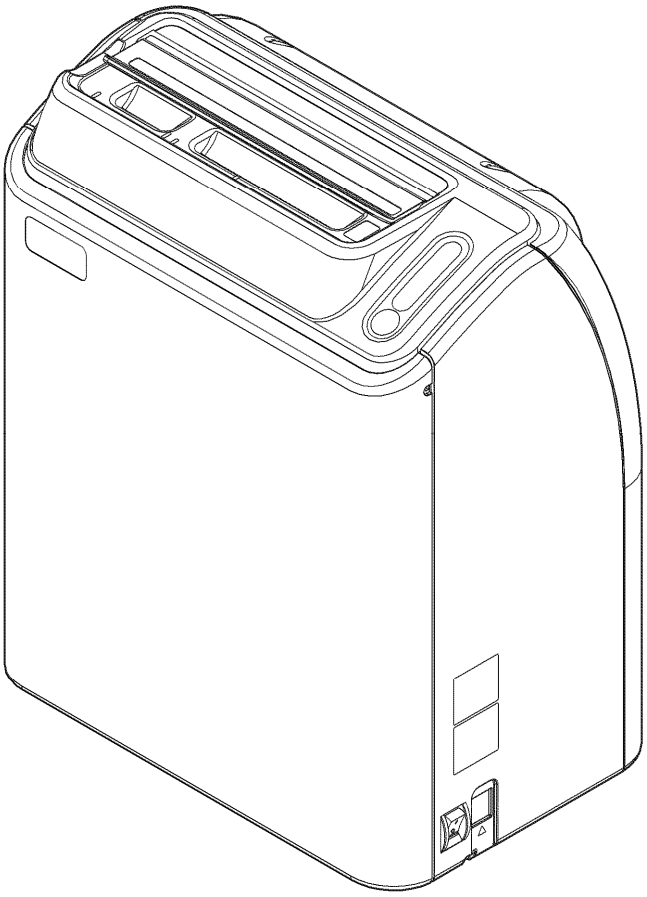
FUJIFILM

FUJI COMPUTED RADIOGRAPHY

FCR PRIMA Ⅱ

Product Specifications

1st Edition
Sep, 2011



FUJIFILM Corporation

Z30N9264 Sep,2011

Contents

1. Overview

The FUJI Computed Radiography FCR PRIMA Ⅱ is Digital Radiography equipment that uses the Imaging Plate (IP) as a X-ray detector to read X-ray image information stored on the IP that is exposed by a cassette-type X-ray exposure unit.

This equipment is used for contrast medium radiography as well as X-ray tomography, in addition to plain radiography of the chest, abdomen, bone, head and the like.

2. Features

(1) Compact body and lightness.

(2) Capable of loading the cassette vertically.

15cmx30cm IP for pantomography can be processed among other sizes.

3. System Components

3.1 Standard Components

(1) FCR PRIMA Ⅱ Image Reader Unit* (Model: CR-IR 391RU)

* It is hereafter called “RU”.

3.2 Options

(1) Kit for anchoring the RU to the floor

(2) Stand

(3) Cassette rack

(4) CPU floor mount kit

(5) Arm for LCD Monitor

(6) Stand wall fix kit

(7) AC cord

(8) Long view cassette holder

3.3 Other System Components

(1) IP cassette

Type CC、Type LC※

※ Available on CR Console（CR-IR348CL ）only.

(2) Image processing unit

FCR PRIMA Console(CR-IR391CL)

FCRView(CR-VW674) since V5.0

FCR PRIMA V Console(CR-IR391VCL)

FCR CAPSULA V VIEW（CR-IR355VCL）since V5.0

CR Console（CR-IR348CL ）since V7.1

※The Image processing unit connected by the region is different.

(3) Dry Imagers:

DRYPIX PRIMA、DRYPIX 2000、DRYPIX 4000、

DRYPIX 5000、DRYPIX 7000、DRYPIX Plus

※The Dry Imager connected by the region is different.

3.4 Supplies

Fuji IP：ST-VI

4. Specifications

4.1 Available IP cassette types and sizes

- Type CC (Standard type)

  14"×17" ,14"×14" ,10"×12", 8"×10",
  35×43cm, 35×35cm, 24×30cm, 18×24cm,
  15×30cm（Variation）

- Type LC※ (Long view cassette)

  （14"×17" ） x 3, （14"×14" ） x 3,
  （14"×17" ） x 2, （10"×12" ） x 2,
  （24×30cm） x 2

  When using the type LC cassette, always use an optionally available "Kit for anchoring the RU to the floor" for preventing the equipment from being toppled over.

  ※ Available on CR Console（CR-IR348CL ）only.

