SPECIFICATIONS

RadiForce® RX840

92 cm (36.4 inch) class Color LCD Monitor
Viewable Image Size 92.3 cm (36.3 inches)

CONTENTS

EIZO NANAO CORPORATION

1 REVISION TRACE

No.	Date	Alternation
A	12 Oct. 2011	Established
B	18 Jan. 2012	Revised P11 Revise 'Allowable number of defective dots' P13 Revise 'Scratch / Foreign substance'
C	13 Feb. 2012	P3 Change Product number
D	10 Sep. 2012	P11-12 Fix table of defective dots due to some typos P18 Fix a typo of packaging dimension
E	24 Oct. 2012	P3 Change Product Number (Ver.C) P19 Change length of all of the cables from 2m to 3m P20 Change GB4943 to GB4943.1 P20 Change RoHS to "(2011/65/EU) P20-21 Add China energy labeling
F	21 Nov. 2012	P8 Fix brightness of Custom, sRGB and Text mode P8 Fix typo of Hybrid Assignment P14 Change Color temperature from OFF to Native

2 ABOUT THE SPECIFICATIONS

The specifications apply only to the following monitor for use in North American, European and Asian countries.

EIZO RadiForce RX840

Country	Panel Treatment	Product Number
Europe	Anti-Glare	RX840EDBKC
Switzerland		RX840ESBKC
U.K.		RX840UKBKC
China		RX840CNBKC
U.S.A Canada		RX840USBKC

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If a situation not specified in these specifications or a question about them arises, negotiations should be made between the customer and Eizo Nanao Corporation on the modification of specifications.

3 PRECAUTIONS

3.1 Applications

This product is suited to display medical images of such modalities as MRI and CT, and PET. This product is not developed for applications which would require higher reliability, and safety such as those listed below.

- Transportation systems (Ship, aircraft, train, automobile, etc.)
- Safety devices (Disaster prevention system, security control system, etc.)
- Equipment for the use that have direct effect on human life (Life support system, Medical equipment or devices used in the operating room, etc.)
- Nuclear energy control devices (Nuclear energy control system, security control system of nuclear facility, etc.)
- Main line devices (Operation control for the transportation, control systems specific to the aircraft, etc.)

Please contact EIZO NANAO CORPORATION for consultation, if you plan to use a product in the manners listed above or for any other deviation of use from the standard application.

3.2 Usage

- The product is designed for in-door use only. Please read the User's manual included into the product package carefully before use.
- This product has been adjusted specifically for use in the region to which it was originally shipped. If operated outside the region to which it was originally shipped, the product may not perform as stated in the specifications.
- The product specifications are also guaranteed with the EIZO standard power cord and signal cable provided with the product and/or EIZO optional cables.
- Please find listed below phenomena caused by the characteristics inherent to the LCD itself that are not defects of the product.

(1) Defective pixels, bright point

The screen may have some defective pixels as slightly light or dark areas on the screen.

(2) After image, retained image

When the screen image has been changed after displaying the same image for a period, after images (retained image) may appear.

(3) Backlight life

The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, the backlight needs to exchange.

(4) Characteristics for the LCD panel

Take care when handling the LCD panel. Do not scratch or press on the panel with any sharp objects, such as pencil or pen. Cleaning the panel with a dirty or rough cloth also may damage the panel. Do not press on the panel or edge of the frame strongly as this will result in damage to the screen.

(5) Warm-up period

It takes approx. 30 minutes before the monitor and component stabilizes. Allow the monitor to warm up for at least 30 minutes before making adjustment.

- When transferring the monitor from a cold environment to a warm environment, dew condensation might occur. When this occurs, please wait until the dew condensation disappears from the monitor before turning on the power. Turning the power on too soon with dew condensing will damage the monitor.
- Periodic cleaning of the screen is recommended to maintain image clarity.

