

SHIMADZU

PRODUCT DATA

Digital Angiography System

Trinias

 C12/F12 unity edition



Photo: Ceiling-mounted C-arm (C12 unity edition) and floor-mounted C-arm (F12 unity edition)

GENERAL

Trinias is a digital X-ray Cardiac & Vascular system that automatically acquires digital images using an FPD (flat panel detector), applies digital processing, and displays the images for review.

OVERVIEW

Trinias C12 / F12 unity edition are cross over angiography systems (single-plane) equipped with a 12 × 12" FPD, which enables full-body coverage
 "unity" means "unlimited intelligent technology".
 The Trinias C12 / F12 unity edition comprise three concepts for supporting high-quality interventions.

- ✓ Personalize your experience for ultimate flexibility
- ✓ Limitless Potential for Efficient Workflow
- ✓ Intelligent design for intelligent care

SYSTEM CONFIGURATION

- 1 **C-Arms**
 - 1.1 **Ceiling-Mounted C-Arm (MH-200S)**
 - 1.2 **Floor-Mounted C-Arm (MH-300)**
- 2 **X-Ray High-Voltage Generator (D150GC-40)**
- 3 **X-Ray Tube (LX-2011)**
- 4 **Digital Radiography System (DAR-9500f)**
- 5 **Patient Table**
 - 5.1 **Catheterization Table (KS-70)**
 - 5.2 **SMART Table (KS-100)**
- 6 **Monitors**
- 7 **Monitor Support (MTA-40C series)**
- 8 **3D Applications (optional)**
 - 8.1 **SCORE 3D Applications**
 - 8.2 **SCORE 3D Workstation**

SPECIFICATIONS

- 1 **C-Arms**
 - 1.1 **Ceiling-Mounted C-Arm (MH-200S)**

Position

- Positions: 6
 (CW 45° to CCW 180°, at 45° intervals)
- Left position: CCW 0°
 - Head position: CCW 90°
 - Right position: CCW 180°
- Switching speed: 90°/9 sec

C-arm rotation range

- Left position
- Rotation of C-arm around body axis:
LAO 60°/RAO 90°
(Max. 15°/sec, variable)
 - Rotation of C-arm in direction of body axis:
CRA 50°/CAU 45°
(Max. 15°/sec, variable)
- Head position
- Rotation of C-arm around body axis:
LAO 120°/RAO 120°
(Max. 25°/sec, variable)
 - Rotation of C-arm in direction of body axis:
CRA 50°/CAU 45°
(Max. 15°/sec, variable)
- Right position
- Rotation of C-arm around body axis:
LAO 90°/RAO 60°
(Max. 15°/sec, variable)

- Rotation of C-arm in direction of body axis:
CRA 50°/CAU 45°
(Max. 15°/sec, variable)

Longitudinal movement range

2875 mm
 (Max. 15 cm/sec, variable)

Lateral movement range

Left position: 150mm (left) to 450 mm (right)
 (Max. 100 mm/sec, variable)

Head position: ±800 mm
 (Max. 100 mm/sec, variable)

Right position: 450 mm (left) to 150 mm (right)
 (Max. 100 mm/sec, variable)

Fluoroscopy/radiography range

Longitudinal: approx. 1900 mm*

Lateral: approx. 2100 mm*

*Stated length (mm) describes total X-ray imaging range added up by C-arm movement, table top movement, and FPD field of view.

C-arm memory (DirectMemory)

108 patterns (angle, SID, bed height)

Radius within C-arm

900 mm

Height of center of rotation (isocenter height)

1070 mm

Distance between focus and center of rotation

730 mm

SID

900 to 1150 mm (250 mm)
 (Max. 80 mm/sec)

FPD back/forward movement

Button on FPD
 C-arm controller

Grid

Ratio: 13 : 1
 Density: 70 lines/cm
 Inter spacer: Fiber
 Removable

Collimator (F-50)

Irradiation field: Octagonal (H, V, and C leaves)
 Multi Beam-Hardening filter (MBH filter)
 4 types (automatically inserted)

- F1: 2 mm Al + 0.1 mm Cu
- F2: 1 mm Al + 10 µm Au
- F3: 1.5 mm Al + 0.3 mm Cu
- F4: 1.5 mm Al + 0.6 mm Cu

Compensation filters:
 2 filters (left and right)

Precession mode

Acquisition mode: DA or SCORE RSM
 Moving range: Fixed at 30° precession angle
 Moving speed: 6 sec/revolution
 Moving duration: Max. 3 revolutions

Pendulum mode

Acquisition mode: DA or SCORE RSM
Moving range: Fixed at LAO 15° to RAO 15° swing
Moving speed: 6 sec/round
Moving duration: Max. 3 rounds
Applicable tilting: CRA30° to CAU30°