4.2 Available IP types and sizes

- ST-VI (standard type)
  14"×17" ,14"×14" ,10"×12", 8"×10",
  35×43cm, 35×35cm, 24×30cm, 18×24cm,
  15×30cm（Variation）

4.3 Processing Capacity

(1) Processing capacity

IP Type		Processing Capacity
ST	14"×17" (35×43cm)	Approx. 35 IPs/hr.
ST	14"×14" (35×35cm)	Approx. 40 IPs/hr.
ST	10"×12"	Approx. 43 IPs/hr.
ST	8"×10"	Approx. 52 IPs/hr.
ST	24×30cm	Approx. 43 IPs/hr.
ST	18×24cm	Approx. 55 IPs/hr.
ST	15×30cm	Approx. 43 IPs/hr.

- The time required for changing the cassette is assumed to be 0(zero) seconds.
- The time required for image erasure is assumed to be exposure performed at 25mR or less of X-ray dose.
- A 100Base-TX cable is used for connection between the RU and the Console.

(2) Time required for feeding/loading IP

IP Type		Required Time
ST	14"×17" (35×43cm)	Approx. 103 sec.
ST	14"×14" (35×35cm)	Approx. 90 sec. (230 sec.)※
ST	10"×12"	Approx. 84 sec.
ST	8"×10"	Approx. 70 sec.
ST	24×30cm	Approx. 84 sec.
ST	18×24cm	Approx. 66 sec.
ST	15×30cm	Approx. 84 sec.

- The time required for image erasure is assumed to be exposure performed at 25mR or less of X-ray dose.

※ ( ):400mR of X-ray dose

- A 100Base-TX cable is used for connection between the RU and the Console.

(3) Time required to display image on the monitor through Console

IP Type		Required Time
ST	14"×17" (35×43cm)	Approx. 50 sec.
ST	14"×14" (35×35cm)	Approx. 45 sec.
ST	10"×12"	Approx. 42 sec.
ST	8"×10"	Approx. 35 sec.
ST	24×30cm	Approx. 40 sec.
ST	18×24cm	Approx. 33 sec.
ST	15×30cm	Approx. 40 sec.

- A 100Base-TX cable is used for connection between the RU and the Console.

(4) Film output time

For DRYPIX PRIMA

IP Type		Required Time to print / Film Size
ST	14"×17" (35×43cm)	Approx. 165 sec. / 14"×17"
ST	14"×14" (35×35cm)	Approx. 160 sec. / 14"×17"

- A 100Base-TX cable is used for connection between the RU and the Console.

4.4 Image Reading

(1) Gray scale
Reading gray scale 12 bits/pixel

(2) Output to Console
Pixel density 10pixels/mm

4.5 Connection

• Network connection
Console connection 10BASE-T/100BASE-TX

4.6 Limitation of X-ray exposure

• When reading an unexposed IP again that has been used once, there is a possibility that a residual image may emerge. The erasure must be performed on the IP, especially in cases where the x-ray exposure is small.
• It is necessary to re-erase an IP again after reading when it has been exposed to a large x-ray dose (defined below). In addition, when exposed to a large dose continuously, the IP may suffer from x-ray damage.
<X-ray shot with large amount of dose>
Over 400mR (103,200 nC/kg) with W target X-ray tube

5. Principles of Operation

5.1 X-ray Exposure

The IP cassette containing an erased IP is set in an X-ray exposure unit, and exposed to X-ray.

5.2 Exposure Condition Input

The patient's demographic information is entered, and the exposure menu is selected on the Console.

5.3 Image Reading - Film Output

The cassette containing the exposed IP is inserted into the cassette inlet of the RU.

(1) The IP is taken out of the cassette automatically and scanned with the laser beam at the image reading section. The luminescence from the IP is collected, converted to electric signals, and then sent to the image-processing.

(2) The read digital data is processed to make the best image for diagnosis according to the previously selected exposure menu, and sent to the Console. The image will then be displayed on the monitor. The digital data is also used to print the image on film.

(3) The IP whose image signals have been read is then subjected to erasure. After image is erased at the erasure section, the IP is returned to the cassette. And then the cassette is returned to the cassette inlet. This cassette is ready for the next exposure.