3.3 Exclusion of liability

EIZO and Distributors shall have no obligation under this Warranty whatsoever in any of the cases as set forth below:

(a) Any defect of the Product caused by freight damage, modification, alteration, abuse, misuse, accident, incorrect installation, disaster, faulty maintenance and/or improper repair by third party other than EIZO and Distributors;
(b) Any incompatibility of the Product due to possible technical innovations and/or regulations;
(c) Any deterioration of the sensor;
(d) Any deterioration of display performance caused by the deterioration of expendable parts such as the LCD panel and/or backlight, etc. (e.g. changes in color, changes in color uniformity, defects in pixels including burnt pixels, etc.);
(e) Any deterioration of the Product caused by the use at higher brightness than the recommended brightness described in the User's Manual;
(f) Any defect of the Product caused by external equipment;
(g) Any defect of the Product on which the original serial number has been altered or removed;
(h) Any normal deterioration of the product, particularly that of consumables, accessories, and/or attachments (e.g. buttons, rotating parts, cables, user's manual, etc.); and
(i) Any deformation, discoloration, and/or warp of the exterior of the product including that of the surface of the LCD panel.

3.4 Limited Warranty

- The product is warranted for the following period.

Monitor	LCD panel	Brightness level
5 years[*1]	5 years[*1]	5 years[*2]

[*1] The product shall be free from defects in material and workmanship for a period of five (5) years.

[*2] The product shall be free from defects in material and workmanship for a period of five (5) years, but subject to the usage time being less than or equal to 25,000 hours (the brightness is 400 cd/m^2 and color temperature is 7500K) or less than or equal to 40,000 hours (the brightness is 300 cd/m^2 and color temperature is 7500K) from the date of purchase.

- Panel qualification (Bright dots, Black dots) is guaranteed 6-month after production.

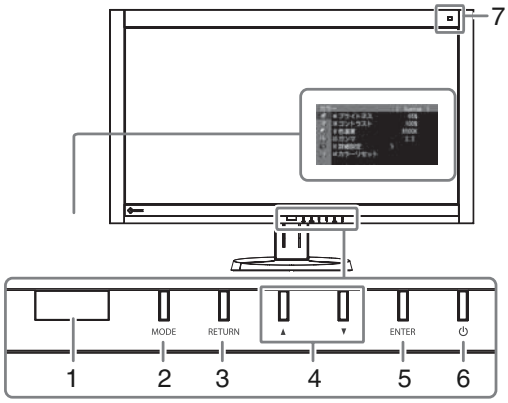
- EIZO NANAO COPORATION will stock parts of this monitor at least seven years after the stop of production. In repairing the monitor, we will use renewal parts which comply with our QC standards.

4 USER CONTROL SPECIFICATIONS

4.1 Function & Control

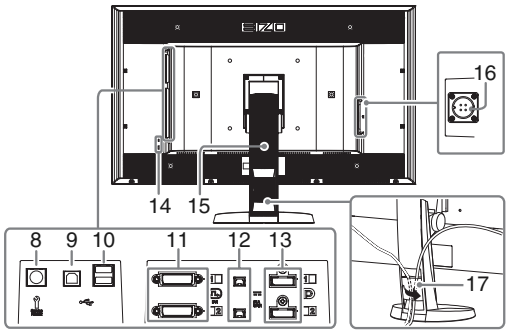
■ Monitor

(Front)



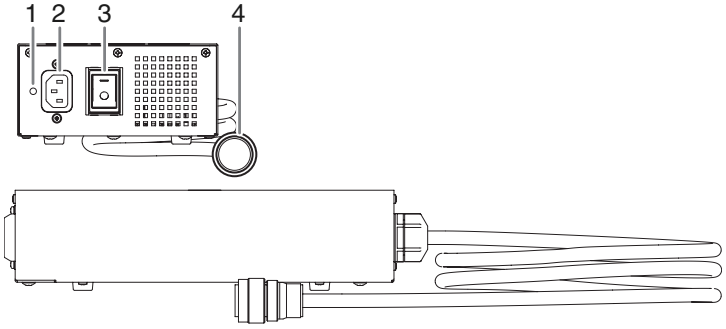
(1) Presence Sensor
(2) MODE button
(3) RETURN button
(4) Control buttons
(5) ENTER button
(6) Power button
(7) Illuminance sensor

(Rear)



(8) PS/2 connector
(9) USB port (UP)
(10) USB port (DOWN)
(11) DVI-D connector
(12) DC5V output
(13) DisplayPort connector
(14) Security lock slot
(15) Stand
(16) Power connector
(17) Cable holder

■ AC adapter (PSA)



(1) Slot for power cord holder
(2) Power connector
(3) Main power switch
(4) Power cable

