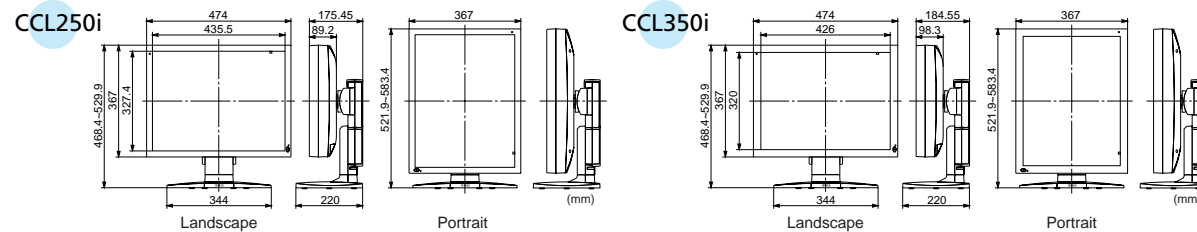


		2 Megapixel	3 Megapixel
Model Name		CCL250i	CCL350i
LCD	Technology	21.3-inch, TFT Color Active matrix	20.8-inch, TFT Color Active matrix
	Display Area	432mm X 324mm	423.9mm X 318.0mm
	Pixel Pitch	0.270mm X 0.270mm	0.207mm X 0.207mm
Visual Performance	Contrast Ratio	450:1 (Typ.)	400:1 (Typ.)
	Maximum Luminance	450cd/m <sup>2</sup> (Typ.), (calibrated to 200cd/m <sup>2</sup> by factory default)	400cd/m <sup>2</sup> (Typ.), (calibrated to 200cd/m <sup>2</sup> by factory default)
	Viewing Angle	170° vertical and horizontal	—
	Available Resolution	USTEXT, 640 X 480 (VGA), 800 X 600 (SVGA), 1024 X 768 (XGA), 1280 X 1024 (SXGA), 1600 X 1200 (UXGA)	USTEXT, 640 X 480 (VGA), 800 X 600 (SVGA), 1024 X 768 (XGA), 2048 X 1536 (QXGA)
Input Signal	Input Sync Signal	DVI 1.0 compliant	—
	Plug-&-Play	DDC2B compliant	—
Input Power Supply	Input	AC adapter 100V ~ 240V±10%, 50/60Hz	—
	Maximum Power Consumption	85W Typical (with power management feature)	83W Typical (with power management feature)
Features	Calibration Control	Luminance, Gamma, Capability of saving 3 sets of LUT settings (The calibration kit is required.)	—
	OSD Information Display	Model name, Serial No., Total operating time, Calibration settings (Operating time from Last Calibration, Luminance, Gamma, etc.), Current luminance, etc.	—
	USB Hub	USB Rev. 2.0 compliant, Bus-powered USB upstream connector (x1), USB downstream connector (x2)	—
Approvals	Other Features	LED indicator	Hardware Pivot, LED indicator
	Medical Safety	UL60601-1, CSA C22.2 N601.1, MDD/CE, FDA510(k)	—
	EMI	FCC-B, VCCI-B, BSMI*, MIC, CCC* (*pending)	—
Physical Characteristics	Dimensions (incl. tilt stand)	Landscape: 474.0 (W) X 468.4 ~ 529.9 (H) X 220.0 (D)mm Portrait: 367.0 (W) X 521.9 ~ 583.4 (H) X 220.0 (D)mm	—
	Weight	Net: approx. 11.6kg, Without tilstand: approx. 7.4kg	Net: approx. 11g, Without tilstand: approx. 6.8kg
	Tilt stand	Tilt, Swivel, Height adjustment, Portrait / Landscape	—
	Mount	100mm VESA mounting	—
	Security Slot	Antitheft security slot (Panel and tilt stand)	—
Accessories	AC adapter, Power cord(3P), DVI cable, Serial cable, USB cable, Utility software, Operation manual	—	



LV Series

Totoku's lineup of PCI Express bus graphics cards enable smooth transfer of images whose size can be expected to grow even bigger in the future. (Optional.)

Model Name	LV22P2	LV22E1	LV32P1	LV32P4	LV32E1	LV32E2
Photo						
Max. resolution	1600 X 1200 Pixels			2048 X 1536 Pixels		
BUS	PCI 32bit(33MHz)	PCI Express X16	PCI 64bit(66MHz)/32bit(33MHz)	32bit(33MHz)	PCI Express X16	PCI Express X16
Outputs	DVI X2 (Use the supplied split cable.)			DVI X2		
Video memory	64MB	64MB	256MB	128MB	128MB	128MB
Operating system	XP/2000/NT 4.0 (SP6)	XP/2000	XP/2000/NT 4.0 (SP6)	XP/2000	XP/2000	XP/2000
Max. power consumption	11.75W	21W	35W	15W	70W	27W
Dimensions	168 X 65mm	168 X 69mm	190 X 107mm	133 X 65mm	198 X 111mm	163 X 112mm
Compatible models	ME251i, CCL250i		ME351i, CCL350i	ME351i, CCL350i, ME251i, CCL250i		

TOTOKU has obtained ISO14001 and ISO9001 certification which are international standards concerning environment management and quality control respectively.