Rotation mode

Acquisition mode: DA or SCORE RSM
Rotation of C-arm around body axis
• Left position: LAO 60° ⇔ RAO 90°
(Max. 15°/sec)
• Home position: LAO 120° ⇔ RAO 120°
(Max. 40°/sec)
• Right position: LAO 90° ⇔ RAO 60°
(Max. 15°/sec)
Applicable tilting: CRA30° to CAU30°
Rotation of C-arm in direction of body axis
• All position: CRA 45° ← CAU 45°
(Max. 15°/sec)
Applicable tilting: RAO30° to LAO30°

Rotation DSA

Rotation of C-arm around body axis
• Left position: LAO 55° ⇔ RAO 85°
(Max. 15°/sec)
• Home position: LAO 100° ⇔ RAO 100°
(Max. 40°/sec)
• Right position: LAO 85° ⇔ RAO 55°
(Max. 15°/sec)
Applicable tilting: CRA30° to CAU30°
Rotation of C-arm in direction of body axis
• All position: CRA 40° ← CAU 40°
(Max. 15°/sec)
Applicable tilting: RAO30° to LAO30°

SCORE 3D (Optional)

Rotation of C-arm around body axis
RAO 105° → LAO 95°
(Max. 60°/sec)

SCORE CT /CT-HR (Optional)

Rotation of C-arm around body axis
RAO 120° → LAO 95°
(20°/sec or 10°/sec)

C-arm controller

CyberConsole (lever type)*
CyberGrip (grip type)*
Local console
Remote console (optional)
* Select one

Safety mechanism

Collision sensor (FPD, collimator)
Software control
Automatic leave function (FPD)

Parking

Dedicated parking button

1.2 Floor-Mounted C-Arm (MH-300)

Position change

Positions: 3
• Home position: Insert from head end of patient
• Multi-position: Insert at 45° angle relative to patient
• Peripheral position: Insert at 40° angle relative to patient
Switching speed: Min. 10 seconds
(Home ⇔ Multi; Multi ⇔ Peripheral)

C-arm rotation range

Head position
• Rotation of C-arm around body axis:
LAO 120°/RAO 120°
(Max. 25°/sec, variable)
• Rotation of C-arm in direction of body axis:
CRA 50°/CAU 45°
(Max. 15°/sec, variable)
Multi position
• Rotation of C-arm around body axis:
LAO 90°/RAO 90°
(Max. 15°/sec, variable)
• Rotation of C-arm in direction of body axis:
CRA 50°/CAU 45°
(Max. 15°/sec, variable)
Peripheral position
• Rotation of C-arm around body axis:
LAO 15° / RAO 15°
(Max. 15°/sec, variable)
• Rotation of C-arm in direction of body axis:
CRA 0°/CAU 15°
(Max. 15°/sec, variable)

Longitudinal movement range

Home position: 300 mm
Multi-position: 300 mm
Peripheral position: 300 mm
Speed: Max. 100 mm/sec, variable

Lateral movement range

Home position: ±450 mm
Multi-position: 200 mm (left) to 400 mm (right)
Peripheral position: ±150 mm
Speed: Max. 100 mm/sec, variable

Fluoroscopy/radiography range

Longitudinal: approx. 1900 mm*
Lateral: approx. 1400 mm*
*Stated length (mm) describes total X-ray imaging range added up by C-arm movement, table top movement, and FPD field of view.

C-arm memory (DirectMemory)

72 patterns (angle, SID, bed height)

Radius within C-arm

900 mm

Height of center of rotation (isocenter height)

1070 mm (excluding base plate)

Distance between focus and center of rotation

730 mm

SID

900 to 1150 mm (250 mm)
(Max. 80 mm/sec)

FPD back/forward movement

Button on FPD
C-arm controller

Grid

Ratio: 13 : 1
Density: 70 lines/cm
Inter spacer: Fiber
Removable

Collimator (F-50)

Irradiation field: Octagonal (H, V, and C leaves)
Multi Beam-Hardening filter (MBH filter)
4 types (automatically inserted)
• F1: 2 mm Al + 0.1 mm Cu
• F2: 1 mm Al + 10 µm Au
• F3: 1.5 mm Al + 0.3 mm Cu
• F4: 1.5 mm Al + 0.6 mm Cu

Compensation filters:
2 filters (left and right)

Precession mode

Acquisition mode: DA or SCORE RSM
Moving range: Fixed at 30° precession angle
Moving speed: 6 sec/revolution
Moving duration: Max. 3 revolutions

Pendulum mode

Acquisition mode: DA or SCORE RSM
Moving range: Fixed at LAO 15° to RAO 15° swing
Moving speed: 6 sec/round
Moving duration: Max. 3 rounds
Applicable tilting: CRA30° to CAU30°

Rotation mode

Acquisition mode: DA or SCORE RSM
Rotation of C-arm around body axis:
LAO 120° ↔ RAO 120°
(Max. 40°/sec)
Applicable tilting: CRA30° to CAU30°