4.2 Power Indicator (LED)

Status	Power Indicator
Operation mode	Green
Power save	Orange

4.3 OSD menu

Item					Reset value
Color	DICOM	Brightness			Refer to 4.4.
		Color Reset			
	Custom	Brightness			
		Contrast			
		Temperature			
		Gamma			
		Advanced Settings	Hue		
			Saturation		
			Gain	Red	
				Green	
				Blue	
		Color Reset			
	CAL1/2/3	Brightness			
		Color Reset			
	Hybrid-γ	Hybrid Area			
		Hybrid Assignment			
		Highlight Area			
		Color Reset			
	sRGB	Brightness			
		Temperature			
		Color Reset			
	Text	Brightness			
		Contrast			
		Temperature			
		Gamma			
		Advanced Settings	Hue		
			Saturation		
		Color Reset			
RadiCS SelfQC	SelfCalibration	Execute			-
		Result	DICOM		-
			Custom		-
			CAL1		-
			CAL2		-
			CAL3		-
	Grayscale Check	Execute			-
		Result	DICOM		-
			Custom		-
			CAL1		-
			CAL2		-
			CAL3		-
	Settings	Warning			Off
		QC History			On
Screen	Screen Position				Center
PowerManager	Power Save				High
	Presence Sensor				Off
	Power Indicator				4
Menu Settings	Language				English
	Menu Position				Center
Tools	Input				DVI
	Input Selection				Auto
	Mode Preset				All On
	Signal Info				—

	Monitor Info	—
	All Reset	—
Optional Settings	Key Lock	Off
	DDC	On
	DC5V Output	Off
	Resolution	8MP

4.4 Default Settings of CAL Switch

Mode	Brightness	Contrast	Temperature	Gamma	Saturation	Hue
1-DICOM	Adjusted value (400cd/m2)	-	7500K	GSDF (Lmin:0.70 cd/m2)	-	-
2-Custom	52% (400cd/m2 typ.)	100%	7500K	2.2	0	0
3-CAL1	Adjusted value (300cd/m2)	-	7500K	GSDF (Lmin:0.65 cd/m2)	-	-
4-CAL2	Adjusted value (300cd/m2)	-	7500K	2.2 (Lmin: Natural)	-	-
5-CAL3	Adjusted value (400cd/m2)	-	7500K	GSDF (Lmin: Natural)	-	-
6-Hybrid-γ	Hybrid Area: 5-CAL3, Hybrid Assignment: Full Scan, Highlight Area: Off					
7-sRGB	28% (250cd/m2 typ.)	-	6500K	2.2	-	-
8-Text	5% (100cd/m2 typ.)	100%	6500K	2.2	0	0

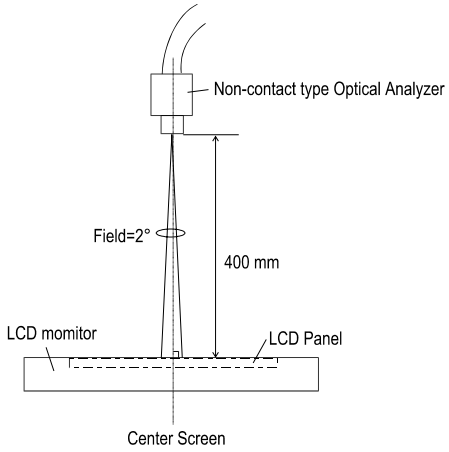
5 LCD SPECIFICATIONS

5.1 Panel specifications

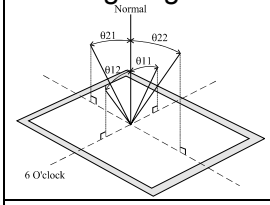
Type	Color TFT (IPS type)
Size	36.4 inch (92 cm)
Resolution	4096 x 2160
Dot Pitch	0.1995 mm x 0.1995 mm
Viewable Image Size	817.1 mm (H) x 430.9 mm (V)
Face Treatment	Anti-Glare Hardness 3H

5.2 Optical specifications

(Guideline)

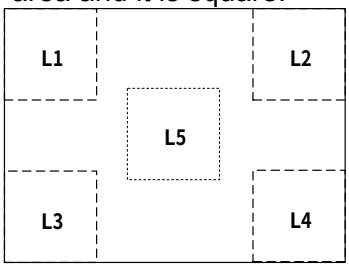


Measured under the condition of the right diagram in the dark room or the same level condition.

