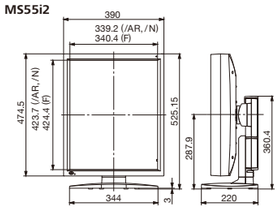
Specifications

Model Name		**MS55i2/AR** (Special AR Coating) **MS55i2/F** (Protective Filter) **MS55i2/N** (No Protective)	**MS35i2/AR** (Special AR Coating) **MS35i2/F** (Protective Filter) **MS35i2/N** (No Protective)	**MS25i2/AR** (Special AR Coating) **MS25i2/F** (Protective Filter) **MS25i2/N** (No Protective)
LCD Panel	Technology	21.3-inch, TFT monochrome active matrix IPS technology	21.3-inch, TFT monochrome active matrix IPS technology	21.3-inch, TFT monochrome active matrix IPS technology
	Display Area	422.40mm X 337.92mm	433.152mm X 324.864mm	432mm X 324mm
	Pixel Pitch	0.165mm X 0.165mm	0.2115mm X 0.2115mm	0.270mm X 0.270mm
	Contrast Ratio	1200 : 1 (typ)	1400 : 1 (typ)	1400 : 1 (typ)
	Maximum Luminance	1200cd/m² typ. (calibrated to 500cd/m² and 410cd/m² by factory default)	1700cd/m² typ. (calibrated to 500cd/m² and 410cd/m² by factory default)	1900cd/m² typ. (calibrated to 410cd/m² by factory default)
	Viewing Angle	176˚ vertical and horizontal (Wide view)	176˚ vertical and horizontal	176˚ vertical and horizontal
Visual Performance	Native Resolution	2048 X 2560, Independent Sub pixel Drive technology ON: 2048 X 7680 (sub-pixel)	1536 X 2048, Independent Sub pixel Drive technology ON: 1536 X 6144 (sub-pixel)	1200 X 1600, Independent Sub pixel Drive technology ON: 1200 X 4800 (sub-pixel)
	Grayscale	256 shades of grayscale are simultaneously displayed from a palette of 12,277 grayscale steps *1024 or 10-bit shades of grayscale with DisplayPort and 10-bit viewer *1276 shades of grayscale with customised medISD viewer	256 shades of grayscale are simultaneously displayed from a palette of 12,277 grayscale steps *1024 or 10-bit shades of grayscale with DisplayPort and 10-bit viewer *1276 shades of grayscale with customised medISD viewer	256 shades of grayscale are simultaneously displayed from a palette of 12,241 grayscale steps *1024 or 10-bit shades of grayscale with DisplayPort and 10-bit viewer *1276 shades of grayscale with customised medISD viewer
Interface	Input Signal	DVI-D (DVI 1.0 compliant) DisplayPort (DisplayPort 1.1a compliant)	DVI-D (DVI 1.0 compliant) DisplayPort (DisplayPort 1.1a compliant)	DVI-D (DVI 1.0 compliant) DisplayPort (DisplayPort 1.1a compliant)
	Plug and Play	DDC2B compliant	DDC2B compliant	DDC2B compliant
Input Power Supply	Input	100V ~ 240V (±10%) 50/60Hz	100V ~ 240V (±10%) 50/60Hz	100V ~ 240V (±10%) 50/60Hz
	Maximum Power Consumption	80W (typ)	60W (typ)	60W (typ)
Features	Calibration Control	Luminance, Gamma, Color temperature Capable of storing 3 sets of LUT (An optional Calibration kit is required)	Luminance, Gamma, Color temperature Capable of storing 3 sets of LUT (An optional Calibration kit is required)	Luminance, Gamma, Color temperature Capable of storing 3 sets of LUT (An optional Calibration kit is required)
	OSD Information Display	Model name, Serial No., Total operating time, Calibration settings (Operating time since last calibration, Luminance, Gamma), Current luminance and ambient light, DICOM conformance	Model name, Serial No., Total operating time, Calibration settings (Operating time since last calibration, Luminance, Gamma), Current luminance and ambient light, DICOM conformance	Model name, Serial No., Total operating time, Calibration settings (Operating time since last calibration, Luminance, Gamma), Current luminance and ambient light, DICOM conformance
	USB Hub	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)
	Other Features	Luminance uniformity correction, Hardware pivot, LED indicator, Multiple LUT, Independent Sub pixel Drive technology, Self DICOM check	Luminance uniformity correction, Hardware pivot, LED indicator, Multiple LUT, Independent Sub pixel Drive technology, Self DICOM check	Luminance uniformity correction, Hardware pivot, LED indicator, Multiple LUT, Independent Sub pixel Drive technology, Self DICOM check
Approvals		ANSI/AAMI ES60601-1(2005) , CAN/CSA-C22.2 No. 60601-1(2008), CE (EN60601-1, EN60601-1-2), FCC Part15 subpart B Class B, ICES-003-B, VCCI-B, CCC, FDA 510(k), RCM, J-Moss, RoHS	ANSI/AAMI ES60601-1(2005), CAN/CSA-C22.2 No. 60601-1(2008), CE (EN60601-1, EN60601-1-2), FCC Part15 subpart B Class B, ICES-003-B, VCCI-B, CCC, FDA 510(k), RCM, J-Moss, RoHS	ANSI/AAMI ES60601-1(2005), CAN/CSA-C22.2 No. 60601-1(2008), CE (EN60601-1, EN60601-1-2), FCC Part15 subpart B Class B, ICES-003-B, VCCI-B, FDA 510(k), RCM, J-Moss, RoHS
Physical Characteristics	Dimensions (incl. tilt stand)	Landscape : 474.5 (W) X 482.9 / 544.4 (H) X 220 (D)mm	Landscape : 474 (W) X 468.4 / 529.9 (H) X 220 (D)mm	Landscape : 474 (W) X 468.4 / 529.9 (H) X 220 (D)mm
		Portrait : 390 (W) X 525.15 / 586.65 (H) X 220 (D)mm	Portrait : 367 (W) X 521.9 / 583.4 (H) X 220 (D)mm	Portrait : 367 (W) X 521.9 / 583.4 (H) X 220 (D)mm
	Weight	approx. 13kg	approx. 12kg	approx. 12kg
	Tilt Stand	Tilt, Swivel, Portrait / Landscape	Tilt, Swivel, Portrait / Landscape	Tilt, Swivel, Portrait / Landscape
	Mount	100mm VESA mounting	100mm VESA mounting	100mm VESA mounting
	Security Slot	Display, Stand	Display, Stand	Display, Stand
Accessories		Power cord, DVI cable, DisplayPort cable, USB cable, Users manual, Cleaning kit* *Special AR coating model only	Power cord, DVI cable, DisplayPort cable, USB cable, Users manual, Cleaning kit* *Special AR coating model only	Power cord, DVI cable, DisplayPort cable, USB cable, Users manual, Cleaning kit* *Special AR coating model only