Rotation of C-arm in direction of body axis:
CRA 45° ← CAU 45°
(Max. 15°/sec)
Applicable tilting: RAO30° to LAO30°

Rotation DSA

Rotation of C-arm around body axis:
LAO 100° ↔ RAO 100°
(Max. 40°/sec)
Applicable tilting: CRA30° to CAU30°
Rotation of C-arm in direction of body axis:
CRA 40° ← CAU 40°
(Max. 15°/sec)
Applicable tilting: RAO30° to LAO30°

SCORE 3D (Optional)

Rotation of C-arm around body axis
LAO 105° → RAO 95°
(Max. 60°/sec)

SCORE CT /CT-HR (Optional)

Rotation of C-arm around body axis
LAO 120° → RAO 95°
(Max. 20°/sec, 10°/sec)

C-arm controller

CyberConsole (lever type)*
CyberGrip (grip type)*
Local console
Remote console (optional)
* Select one.

Safety mechanism

Collision sensor
(FPD, collimator, and C-arm base)
Software control
Automatic leave function (FPD)

Parking

Dedicated parking button

2 X-Ray High-Voltage Generator (D150GC-40)

Control method

50-kHz inverter

Rated output

100 kW (100 kV, 1000 mA)
(IEC 60601-2-7, 1998)

Radiography setting range

Tube voltage: 40 to 150 kV
Tube current: 10 to 1250 mA
mAs: 0.5 to 800 mAs
Time: 0.001 to 10 sec

Fluoroscopy setting range

Tube voltage: 50 to 125 kV
Tube current: 0.3 to 30 mA

Short-time rating

150 kV – 630 mA
125 kV – 800 mA
100 kV – 1000 mA
80 kV – 1250 mA

Long-time rating (Fluoroscopic rating)

3000W
125 kV – 24 mA
100 kV – 30 mA

Setting method

Color touch panel LCD

Cumulative fluoroscopy time

Displayed on color touch panel LCD

Self-diagnostic function

Displayed on color touch panel LCD

Backup filament function

Switches automatically

Grid switch control

Available

3 X-Ray Tube (LX-2011)

Tube voltage

40 to 125 kV (during fluoroscopy/radiography)

Nominal focal spot size

Small focus: 0.6mm
Large focus: 1.0 mm

Input power (0.1 s), Nominal anode input power (0.1 s)

Small focus: 48 kW
Large focus: 100 kW

Nominal radiographic anode input power

Small focus: 46 kW
Large focus: 96 kW

Max. tube current

Small focus: 460 mA
Large focus: 850 mA

Thermal characteristics

Anode heat capacity:
3000 kHU
Anode heat capacity(eq):
3800 kHU eff
Anode cooling rate:
5500 W (7700 HU/s = 462 kHU/min)
Tube unit heat capacity:
2890 kHU

Max. continuous X-ray tube input

60-min. average: 2200 W (3100 HU/s)
Within 30 min.: 2500 W (3525 HU/s)
Within 20 min.: 2800 W (3950 HU/s)

Anode target

Material: Rhenium-tungsten
Diameter: 140 mm
Angle: 11°
rpm: Min. 9000 rpm

Anode bearing

Liquid metal bearing

Inherent filtration

1.5 mm Al equivalent (75 kV tube voltage)

Cooling system

Hybrid-Cooling (Primary : Oil, Secondary : Water)

Weight

Main unit: Approx. 39 kg
Heat exchanger: Approx. 30 kg

4 Digital Radiography System (DAR-9500f)

FPD

X-ray conversion: Indirect conversion
Scintillator: CsI
Total pixels: 1536 × 1536
Effective pixels: 1516 × 1516
Effective FOVs: 5
12 in. (294 × 294 mm)

10 in. (248 × 248 mm)
8 in. (199 × 199 mm)
6 in. (149 × 149 mm)
4.5 in. (112 × 112 mm)

Pixel pitch: 194 μm
Spatial frequency: 2.6 lp/mm
DQE: 77 %
Acquisition speed: Max. 30 fps
A/D range: 16 bits
Cooling system: Liquid cooling
Calibration: Automatic
FPD dimensions

- Min. dimensions: 337 mm × 348 mm
- Max. dimensions: 400 mm × 410 mm

*The minimum cover size on the X-ray incident side.