Item		Value	Conditions
Viewing Angle 		θ11 (Top): 88° typ. θ12 (Bottom): 88° typ. θ21 (Left): 88° typ. θ22 (Right): 88° typ.	Center of the panel Contrast Ratio > 10
Contrast Ratio		1000:1 typ.	Center of the panel , 2-Custom, Temperature:Native
Response time Black → White→ Black Gray to Gray		25 ms typ. 8 ms typ.	Viewing Angle：0 degree, 10% <-> 90%
White balance		x=0.300 typ. y=0.315 typ.	White field, Center of the panel, Temperature: Native
Chromaticity x/y	R	0.640 typ. / 0.330 typ.	temperature: Native, In compliance with CIE 1931 chromaticity diagram
	G	0.302 typ. / 0.611 typ.	
	B	0.150 typ. / 0.060 typ.	
Bright uniformity		+/-10% typ. +/-15% max. (128/255 level)	Corners and the centers are measured by RadiCS (note 1) (Ln-L5)/L5*100 n=1 to 4
Max. brightness		700 cd/m² typ.	White field, 25°C Center of the panel 2-Custom

Item	Value	Conditions
Recommended brightness	400cd/m^2	White field, 25°C Center of the panel

(Note 1) measured 5 points. The area of each patch to be measured is 10% of the entire area and it is square.



5.3 LCD Panel Qualification

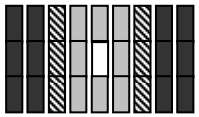
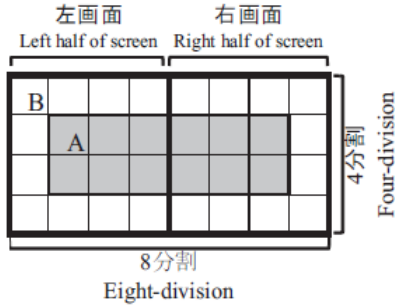
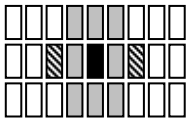
5.3.1 Definition

- A dot observed through a ND filter or on the prescribed gray background is a bright dot.
- A blinking dot is also counted as a bright dot.
- A black dot observed by human eyes is counted as a black dot no matter how bright or big it is.
- A set of coupled defective dots is counted as 1 defective dot.
  e.g.) A set of 2 coupled dot ··· counted as a 1 defective dot
  A set of 3-coupled dot ··· counted as a 1 defective dot
- A Single and/or coupled defective dot(s) is/are counted separately and applied each standard value.
  e.g.) a single defective dot, a 2-coupled dot ··· total 2 dots
- A single and/or coupled defective dot(s) within the allowable distance/ area is/are counted separately and applied each standard value.
  e.g.) a single defective dot + a 2-coupled dot = 2 dots
- A shining dot/ black dot due to a foreign substance on polarizer is not counted as a bright/black dot.

5.3.2 Condition

Item	Conditions
Ambient Light	500~700 lx
Ambient Temperature	0°C~35°C
Observation distance	500mm (straight angle)
Measurement pattern	White screen, Black screen (The measurement conditions for the panel qualification are prioritized.)
Area Definition	Whole area

5.3.3 Allowable number of defective dots

Item	Value	Conditions	Comments
Bright dot : 1defective dot 2-coupled 3-coupled or over Total Allowable distance/area	0 0 0 0 Distance : - Area : -	Signal : Black pattern Condition : Dots observed through an 8% ND filter. Full sub-pixel bright dot.	Coupled dots are defined as grayed area around the center dot in the picture below. 
Tiny bright dot : 1 defective dot Allowable distance/area	6 or less Area : 3 dots or less in each half(left or right) of the screen. 2 dots or less in 20 mm ϕ.	Signal : Black pattern Condition : Dots considered full sub-pixel bright dot. 【Zone A】 Dots are observed through 8% ND filter, and are not observed through 5% ND filter. 【Zone B】 Dots are observed through 5% ND filter, and are not observed through 2% ND filter.	
Black dot : 1 defective dot 2-coupled 3-coupled or over Total Allowable distance/area	16 or less 3 or less 0 16 or less Distance : - Area : 2 dots or less in 20 mm ϕ. [note] A maximum of four green black dots are allowed.	Signal : White/Red/Green/Blue pattern	Coupled dots are defined below as grayed area around the center dot,and black mode opened one dot. 