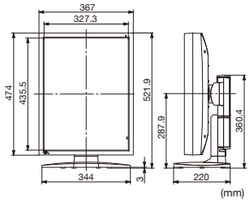
Model Name		**CCL358i2/AR** (Special AR Coating) **CCL358i2/F** (Protective Filter) **CCL358i2/N** (No Protective)	**CCL258i2/AR** (Special AR Coating) **CCL258i2/F** (Protective Filter) **CCL258i2/N** (Protective Filter)
LCD Panel	Technology	21.3-inch, TFT color active matrix IPS technology	21.3-inch, TFT color active matrix IPS technology
	Display Area	433.152mm X 324.864mm	432mm X 324mm
	Pixel Pitch	0.2115mm X 0.2115mm	0.270mm X 0.270mm
	Contrast Ratio	1400 : 1 (typ)	1400 : 1 (typ)
	Maximum Luminance	800cd/m² typ. (calibrated to 410cd/m² and 300cd/m² by factory default)	900cd/m² typ. (calibrated to 410cd/m² and 300cd/m² by factory default)
	Viewing Angle	176˚ vertical and horizontal	176˚ vertical and horizontal
Visual Performance	Native Resolution	1536 X 2048	1200 X 1600
	Display Colors	16.77million colors from a palette of 68 billion colors 1.06 billion colors with DisplayPort and 10-bit viewer	16.77million colors from a palette of 68 billion colors 1.06 billion colors with DisplayPort and 10-bit viewer
Interface	Input Signal	DVI-D (DVI 1.0 compliant), DisplayPort (DisplayPort 1.1a compliant)	DVI-D (DVI 1.0 compliant), DisplayPort (DisplayPort 1.1a compliant)
	Plug and Play	DDC2B compliant	DDC2B compliant
Input Power Supply	Input	100V ~ 240V (±10%) 50/60Hz	100V ~ 240V (±10%) 50/60Hz
	Maximum Power Consumption	80W (typ)	75W (typ)
Features	Calibration Control	Luminance, Gamma, Color temperature Capable of storing 3 sets of LUT (An optional Calibration kit is required)	Luminance, Gamma, Color temperature Capable of storing 3 sets of LUT (An optional Calibration kit is required)
	OSD Information Display	Model name, Serial No., Total operating time, Calibration settings (Operating time since last calibration, Luminance, Gamma), Current luminance and ambient light, DICOM conformance	Model name, Serial No., Total operating time, Calibration settings (Operating time since last calibration, Luminance, Gamma), Current luminance and ambient light, DICOM conformance
	USB Hub	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)
	Other Features	Luminance / color uniformity correction, Hardware pivot, LED indicator, Multiple LUT, Self DICOM check	Luminance / color uniformity correction, Hardware pivot, LED indicator, Multiple LUT, Self DICOM check
Approvals		ANSI/AAMI ES60601-1(2005), CAN/CSA-C22.2 No. 60601-1(2008), CE (EN60601-1, EN60601-1-2), FCC Part15 subpart B Class B, ICES-003-B, VCCI-B, CCC, FDA 510(k), RCM, J-Moss, RoHS	ANSI/AAMI ES60601-1(2005), CAN/CSA-C22.2 No. 60601-1(2008), CE (EN60601-1, EN60601-1-2), FCC Part15 subpart B Class B, ICES-003-B, VCCI-B, FDA 510(k), RCM, J-Moss, RoHS
Physical Characteristics	Dimensions (incl. tilt stand)	Landscape : 474 (W) X 468.4 / 529.9 (H) X 220 (D)mm	Landscape : 474 (W) X 468.4 / 529.9 (H) X 220 (D)mm
		Portrait : 367 (W) X 521.9 / 583.4 (H) X 220 (D)mm	Portrait : 367 (W) X 521.9 / 583.4 (H) X 220 (D)mm
	Weight	approx. 12kg	approx. 12kg
	Tilt Stand	Tilt, Swivel, Portrait / Landscape	Tilt, Swivel, Portrait / Landscape
	Mount	100mm VESA mounting	100mm VESA mounting
	Security Slot	Display, Stand	Display, Stand
Accessories		Power cord, DVI cable, DisplayPort cable, USB cable, Users manual, Cleaning kit* *Special AR coating model only	Power cord, DVI cable, DisplayPort cable, USB cable, Users manual, Cleaning kit* *Special AR coating model only