Fluoroscopy functions

Matrix: 1024 × 1024, 12 bits
Pulse rate: 30, 15, 10, 7.5, 6, 5, 3.75, 3, 2, 1 pps
Road map: SCORE MAP (DSA-MAP, FluoroMAP, BlankMAP, TraceMAP, Sketch function)
Maximum number of programs: 144
Zoom function: Max. 2.5x (for live & ref image)
Virtual collimation: Yes
Fluoroscopy recording:
Max. 1023 frames for fluoroscopy images and road map images (loop and direct recording)

Radiography functions

Modes: DA, DSA, stage DSA, Rotational DA/DSA
SCORE RSM, One Shot,
SCORE 3D-DA*, SCORE 3D-DSA*,
SCORE CT*, SCORE CT-HR*

*Optional

Matrix: 1024 × 1024,
max16 bits
(only available with SCORE CT/CT-HR)

Imaging rate

- DA/Rotational DA: 30, 15, 10, 7.5, 6, 5, 3.75, 3, 2, 1 fps
- DSA/Rotational DSA: 15, 7.5, 5, 3.75, 3, 1 fps
- Stage DSA: 6, 4, 3, 2, 1 fps (max. 5 stages)
- SCORE RSM: 15, 7.5, 5, 3.75, 3, 1 fps
- SCORE 3D-DA /SCORE 3D-DSA: 30fps
- SCORE CT /SCORE CT-HR: 30fps

Maximum number of programs: 144

Radiography conditions:

Set automatically based on fluoroscopy conditions.

Digital processing unit

Language: English
Image processing: SCORE PRO Advance
(multi-frequency processing, dynamic range compression, pattern recognition, motion tracking noise reduction and image enhancement with object detecting)
Digital processing:
Noise reduction, automatic brightness adjustment, edge enhancement, negative/positive inversion, gamma correction, zoom (max. 2.5x) and panning, Flex-APS, pixel shift, remask, Peak hold, Auto cropping, Guidance, comment and annotation input,

Application:

- SCORE RSM
- SCORE Chase (optional)
- + KS-70
 - Long-view DA, RSM (manual), Virtual FOV
- + KS-100
 - Long-view DA, RSM (manual, motor-driven)
 - Long-view DSA (motor-driven), Virtual FOV
 - Chase MAP (roadmap without additional injection)
- SCORE StentView (optional) (Auto, 1-ROI, 2-ROI)
- SCORE StentShot (optional)(Auto, 1-ROI, 2-ROI)

Biological waveform input:

Max. 2 channels

Image analysis: QCA, LVA, QVA and distance measurement

Pixel size calibration

- Automatic: Automatic calculation from geometric information (assuming target object is in isocenter)
- Manual: Calibration object or grid

Angle synchronization:

Image ↔ C-arm bi-directional

Bed side image controller (SMART Touch)

- Device type : Joystick and touch panel
- Functions: Dynamic image play/stop, image selection, fluoroscopy/radiography conditions selection, comment selection, reference image registration, fluoroscopy recording, stopwatch, target monitor switching, split display and focus switching, reference mode switching, cine-area-zoom function, Angle synchronization, multi-display, photo file storage, road map, SCORE StentView(Optional), SCORE Chase(Optional)

Parallel processing

Always available (including during fluoroscopy and radiography) (limited to data for the same patient during examinations)

Dose management

- Dose area product display (cumulative)
- Air kerma rate and cumulative air kerma (calculated value at interventional reference point)
- Dose report function (DICOM RDSR / MPPS)

Image storage capacity:

100,000 frames
(1024 × 1024, 12 bits)

Media archive : CD-R, DVD-R (DICOM)
(automatic writing after examination is available)
(simple image viewer is included with image data)

Image transmission: Background transfer is possible

DICOM: Image storage,
Storage Commitment (optional),
QR (optional), MPPS (optional),
MWM, Print, RDSR storage (optional)
media archive

Startup time: Approx. 2 minutes

Backup function: HDD mirroring

Computer configuration

- Units: 2
- OS: Windows 10, 64 bits
- CPU: Xeon E3-1275v5 (3.6GHz/4-core) or better
- RAM: 8 GB or better
- Storage: Total 2.5 TB or better

5 Patient Table

5.1 Catheterization Table (KS-70)

Longitudinal movement

1350 mm

Lateral movement

±150 mm

Vertical movement

790 to 1150 mm (360 mm)

Swing motion

−90° to 180° (270°)

Load capacity

227 kg + 100 kg (for CPR)

Table top material

CFRP (Carbon fiber reinforced plastic)

Inherent filtration

0.8 mm Al equivalent
(800 mm from end of table)

Table dimensions

450 mm × 2880 mm

Table controller

Table console

Accessory

- Low rebound mattress
- Arm rest (type A) with a mattress for arm rest]

5.2 SMART Table (KS-100)

Longitudinal movement

1350 mm (Manual / Motorized)

Lateral movement

±200 mm (Manual / Motorized)

Slide Speed

- Normal use 70mm/s (both longitudinal and lateral)
- SCORE Chase Max.150mm/s (only longitudinal)

Tilt Angle (speed)

+17° / -20° (2.5°/s)

Rolling Angle (speed)

+16° / -16° (3.0°/s)

Vertical movement

790 to 1070 mm (280 mm)

Swing motion

−120° to 180° (300°)

Table top material

CFRP (Carbon fiber reinforced plastic)

Load capacity

250 kg + 100 kg (for CPR)

Inherent filtration

1.2 mm Al equivalent
(800 mm from end of table)

Table dimensions

450 mm × 2990 mm

Peripheral Chase Mode

Variable speed chase control (option)