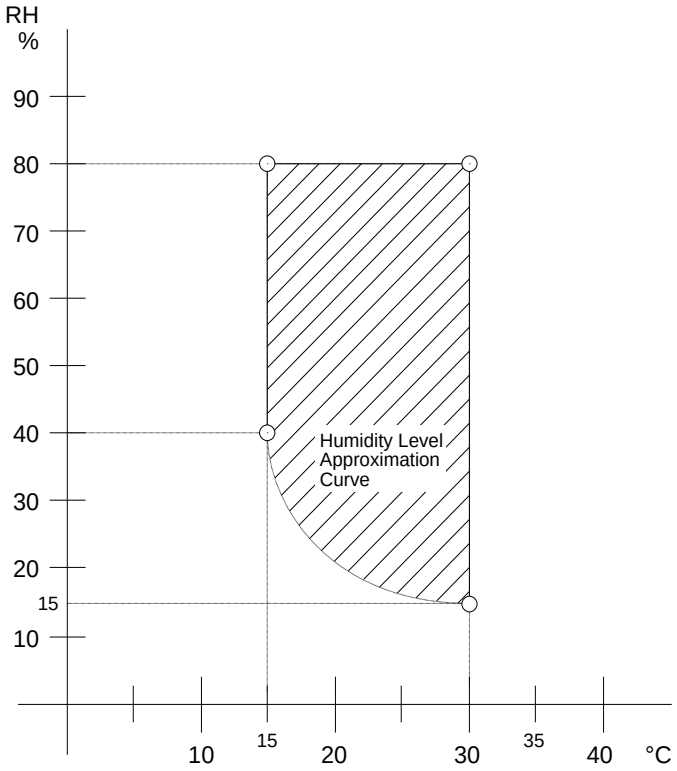
6. Power Supply Conditions

(1) Single phase 50–60Hz
AC120–240V ±10%
5A (Max.)

7. Environmental Conditions

(1) Operating Conditions
Temperature : 15 - 30°C
Humidity : 15 - 80%RH
(No dew condensation)
Atmospheric pressure : 750 - 1,060hpa
Power consumption
Operating state : 170VA or less
Standby state : 100VA or less

Equipment Noise
Operating state : 55dB or less*
（Excluding single sound）
Standby state : 45dB or less*
* Measurement values based on office regulation (Frontal sound pressure level. Comply with ISO1996-1 and ISO1996-2)



Temperature and Humidity Conditions

(2) Non-Operating Conditions
Temperature : 0 - 45°C
Humidity : 10 - 90%RH
(No dew condensation)
Atmospheric pressure : 750 - 1,060hpa

8. External Dimensions and Weight

Width	Depth	Height	Weight
Approx. 600 mm	Approx. 400 mm	Approx. 780 mm	Approx. 70 kg
Approx. 24 inch	Approx. 16 inch	Approx. 31 inch	Approx. 155 lb

Dimensions and weight are approximate and are subject to change without prior to notice. (Values in the table above do not include those of protrusions.)

(Unit: mm)