Dimensions

MS55i2



MS35i2 / MS25i2 / CCL258i2 / CCL358i2



(mm)

Safety Precautions

●Please read the user's manual for safe and proper use.
●Do not expose the product to dust, moisture, steam, or oily smoke. It could cause fire, electric shock, or a failure.

Please contact our distributor below with inquiries and orders.

Healthcare Business Operation

JVCKENWOOD Corporation
3-12, Moriya-cho, Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0022, JAPAN
TEL: +81-45-450-1908 FAX: +81-45-450-1926
E mail : medical-display.j@jvckenwood.com

JVCKENWOOD Corporation 3-12, Moriya-cho, Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0022, Japan www.jvckenwood.com/en/ K/HCATE610020A October 2016

TOTOKU

Powered by JVC

Flat Display Systems for Medical Imaging

Higher Image Quality and Total Management

— DICOM Conformance —

model i2

Monochrome

5MP
15MsP

5 Megapixel + Independent Sub pixel Drive technology

MS55i2

MS55i2/AR (Special AR Coating)
MS55i2/F (Protective Filter)
MS55i2/N (No Protective)

21.3" | DisplayPort & DVI-D | 1200 cd/m² | 1200:1 | Calibration function | 16Bit LUT | 10-bit display
LED Backlight | Color/Monochrome Conversion | OSD | Luminance Uniformity Correction | Hardware Pivot | LED Indicator

3MP
9MsP

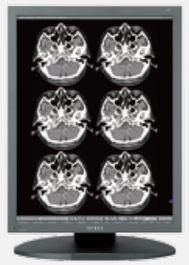
3 Megapixel + Independent Sub pixel Drive technology

MS35i2

MS35i2/AR (Special AR Coating)
MS35i2/F (Protective Filter)
MS35i2/N (No Protective)

21.3" | DisplayPort & DVI-D | 1700 cd/m² | 1400:1 | Calibration function | 16Bit LUT | 10-bit display
LED Backlight | Color/Monochrome Conversion | OSD | Luminance Uniformity Correction | Hardware Pivot | LED Indicator