Table controller

Tilt table console

Accessory

- Low rebound mattress
- Arm rest (type A) with a mattress for arm rest

6 Monitors

Image display monitor

- Type: 19" LCD
- Resolution: 1280 × 1024
- Brightness: Max. 700 cd/m²
- Signal interface: DVI-D
- Dimensions: W422 mm × H348 mm × D95 mm

Information display (examination room)

- Type: 15" color LCD

System display (operator room)

- Type: 15" color touch panel LCD

Large image display in examination room (optional)

- Monitor
 - Type: 58" color LCD
 - Resolution: 3840 × 2160
 - Brightness: Max. 700 cd/m²
 - Signal interface: DVI-D × 2
 - Dimension: 1319(W) × 776(H) × 146(D) (mm)
 - Protection glass for LCD surface: Standard

Controller (Select one)

- SMART Display 5808 :
 - 10ch input, 8ch display at once
- SMART Display 5826 :
 - 26ch input, 26ch display at once

Back up monitor

- 19" display monitor
- Back up monitor kit

7 Monitor Support (MTA-40C series)

Number of monitors mountable on monitor support

- 19" monitor: 4, 6, or 8 monitors
- SMART Display: one monitor

Longitudinal movement range

Min. 3000 mm

Lateral movement range

Min. 2300 mm

Vertical movement range(given 2845 mm ceiling height)

- MTA-40C-4, 6: 1560mm to 1890mm
- MTA-40C-8: 1490mm to 1820mm
- MTA-40C-56: 1490mm to 1820mm

Rotational angle

320°

8 3D Application (optional)

8.1 SCORE 3D Application (optional)

3D Angiography (SCORE 3D)

Acquisition

- Acquisition mode: SCORE 3D-DA, SCORE 3D-DSA
- C12 package radiography range:
 - RAO 105° to LAO 95° (200°)
- F12 package radiography range:
 - LAO 105° to RAO 95° (200°)
- Rotation speed: 60 deg/s, 40 deg/s
- Acquisition matrix: 1024 × 1024, 12 bits
- Acquisition rate: 30 fps
- Acquisition frames: Approx. 100 frames
(acquired with C-arm at 60 deg/s)
- FPD Sensor FOV: 12", 10" or 8"

Image reconstruction

- Reconstruction matrix:
 - 512³, 256³
- Display matrix:
 - 512³, 256³
- FOV:
 - φ180 mm × 180 mm
(FPD Sensor FOV : 12")
- Reconstruction processing time:
 - Min. 15 seconds
(after data acquisition)

C-Arm CT (SCORE CT)

Acquisition

- Acquisition mode: SCORE CT (incl. multi-phase mode)
- C12 package radiography range:
 - RAO 120° to LAO 95° (215°)
 - LAO 105° to RAO 110°(215°)
(2nd phase acquisition)
- F12 package radiography range:
 - LAO 120° to RAO 95° (215°)
 - RAO 105° to LAO 110° (215°)
(2nd phase acquisition)
- Rotation speed: 20 deg/s, 10 deg/s
(At multi-phase mode, only 20deg/s is available)
(At multi-phase mode, 20sec interval is needed)
- Acquisition matrix: 1024 × 1024, 16 bits
- Acquisition rate: 30 fps
- Acquisition frames:
 - Approx. 630 frames (with 10 deg/s)
 - Approx. 315 frames (with 20 deg/s)
- FPD Sensor FOV: 12"

Image reconstruction

- Reconstruction matrix:
 - 512³, 256³
- Display matrix:
 - 512³, 256³
- FOV:
 - φ180 mm × 180 mm
- Reconstruction processing time:
 - Min. 30 seconds (after acquisition)

High resolution C-Arm CT (SCORE CT-HR)

Acquisition

- Acquisition mode: SCORE CT-HR
- C12 package radiography range:
 - RAO 120° to LAO 95° (215°)
- F12 package radiography range:
 - LAO 120° to LAO 95° (215°)

- Rotation speed: 10 deg/s
- Acquisition matrix: 1024 × 1024, 16 bits
- Acquisition rate: 30 fps
- Acquisition frames: Approx. 630 frames
- FPD Sensor FOV: 8"

Image reconstruction

- Reconstruction matrix: 512³, 256³
- Display matrix: 512³, 256³
- FOV: φ60 mm × 60 mm
- Reconstruction processing time: Min. 30 seconds (after acquisition)

3D road-map (SCORE Navi)

Applicable fusion image with fluoroscopy
VR, MIP, MPR and see-through

Available parameters to synchronize
C-arm Angle, SID and FOV,
Table position & height

Available parameter to manual adjustment
Zoom and panning, image rotation.