Bright + blackdots : Total (Except tiny bright dot) Allowable distance/area	Total 16 or less Distance - Area -		

5.3.4 Scratch/ Foreign substance

Item		Specified value		Comments
Foreign substance	(Circle)	d＜0.2mm 0.2mm≦d≦0.6mm d＞0.6mm	- 12 0	d : Mean diameter (mm)
	(Line)	W≦0.05mm L≦3.5mm, 0.05＜W≦0.15mm L＞3.5mm W＞0.15mm	- 5 0 0	L : Length (mm) W : Width (mm)
Polarizer Scratch	(Line)	W≦0.05mm L≦11.0mm,0.05＜W≦0.15mm L＞11.0mm W＞0.15mm	- 6 0 0	L : Length (mm) W : Width (mm)
Polarizer bubble • wrinkle • dent		d＜0.2mm 0.2mm≦d≦0.6mm d＞0.6mm	- 12 0	d : Mean diameter (mm)

6 SENSOR SPECIFICATIONS

6.1 Integrated Front Sensor specifications

6.1.1 Conditions

Item	Value
Rotation & Tilt	Rotation: Landscape Tilt: 0 to 10degree
Ambient Temperature & Humidity	Recommend: 25.0 +/- 1.0degreeC, 30%Rh to 80%Rh
Brightness of Monitor	Recommend: 400 cd/m2 Operation: 300 cd/m2 to 700 cd/m2

6.1.2 Integrated Front Sensor

Item	Value	Conditions
Luminance Measurement Range	0.02～700cd/m2	
Repeat accuracy	Brightness Y 3.0 to 700cd/m2 +/- 1.0% 0.1 to 3.0 cd/m2 +/- 6.0% Color Coordinate x,y 10.0 to 700cd/m2 +/- 2/1000 3.0 to 10.0cd/m2 +/- 5/1000 0.1 to 3.0 cd/m2 +/- 18/1000	Brightness Y: σ / average Color Coordinate x,y: σ Under the stable ambient condition σ is the standard deviation of 30 times measurement value. (1 measurement per second)
Change of Correlation accuracy	±3.0% (3.0～700 cd/m2) ±10.0% (0.1～3.0 cd/m2)	CAL Switch Mode: 2-Custom Color Temperature: Native Gamma: 2.2

6.2 Ambient Light Sensor specifications

Item	Value	Conditions
Illuminance Measurement range	0～2000Lx	Ta＝25℃ A illuminant: 2856K

6.3 Presence Sensor specifications

Item	Value	Conditions
Distance measurement range	35～90cm	Non-specular

7 ELECTRICAL SPECIFICATIONS

7.1 Standard measurement conditions

All measurements are subject to the conditions listed below.

Item	Condition
Input Signal	TMDS
Displaying Image	2dot mesh with white and black
External Load	USB: 500mA x2 DC 5V: 1A x2 DisplayPort: 500mA x2 P/S2: 400mA
Brightness	100%
CAL Switch	1-DICOM
Ambient Temperature	15 ~ 35°C
Aging	After warm up for at least 30 minutes

7.2 Displaying Performance

Item	Value
Horizontal Scanning Frequency	31kHz~140kHz
Vertical Scanning Frequency	VGA TEXT: 69Hz~71Hz 2048x2160,1920x2160: 29.5Hz~30.5Hz Except the above signal: 59Hz~ 61Hz
Frame synchronous mode range	29.5Hz ~ 30.5Hz 59.0Hz ~ 61.0Hz
Minimum Signal Timing (In the blanking period)	Minimum hrizontal blanking width: 38dot Minimum vertical blanking width：12H
Display Colors	8-bit colors: 16.77 million colors 10-bit colors: 1.07 billion colors (maximum)

7.3 DVI Signal Input

Item	Value
Transmission System	Single/Dual TMDS Link Based on DVI Rev. 1.0
Dot clock	310MHz max. Up to 165MHz: Single Link Over 165MHz: Dual Link

7.4 DisplayPort Signal Input

Item	Specified Value
Bit Rate	1.62Gbps/ 2.7Gbps Based on DisplayPort Rev.1.1a
Lane Count	1/2/4
Color Bit Depth	8,10 bit
Dot clock	290MHz max.
Audio Input	Not Supported