**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.



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Additional product information is available at <http://www.totoku.com/dp/>

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Please contact the distributor below with inquiries and orders.

TOTOKU

Flat Display Systems for Medical Imaging

2 Megapixel Color Display

**CCL250i**  
2 Megapixel

3 Megapixel Color Display

**CCL350i**  
3 Megapixel

Medivisor®

**CCL Series i model**  
Integration of Hardware and Software

C O L O R

*Higher Image Quality & Simpler Maintenance*



- Enhanced luminance stability with  $\lambda$ -Sentinel II
- Easy evaluation of conformity to DICOM GSDF with the use of PM Medivisor
- High luminance, high contrast, and wide viewing angle



## Higher Image Quality & Simpler Maintenance

An ever-increasing attention is being paid to the importance of maintaining display accuracy on medical imaging displays. As a result, more facilities and organizations are now performing the acceptance test upon installation, and the periodical constancy test to monitor display status. Needless to mention that medical displays are expected to offer high display accuracy which they are also required to maintain for long periods of time. Thus, the need for means of monitoring and verifying accuracy is growing.

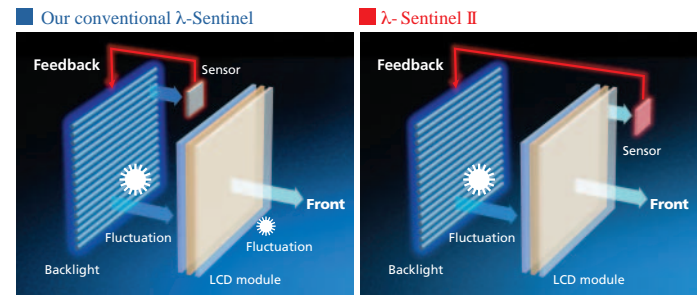
The "CCL Series i models" are the products that meet such demands in combination with luminance stabilizing system  $\lambda$ -Sentinel II and display accuracy monitoring software Medivisor.

### $\lambda$ -Sentinel II Advanced luminance stabilizing system

#### Features

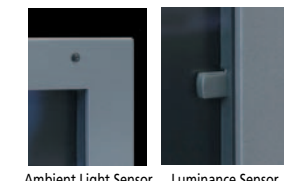
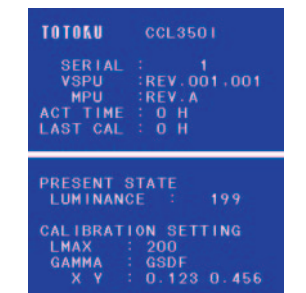
- Intermediate luminance can be measured and in combination with PM Medivisor, conformity to DICOM GSDF can be evaluated.
- The LCD module realizes highly accurate luminance control, taking into account luminance fluctuation.
- The display alone is capable of measuring and showing the current luminance on screen.

$\lambda$ -Sentinel II consists of a luminance sensor and a luminance control circuit. The luminance sensor is placed in front of the panel surface and stabilizes luminance by continuous monitoring, and sending feedback to the control circuit.



#### OSD

Such information as the display model, actual measurement of maximum luminance, and calibration settings can be checked on screen.



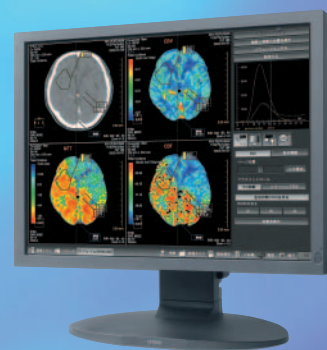
<b>LED indicator</b> The display status can be checked easily.	Luminance is being stabilized.	Luminance is being adjusted. Wait until the LED goes off.	The display is in power save mode.	An error is detected.
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## 2 Megapixel Color Display

High Luminance of 450cd/m<sup>2</sup>  
Large 21.3" LCD

2 Megapixel 21.3" Color LCD

21.3"	Color LCD	Digital	1200 x 1600	450 cd/m <sup>2</sup>
Contrast 450:1	OSD	VESA mounting	Protective filter	



High Luminance

2 Megapixel Color Display

# CCL250i

### Accurate display of diverse medical images

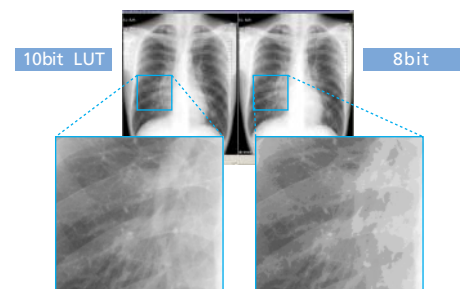
The use of color images, besides radiography, is becoming more common in the medical field. The CCL Series i models carry an advanced technology that can offer a variety of medical images with precision.

#### High luminance, high contrast, & wide viewing angle

TOTOKU's LCD drive technology has successfully brought about a much higher image quality and the best performance in the LCD panel; the world's highest-class luminance, contrast, and broadness of viewing angle. Its wider dynamic range also realizes clear display of grayscale images, which has been the challenge with conventional LCDs.