Multi-modality integration (SCORE Navi+Plus)

Applicable modality CT, MRI
Registration method
with fluoroscopic image
(single angle or dual angle)

Functions
Segmentation, Virtual stent,
Contour enhancement,
Extender & remover,
Wide FOV view mode

8-2 SCORE 3D Workstation

Functions

Display modes:
VR, MIP, MPR, VE, see-through
and Multi data fusion

Measurement functions:
Distance, angle, volume, and
vascular analysis

Angle synchronization:
3D (Normal / Opposite) ⇒ C-arm
C-arm / DSA ⇒ 3D

Media archive (DICOM):
DVD-R

DICOM:
image Storage, Print, QR

Workstation Configuration

Computer

- OS: Windows 10, 64 bits
- CPU: Xeon E5-2640v3 (2.6GHz 8-core)
or better
- RAM: 16 GB or better
- Storage: Total 1.5TB or better
- Optical drive: DVD-R

Monitor

- Type: 21" color LCD
- Resolution: 1600 × 1200 or higher
- Brightness: Max. 300 cd/m²
- Signal interface: DVI-I × 1, D-sub × 1

Optional Items

1 C-Arm

- Additional CyberConsole*
 - Additional CyberGrip*
 - Collimator console
 - Remote console
 - Console cart
 - Monitor cart
 - Cable stand (for MH-300)
- * Select one.

2 Digital Radiography System (DAR-9500f)

- SCORE Chase: Manual
- SCORE StentView
- Additional SMART Touch
- Review station

3 Patient Table

- Additional Table console for KS-70*
 - Additional Tilt Table console for KS-100*
 - Additional Grip switch*
 - Slide rail
 - Hand grips
 - Sub rail
 - Arm rest (type B) for TRA (left, right)
 - Low rebound mattress
 - Wireless Footswitch
- * Select one

4 Monitor

- Large display monitor:
SMART Display 5808/5827
- MAP / LIVE monitor : Examination room / Control room

5 SCORE 3D Workstation

- Additional mouse kit for examination room
- Additional display for examination room

Inherent filtration

Beam Hardening Filter

F1: 2 mm Al +0.1 mm Cu .	5.1mmAl eq. (75kV)
F2: 1 mm Al + 10 μm Au .	2.6 mmAl eq. (75kV)
F3: 1.5 mm Al + 0.3 mm Cu.	10.3mmAl eq. (75kV)
F4: 1.5 mm Al + 0.6 mm Cu	15.7mmAl eq. (75kV)
X-ray tube	1.5 mmAl eq. (75kV)
DAP meter	0.2 mmAl eq. (75kV)

Power Requirements

Main power

3-phase 380-480 V (50/60 Hz), 75 kVA min.

Digital

Single-phase 200-240 V (50/60 Hz), 8 kVA min.
(12 kVA min. with option)

Installation Environment

1 Temperature and Humidity

Examination room : 10-35 °C, 15-75 % (KS-70)
10-35°C, 30-75% (KS-100)

Control room : 10-35 °C, 15-75 %

Mechanical room : 10-30 °C, 15-75 %

2 Heat Generation

Examination room:
1000W while powered ON and 0 W when OFF

Control room:
300W while powered ON and 23W when OFF

Machine room:
6199W while powered ON and 814W when OFF

1 Trinias C12 unity edition

Examination room

Recommended space: 6000 mm × 7000 mm
Minimum space: 5000 mm × 6300 mm
Height: 2695mm to 2845mm
(in increments of 50mm)

Machine room

Recommended space: 1200mm × 4000 mm or more
Height: 2000mm or more

2 Trinias F12 unity edition

Examination room

Recommended space: 5500 mm × 6500 mm
Minimum space: 4500 mm × 5700 mm
Height: 2600 mm to 2850 mm

Machine room

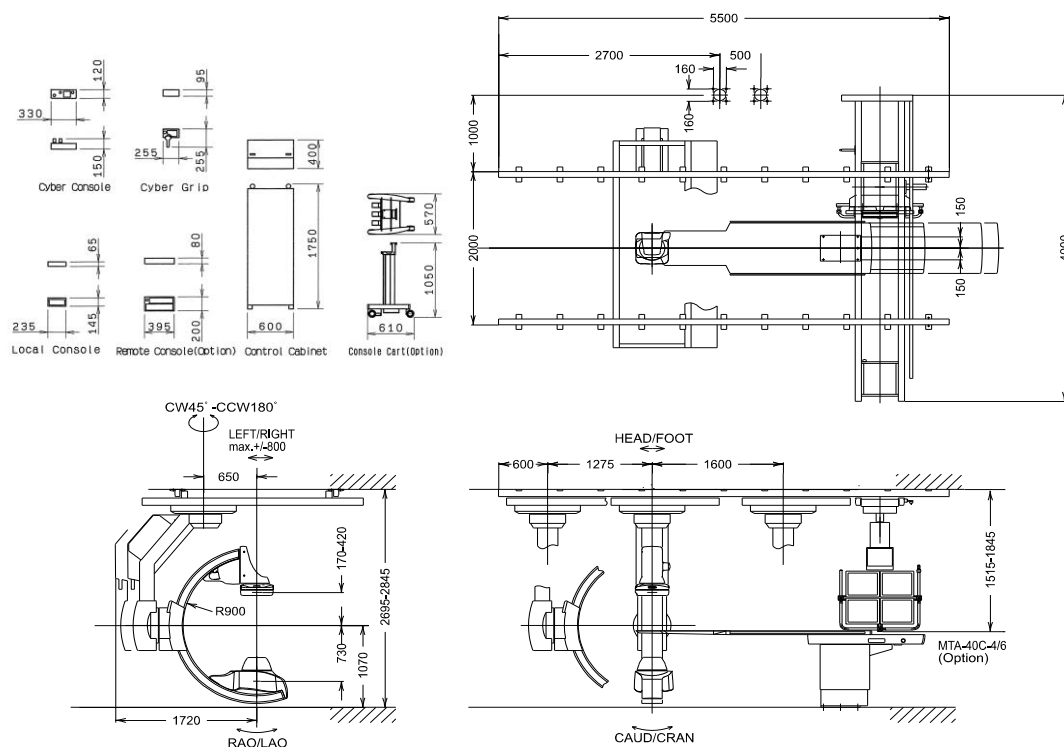
Recommended space: 1200 mm × 4000 mm or more
Height: 2000mm or more