7.5 Power Supply

Item	Value	Conditions
Input voltage	AC100-120 V±10 % 50/60 Hz AC200-240 V±10 % 50/60 Hz	-
Maximum power consumption	Less than 350W	Load condition USB: 500mA x2 DC 5V: 1A x2 DisplayPort: 500mA x2 P/S2: 400mA
Maximum input current	3.5A-1.5A (AC100~240V)	
Power saving mode	6.0W or less	AC100/115/230V Without load of USB, P/S2, and DC5V, DVI input only
In-rush current	40 A max. (Cool) 96 A maxi. (Hot)	AC264V
Leakage current	0.5 mA or less (Normal) 0.5 mA or less (abnormal)	AC264V 60Hz AC260V 60Hz

7.6 USB Specification

Item	Value
USB Standard	Support USB 2.0 (Self powered hub)

8 MECHANICAL SPECIFICATIONS

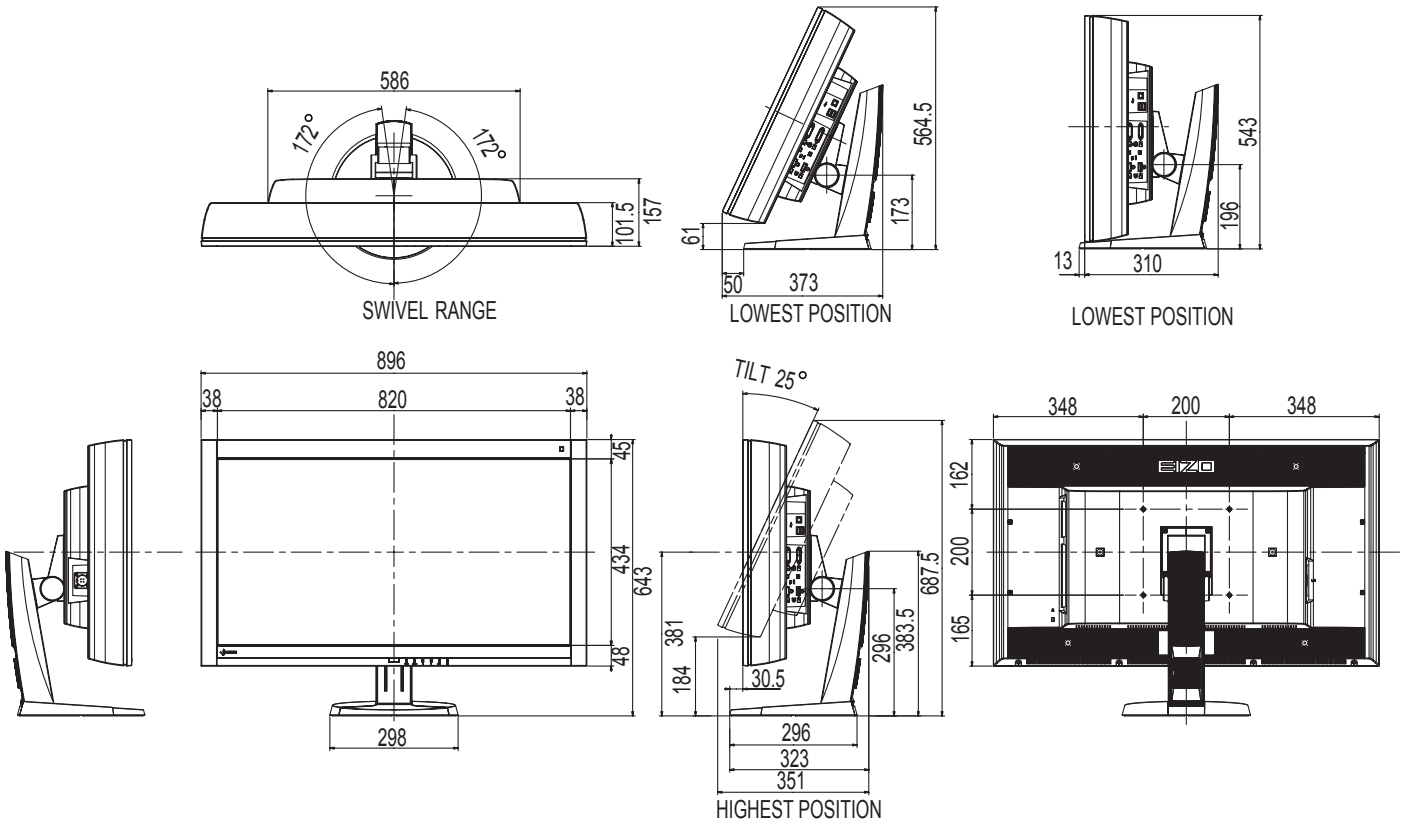
8.1 Configuration

NOTE: All of the dimensions, weights and angles below are reference values.