2MP
6MsP



2 Megapixel + Independent Sub pixel Drive technology

MS25i2

MS25i2/AR (Special AR Coating)
MS25i2/F (Protective Filter)
MS25i2/N (No Protective)

21.3" | DisplayPort & DVI-D | 1900 cd/m² | 1400:1 | Calibration function | 16Bit LUT | 10-bit display
LED Backlight | Color/Monochrome Conversion | OSD | Luminance Uniformity Correction | Hardware Pivot | LED Indicator

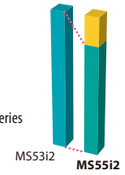
Reliable Quality and Stability

Higher contrast with the new IPS panel

The new IPS panel provides crisper images and more confidence in diagnostic precision.

Longer lifetime and energy saving with LED backlight

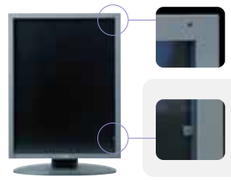
Compaired to the current models, the new MS Series with the LED backlight system saves about 20% energy and will hold brightness longer.



Luminance stabilizing system λ-Sentinel

λ-Sentinel consists of a luminance sensor and a luminance control circuit. The luminance sensor in integrated into the front bezel, directly against the screen, and constantly monitors and accurately stabilizes luminance on the screen surface by sending feedback instantaneously to the control circuit.

- With luminance fluctuation caused by the LCD module taken into account, highly accurate luminance control is achieved.
- Actual luminance measurements including intermediate luminance are taken on the screen surface.

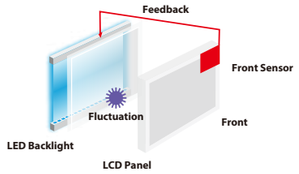


Ambient light sensor

An ambient light sensor is built-in so that calibration appropriate for the effects of ambient luminance is carried out.

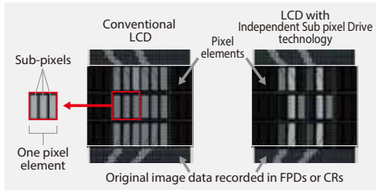
Luminance sensor

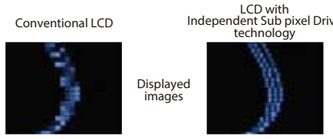
The luminance sensor attached in front of the screen constantly monitors and accurately stabilizes luminance on the screen surface by sending feedback to the control circuit.



Independent Sub pixel Drive technology

Driven by each sub-pixel value corresponding to detailed information recorded in an original image, three times resolution enhancement is achieved.
In addition, up to 1276 shades of gray are now simultaneously displayable by the upgraded Independent Sub pixel Drive technology. (Patent No.8,259,034B2)

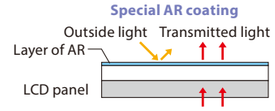




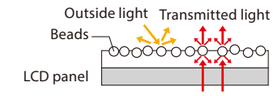
*Customized viewer is required to display images with enhanced resolution by the Independent Sub pixel Drive technology
*Independent Sub pixel Drive technology is built in MS series only

Special AR coating for film-like black and improved sharpness

Special AR coating technology addresses properties of focus, noise reduction, contrast, and viewing angle achieving film-like black and accurate reproduction of images.



The special AR coating reduces diffuse reflection and improves properties of noise, focus, contrast and viewing angle.



Provided beads diffusely reflect the light to reduce background appearance mirrored on the screen. However, transmitted light (Displayed image) is also diffusely reflected causing focus loss and increased noise.

*The images explain general ideas of each mechanism and may be different from the actual structures.

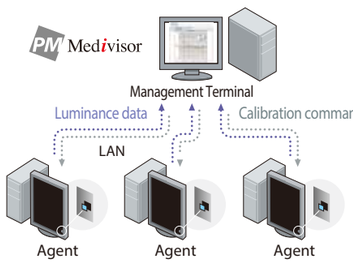
Uniformity equalizer

Is built in to achieve highly accurate luminance and color uniformity across the screen.

* Color uniformity equalizer is built in color models only.
* Images shown are for illustrative purposes only.

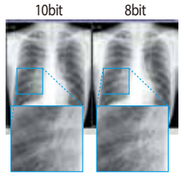
Remote grayscale check and remote calibration functions

DICOM GSDF Conformance testing and calibration can be remotely accomplished. These features minimize the burden on display administrators.