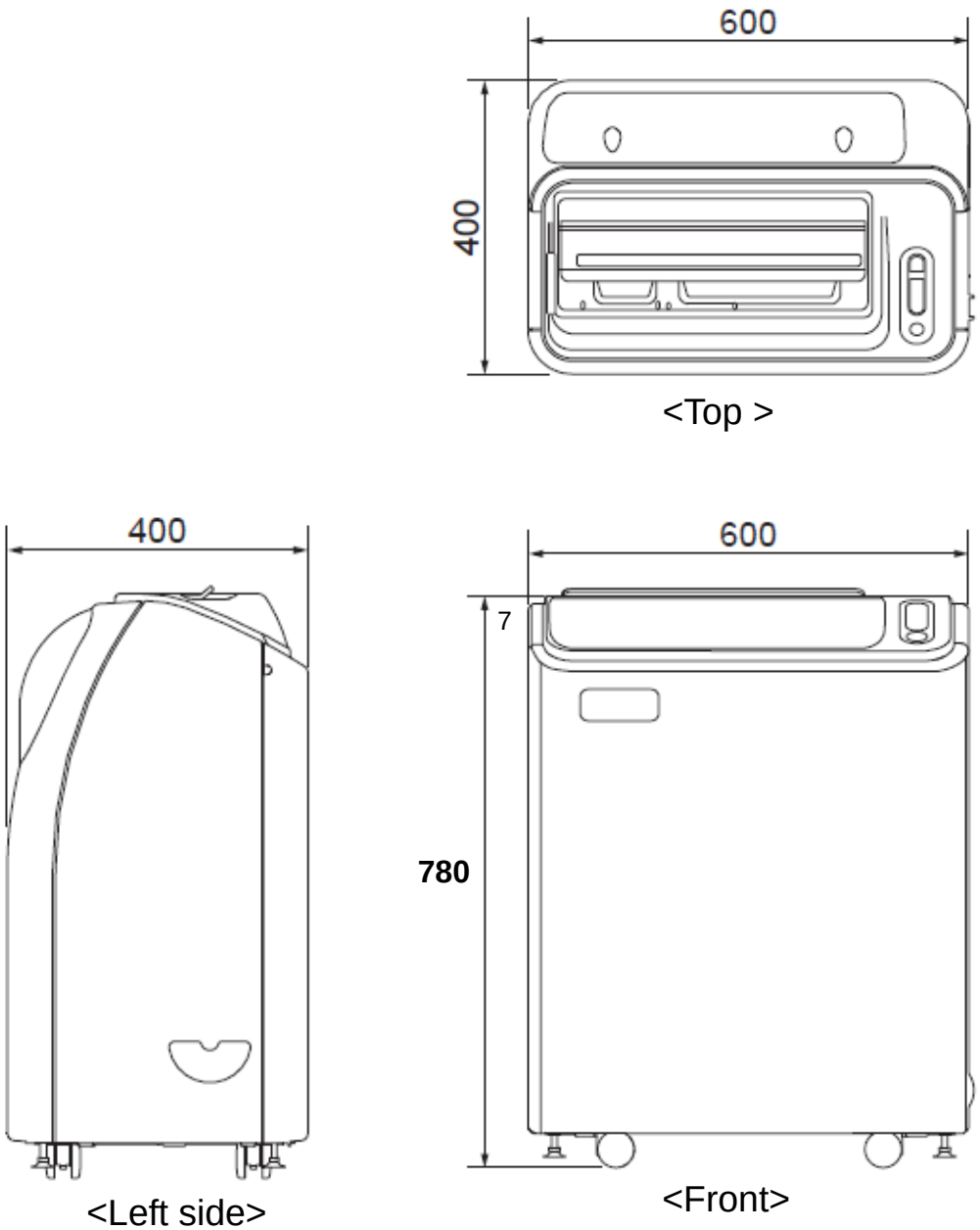


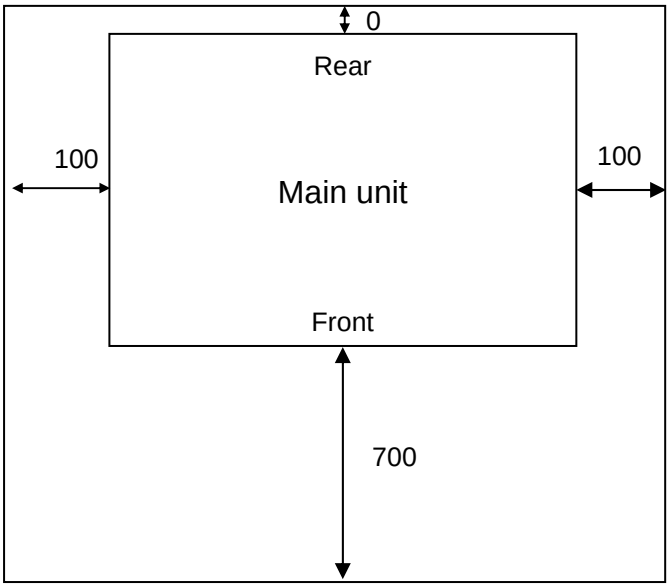
Fig. 1 FCR PRIMA Ⅱ External View

9. Footprint for Installation / Space Required for Maintenance

9.1 Footprint for Installation

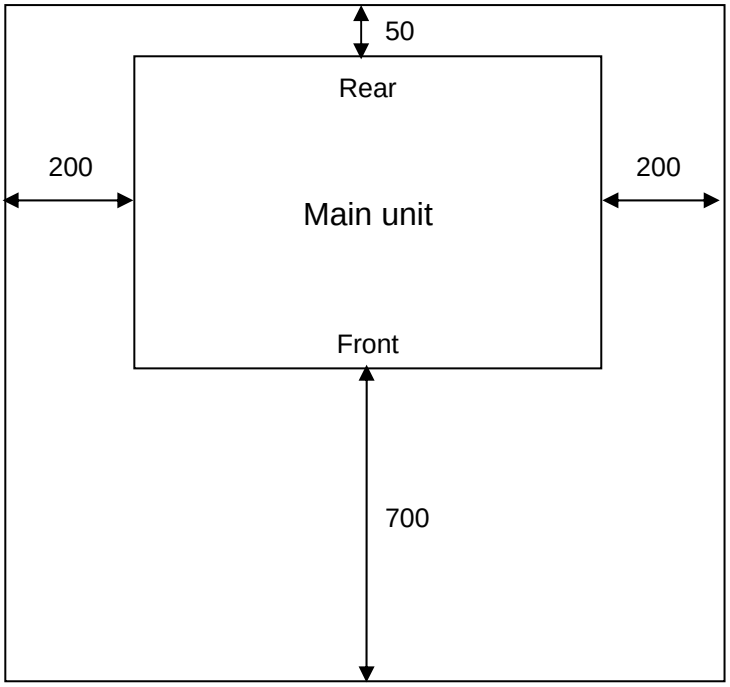
No earthquake-proof measures taken

Unit: mm



Measurement to prevent the equipment from being toppled over

Unit: mm



9.2 Space Required for Maintenance

At least a 700mm space should be secured either in front or rear, or right or left by moving the equipment accordingly.

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