- With Stand

Dimensions (net)	Minimum Height(Tilt 25°): 896(W) x 564.5(H) x 373(D) mm Maximum Height(Tilt0°): 896(W) x 643(H) x 323(D) mm AC adapter: 148(W) x 74(H) x 280(D) mm
Weight (net)	approx.27.9kg (Monitor/Stand) approx 3.0kg (AC adapter)
Tilt Angle	Up: 25° Down: 0°
Swivel Angle	Right: 172° Left: 172°
Pivot Angle	Not supported
Outline drawing	Refer to the below.

Unit: mm



- Without Stand

Dimensions (net)	896 ㎜ (W) x 527 mm (H) x157 mm (D)
Weight (net)	approx.23.2kg
Hole spacing	Compatible with VESA standard 200 mm x 200 mm
Screw mounting hole size	4-M6

8.2 Packing Specifications

NOTE: All of the dimensions and weight below are reference values.

Packing dimensions	1024 mm (W) x 452 mm (D) x 732 mm (H)
Packaging weight	approx. 38.0 kg
Stack limit	3 units (Maximum)

8.3 Materials

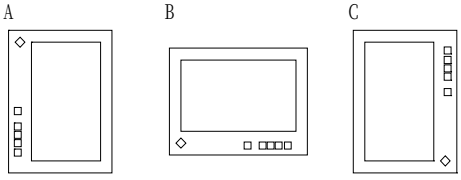
Item	Material
Cabinet	PC+ABS
Stand	ABS
Packing Case	Cardboard
Cushion	Expanded polystyrene

8.4 Free Mount installation conditions

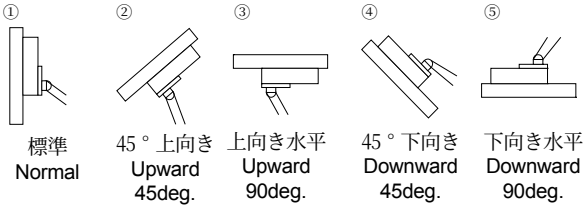
It is possible to perform free mount installation in the following combination.

Monitor rotation direction	Inclination on the surface
A	1, 2, 4 and the middle
B	1, 2, 4 and the middle
C	C direction is not supported

○設置方向/Orientation



○画面角度/Angle



9 ACCESSORIES

9.1 Accessories

Item	Description	EDBK	USBK	UKBK	ESBK	CNBK
Power Code	3.0 m, VDE approved separate cord with 3 p in plug	○				
	3.0m, UL-CSA approved, hospital g rade, 3 p in plug		○			
	3.0 m , BS approved separate cord with 1 3 fuse, 3 p in plug			○		
	3.0m, SEV approved, 3 p in plug				○	
	3.0 m , CCEE approved separate cord with 3 p in plug					○
Signal Cable	DVI-D～DVI-D (3.0m、Dual Link)	○	○	○	○	○
	DP～DP (3.0m)	○	○	○	○	○
USB Cable	USB Cable (3.0m)	○	○	○	○	○
Setup Manual	English, German, French, Chinese	○	○	○	○	○
CD-ROM	「EIZO LCD Utility Disk」refer to 9.2	○	○	○	○	○
Recycling Information Sheet	Multi Language	○	○	○	○	
DisplayPort compatibility information Sheet	Japanese, English, German, French, Chinese	○	○	○	○	○
Power save info inset	Japanese, English, German, French, Chinese	○	○	○	○	○
Power Cable Holder	-	○	○	○	○	○
Screw for Vesa Mount Arm	M6x16, x4	○	○	○	○	○

(Caution) Precaution or notation sheets may be added or removed.