10-bit grayscale with DisplayPort connections

With the monochrome models, 1024 or 10-bit shades of grayscale are simultaneously displayed from a palette of 12,277 grayscale steps. This capability provides doctors with finer and crisper images for them to be more confident in their readings.

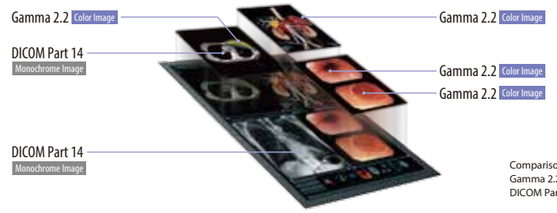


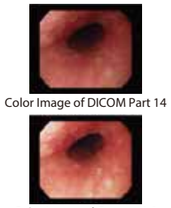
* 10-bit capable viewing software is required.

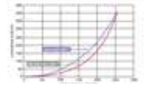
Dynamic Gamma

*CCL358i2 and CCL258i2 model only

Color images are automatically recognized to provide optimized contrast, brightness and gamma.
No user intervention is required.







Comparison between Gamma 2.2 and DICOM Part 14

User-friendly Functions

Auto Text Mode

*CCL358i2 and CCL258i2 model only

Automatic Brightness control for text data to reduce eye strain for patient lists and reporting application.

User-selectable display configurations

Luminance/gamma settings are selectable from three preset levels according to the needs.
User-selectable configurations enable stress free operations without specialized settings.

Luminance: 410cd/m²
Gamma: DICOM GSDF

Luminance: 300cd/m²
Gamma: DICOM GSDF

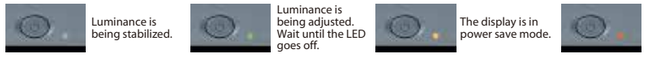
Luminance: 300cd/m²
Gamma: Gamma 2.2

OSD information display

At your fingertips, you can view current display status and information, including actual measurement of luminance, calibration settings, total operating hours as well as model name and serial number.

LED indicator

A glance at the LED indicator tells you the display's current operating status.

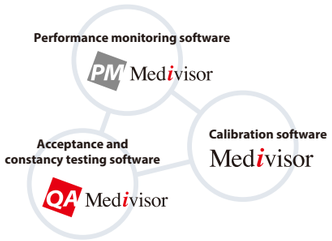


Luminance is being stabilized.
Luminance is being adjusted. Wait until the LED goes off.
The display is in power save mode.
An error is detected.

Display Quality Control

Medivisor® Series
(Optional software)

The Medivisor Series is a series of software to collectively support display quality control from acceptance and periodic constancy testing to constant monitoring, to calibration.



Ecological Technology – Considering the Global Environment

We are committed to providing high performance display systems that are ecological and environmentally friendly. We strive to create green IT initiatives and be a part of building a clean energy future. In effort to achieve this, we have incorporated new power-saving features in our i2 series displays.
Our advanced power saving function dims the backlight as the screensaver activates, thereby reducing power consumption and preventing unnecessary backlight deterioration, resulting in a longer lasting display. Our internal power supply system includes a newly improved power save mode, which allows the display to enter standby mode with less than 2 watts of energy consumption.

*Optional software Calibration Kit is required to set up the Advanced Power Savings feature.

Color

3MP

3 Megapixel 21.3" Color Display

CCL358i2

CCL358i2/AR (Special AR Coating)
CCL358i2/F (Protective Filter)
CCL358i2/N (No Protective)

21.3" | DisplayPort & DVI-D | 800 cd/m² | 1400:1 | Calibration function | 16Bit LUT
Dynamic Gamma | Auto Text Mode | LED Backlight | 10-bit display | OSD | Luminance Uniformity Correction
Hardware Pivot | LED Indicator | Color Front Sensor

2MP

2 Megapixel 21.3" Color Display

CCL258i2

CCL258i2/AR (Special AR Coating)
CCL258i2/F (Protective Filter)
CCL258i2/N (No Protective)

21.3" | DisplayPort & DVI-D | 900 cd/m² | 1400:1 | Calibration function | 16Bit LUT
Dynamic Gamma | Auto Text Mode | LED Backlight | 10-bit display | OSD | Luminance Uniformity Correction
Hardware Pivot | LED Indicator | Color Front Sensor

Worldwide Medical Safety and EMI Standards

TOTOKU medical image displays comply with various stringent worldwide medical standards. They ensure safety and reliability required for use in medical facilities.