Installation Space

DEMENTIONS

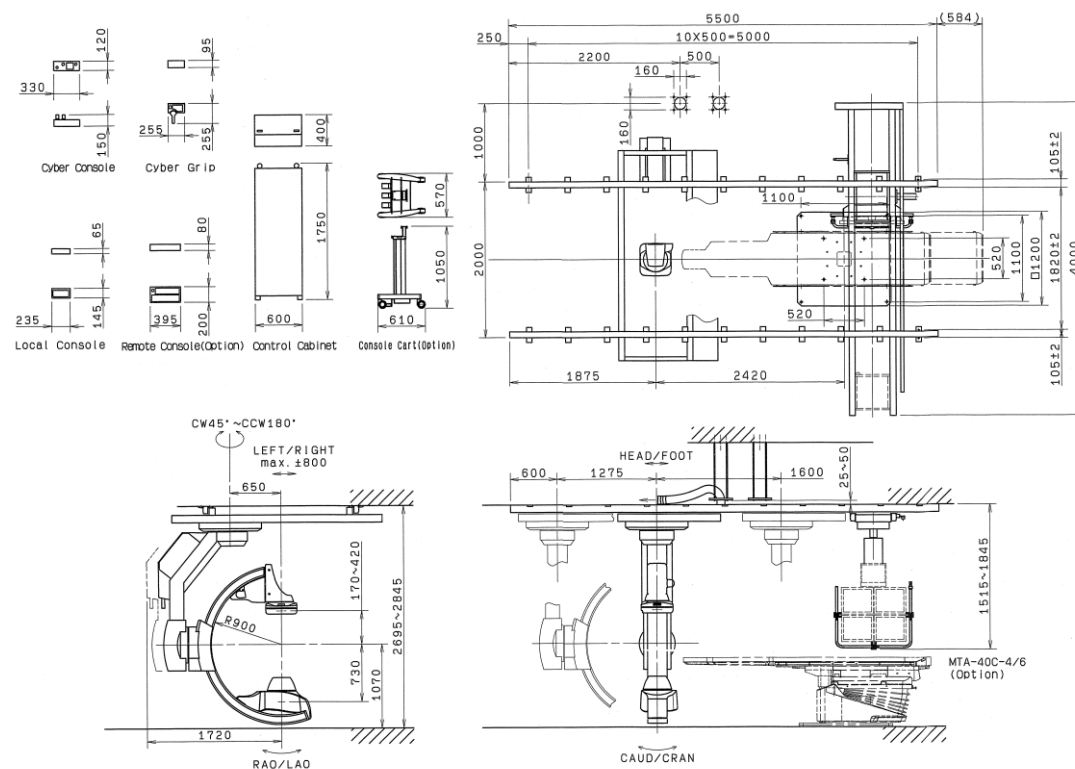
Ceiling-mounted C-arm (C12 unity edition : KS-70 type)