9.2 EIZO LCD Utility Disk

Item	Specifications	
Launcher software	Supported OS	Windows 7 / Windows XP / Vista
User's manual	Language	Japanese/English/German/French/Chinese
	File Type	PDF
RadiCS LE	Supported OS	Windows 7 / Windows XP /Vista
	Language	Japanese/English/German
Manual	Language	Japanese/English/German
	File Type	PDF
ScreenManager Pro for Medical	Supported OS	Windows 7 / Windows XP / Vista
	Language	Japanese/English
ScreenManager Pro for Medical Manual	Language	Japanese/English
	File Type	PDF
readme	Language	Japanese/English
	File Type	TEXT

(Caution) As of September 2011

10 CERTIFICATIONS & STANDARDS

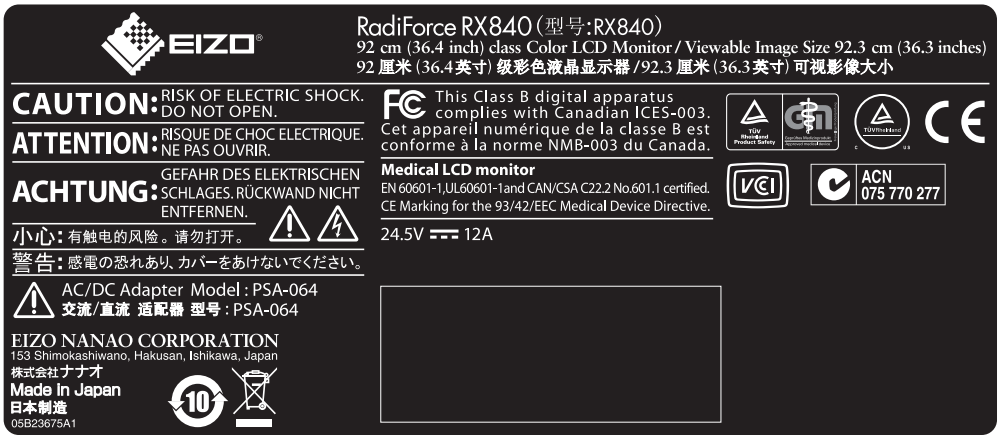
10.1 Certifications & Standards

Standard/Requirement	Origin	ED	ES	UK	US	CN
CB(Medical)	IEC60601-1	√	√	√	√	√
CB(ITE)	IEC60950-1	√	√	√	√	√
TÜV/GM	EN60601-1 IEC60601-1	√				
CE	[93/42/EEC:Medical Device Directive] EN60601-1 EN60601-1-2 (Class B) EN61000-3-2 EN61000-3-3	√	√	√		
c-TÜV-us	UL 60601-1 CAN/CSA-C22.2 No.601.1				√	
FDA[*1]	510(k) Pre-market Notification				√	
FCC	FCC part.15 subpart B Class B				√	
ICES-003	ICES-003 Class B (Canada)				√	
VCCI	VCCI Class B					
C-tick (Note1)	AS/NZS CISPR22 (Class B) AS/NZS 61000.3.2					
CCC[*1]	GB4943.1 GB9254 GB17625.1					√
GOST-R[*1] (Russia)	GOST R IEC60950 GOST R 50948 GOST R 51318.22 (class B) GOST R 51318.24 GOST R 51317.3.2 GOST R 51317.3.					
EC Directive	RoHS(2011/65/EU)	√	√	√		
	WEEE (2002/96/EC)	√	√	√		
Ministry of Information Industry, China, etc.	Management Methods for Controlling Pollution by Electronic Information Products (China RoHS)					√
National Development and Reform	Regulation on Energy-Efficiency Labeling Administration Level 2 (China)					√

Commission, etc (China)						
VESA	DPMS	√	√	√	√	√
	DDC2B	√	√	√	√	√
DDWG	Digital Visual Interface (DVI) Revision 1.0	√	√	√	√	√
USB Implementers Forum	Universal Serial Bus (USB) Specification Revision 2.0	√	√	√	√	√

*1 License processing. Ask for details of status.
(Caution) In order to comply with the certifications in the chart above, it is necessary to bundle the Power Cord and User's Manual specified by these standards.
(Caution) According to circumstances, certifications may be added, removed or changed.

10.2 Name Plate



(Caution) Additional standards or marking may be added to the name plate. In accordance with this addition, the code (05***), in the lower bottom corner will be changed.
(Caution) The label for additional standards or identified purposes may be put on near the name plate.

11 RELIABILITY

Item		Conditions	Comments
Operation	Temperature	0℃～35℃	
	Humidity	20～80%R.H.	Non condensing
	Pressure	700hPa～1060hPa	
Storage	Temperature	-20℃～60℃	
	Humidity	10～90%R.H.	Non condensing
	Pressure	200hPa～1060hPa	
	Temperature and humidity graph