [sec.]		< 60
Pixels per line x scan lines	15 x 30 cm	1420 x 2920
	18 x 24 cm	1720 x 2320
	24 x 30 cm	2320 x 2920
	35 x 43 cm	3480 x 4240
Bits per pixel / number of grey steps		12 / 4096
Scan Resolution [μ m]		100
Image Buffer		16 kB (2 lines)

8.3 Electrical DataDigitizer

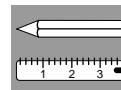
Rated voltage [\sim V]	100-240 AC (autosensing)
Frequency [Hz]	50/60
Power consumption [W]	120 standby 250 peak

8.4 Functional Dataoptional UPS

Rated voltage [\sim V] UPS Powerware 5115 - 500 (ABC Code: EGPSE)	<ul style="list-style-type: none"> • 120 = Default • 110 = user adjustable via rear panel DIP switches
Rated voltage [\sim V] UPS Powerware 5115 - 500i (ABC Code: EGPTG):	<ul style="list-style-type: none"> • 230 = Default • 220 or 240 = user adjustable via rear panel DIP switches
Frequency [Hz]	50/60 (autosensing)
Battery runtime [min.]	> 5
Output Power [W]	500
Dimensions (HxWxD) [mm/in]	192 x 150 x 270 / 7.6 x 5.9 x 10.6
Weight [kg/lb]	7.8 / 17.2
More info	refer to www.powerware.com

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



8.5 Climatic data

Heat emission [kJ/h]	432 standby 900 maximum
----------------------	----------------------------

8.6 Sound Emission Data

Noise level acc. ISO 7779	in standby: in operation:	5 dB(A) maximum 65 dB(A) maximum
------------------------------	------------------------------	-------------------------------------

8.7 Boot-up Time and Warm-up Time

Boot-up time after switch on or reset [sec.]	60
Warm Up Time "Cold Start"	<ul style="list-style-type: none"> Image quality within specification after boot-up time. Optimum image quality after 30 min.
Warm Up Time "Warm Start" (Digitizer was > 30 min. in operation and not switched off for > 3 min.)	Warm-up time = boot-up time

8.8 Interface Data

Interface to workstation	IEEE 1394 (FireWire)
--------------------------	----------------------

8.9 Service Data

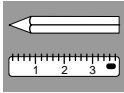
Infocounter	yes
Error diagnostics built in	yes
Remote / preventive service capable	yes

8.10 Functional Data Image Plates

Image plate type	MD40	
Image retention	Within 1 hour	Recommended readout time 70% of the stored energy is still present with no visible loss of information upon readout
	After 2 hours	
	After 24 hours	Image retention still exceeds 45%. Slightly reduced image quality

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.

**8.11 Dimensions and Weight****8.11.1 Dimensions, packed Machine**

Length / depth (cm / inch)	90 / 35.4
Width (cm / inch)	80 / 31.5
Height (cm / inch)	69 / 27.2

8.11.2 Dimensions, closed Machine

Length / depth (cm / inch)	78.6 / 30.9
Width (cm / inch)	69.3 / 27.3
Height (cm / inch)	49.7 / 19.6

8.11.3 Dimensions, opened Machine

Length / depth (cm / inch)	100.6 / 39.6
Width (cm / inch)	72 / 28
Height (cm / inch)	45 / 18

8.11.4 Weight

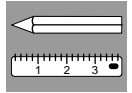
Digitizer alone (kg / lb)	98 / 216.1
Digitizer with packing incl. palette (kg / lb)	124 / 273.4

8.11.5 Dimensions Pallet

Length / depth (cm / inch)	90 / 35.4
Width (cm / inch)	80 / 31.5
Height (cm / inch)	15 / 6

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.



9 Safety Standards

The CR 30-X complies with:

- The general safety regulations:
 - IEC 60601-1:1988 + A1:1991 + A2:1995,
 - IEC 60601-1-1:2000 / EN 60601-1-1:2001,
 - IEC 60601-1-4:1999 / EN 60601-1-4:1996 + A1:1999,
 - IEC 60601-1-2: 2001 / EN 60601-1-2:2001,
 - UL 60601-1:2003,
 - CAN/CSA C22.2 No. 601.1
- The laser safety regulations:
 - IEC 60825-1:2001 / EN 60825-1:1994 + A1:2002 + A2:2001,
 - DHHS/FDA 21 CFR, Parts 1040.10 and 1040.11;
 - EN 540: 1993,
 - EN 980: 2003,
 - EN 1041: 1998,
 - ISO 18906: 2000,
 - EN ISO 13485: 2003;

See also section 10 "Compliance" in the appended chapter "Generic Safety Directions"

The CR30-X complies with the EN60601-1 standard for Information Technology. This means that, although it is absolutely safe, patients may not come in direct contact with the equipment. Therefore the operator console must be placed outside a radius of 1.5 m around the patient.

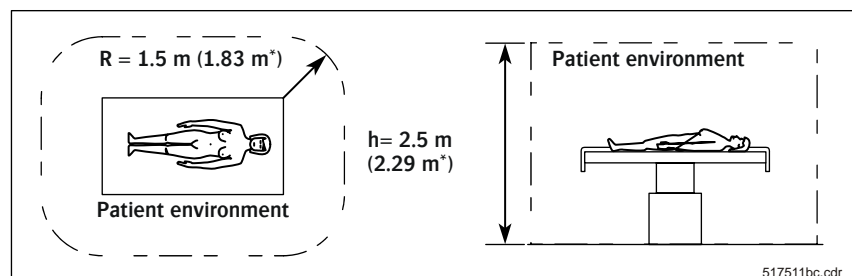


Figure 11

DOCUMENT CONTROL NOTE:

The controlled version of this document resides on MedNet. Any printed copy of this document is uncontrolled.

Name of Agfa FSE: _____ Checking date: _____

Client name: _____

Client address: _____

Contact person,
name and title: _____

Client phone number: _____ Extension _____

Type of systems: _____ Order /OGT number: _____

#	Task	OK
1	Installation site corresponds to the requirements, with sufficient room for operation and maintenance. Details see section 4	<input type="checkbox"/>
2	Digitizer System Integration prepared as recommended. Details see section 5	<input type="checkbox"/>
3	Ambient conditions are within the given limits. Details see section 6	<input type="checkbox"/>
4	Required electrical supply for the system is available. Details see section 7	<input type="checkbox"/>
5	System unpacked and positioned at the installation site	<input type="checkbox"/>
6	AGFATEK Link Service Host installed (if applicable)	<input type="checkbox"/>
	INSTALLATION SITE READY FOR INSTALLATION	<input type="checkbox"/>

Remarks: _____

Signature of FSE :

Copyright © 06/2006 HealthCare , DD+DIS172.06E
All rights reserved

Published by

Agfa-Gevaert HealthCare
Tegernseer Landstraße 161
D - 81539 München

Technical modifications reserved

AGFA and the Agfa-Rhombus are trademarks of Agfa-Gevaert