Unit : mm



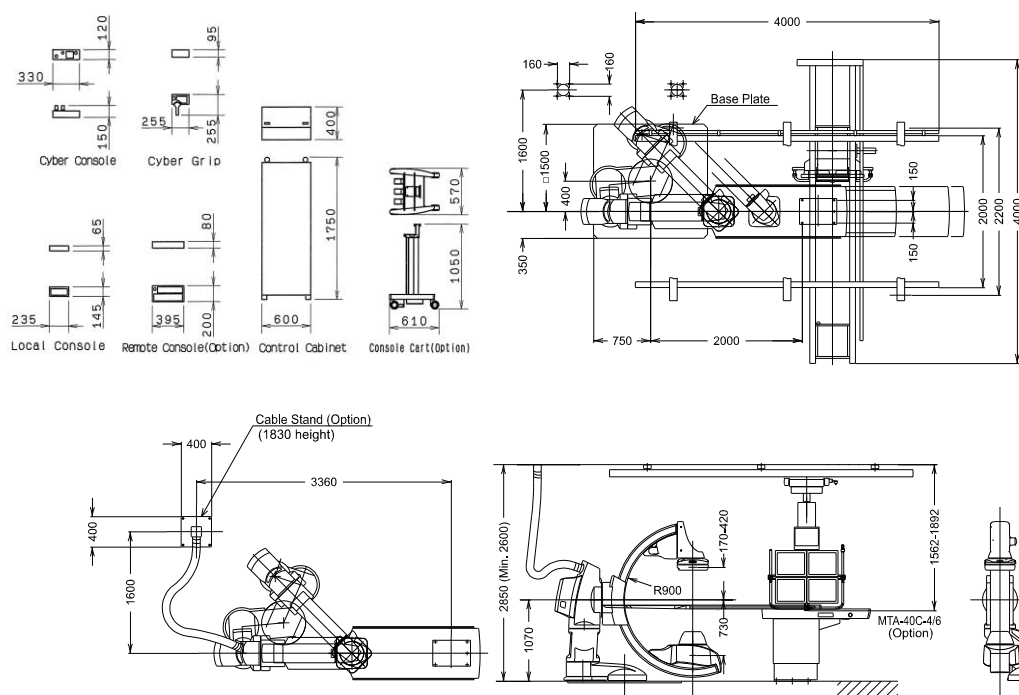
Ceiling-mounted C-arm (C12 unity edition : KS-100 type)

Unit : mm



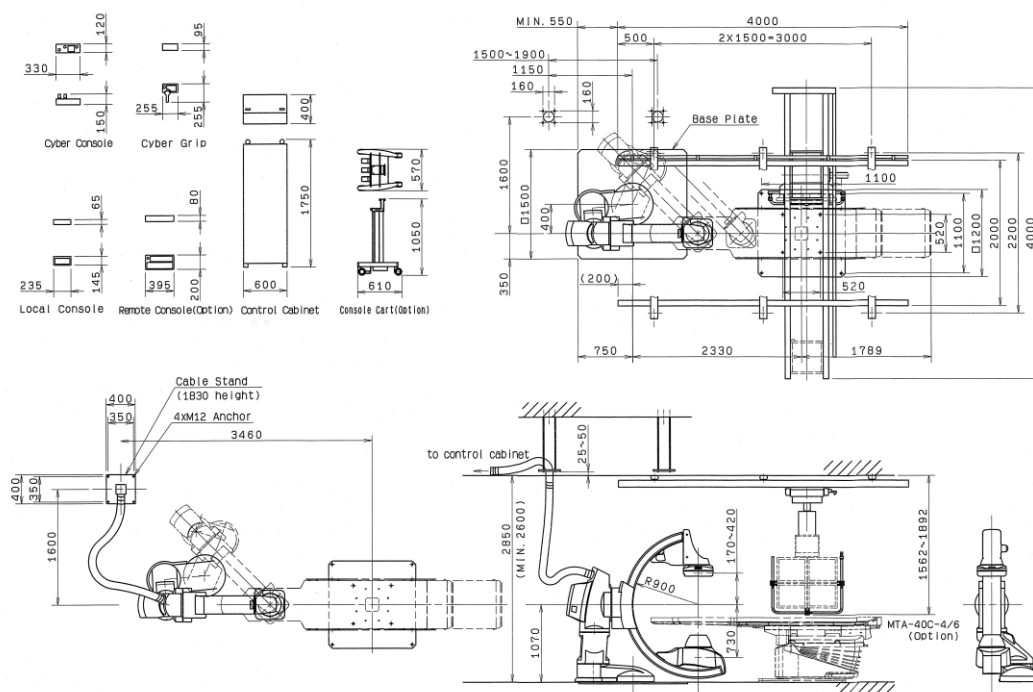
Floor-mounted C-arm (F12 unity edition : KS-70 type)

Unit : mm



Floor-mounted C-arm (F12 unity edition : KS-100 type)

Unit : mm



LABEL Description: Digital Angiography System Trinias

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Shimadzu Corporation Medical Systems Division has been certified by TÜV Rheinland as a manufacturer of medical systems in compliance with ISO9001:2015 Quality Management Systems and ISO13485:2016 Medical Devices Quality Management Systems.

Remarks:

- Every value in this document is a standard value, and it may vary a little from the actual at each site.
- The appearances and specifications are subject to change for reasons of improvement without notice.
- Items and components in the photos may include optional items. Please confirm with your sales representative for details.
Certain configurations may not be available pending regulatory clearance.
- Contact your sales representative for information on specific configurations.
- Before operating this system, you should first thoroughly review the Instruction Manual.
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