#### Accurate grayscale images

The built-in 10 bit LUT converts 8 bit data (256 shades of gray) transmitted from a graphics card into a DICOM GSDF-compliant accurate grayscale.



\* The images shown are for illustrative purposes.

### Stress-free operation with fast drawing speed

#### Hardware pivot function

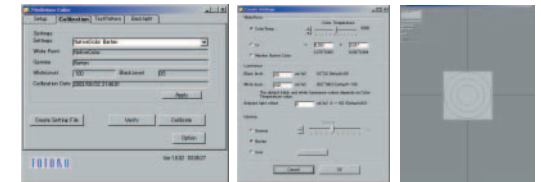
With the hardware pivot function built in, CCL350i is capable of switching to portrait orientation quicker than when using pivot software.

#### High-speed graphics cards

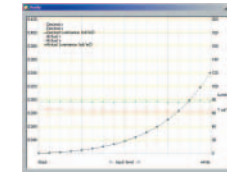
Totoku's lineup of PCI Express bus graphics cards enable smooth transfer of images whose size can be expected to grow even bigger in the future. (Optional.)

### Color Calibration Medivisor Color

Color calibration software Medivisor Color (included in a calibration kit, sold separately) adjusts luminance, color temperature, and gamma. This enables truthful and faithful color reproduction and evens out differences in color and luminance between displays. With easy operation, Medivisor Color lives up to the expectations and requirements of demanding work environments.



**Calibration Procedure**  
Attach the calibration sensor to the panel surface and simply click the start button in the software. Calibration is done in 5 minutes!



**Calibration Results**  
Results are shown both graphically and numerically for easy comparison with the target.

### Reliable products from advanced production lines

Over 30 years of experience in manufacturing displays backs up our confidence in providing reliable and dependable products.

#### Pre-calibrated

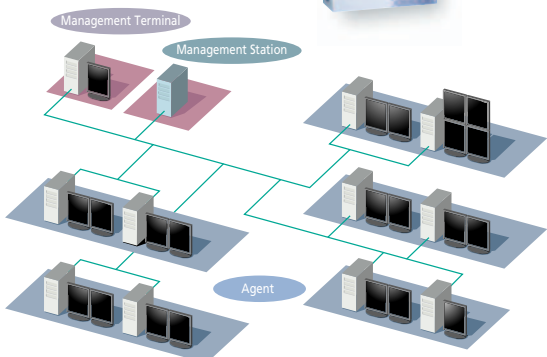
Displays are shipped calibrated to the DICOM GSDF standard and ready for use.

### Certified for worldwide medical safety standards

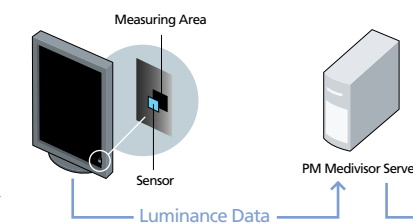


### Display management software Medivisor Series (optional)

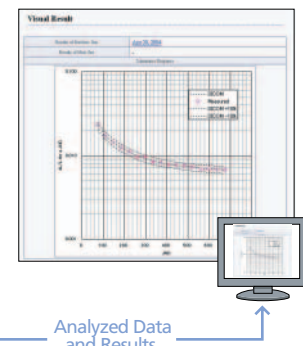
#### Display performance monitoring software



PM Medivisor analyses the luminance data measured by the luminance sensor according to AAPM TG18 to monitor and maintain display accuracy. It also manages calibration scheduling and history for each display on the network, including detailed display information.



- analyzes luminance data according to AAPM TG18 and verifies conformity to DICOM GSDF.
- monitors luminance constantly and notifies the administrator when the current luminance is deviated from the setting or when the display configuration changes.
- reports various notices via e-mail and generates calibration information in PDF format.



**DICOM GSDF**  
Standards for grayscale standard display function on digital images and communications for medical purposes

**AAPM TG18**  
American Association of Physicists in Medicine Assessment of Display Performance for Medical Imaging Systems

#### Software for acceptance and constancy testing



QA Medivisor is designed to perform the acceptance test upon installation and the periodical constancy test to monitor display status. It can also print out the results.

#### Calibration software

### Medivisor Grayscale Medivisor Color

Can adjust luminance and gamma accurately on the supported TOTOKU displays with ease.

Compatible models	Calibration Kit CAL008
	ME251, ME351, ME213L, ME315L, ME511L, CCL350i, CCL250i, CCL212, CCL316, CCL202, CCL182



The calibration kit includes a calibration sensor and software.

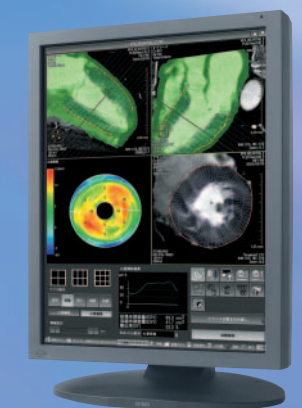


## 3 Megapixel Color Display

High Luminance of 400cd/m<sup>2</sup>  
High-speed operation with the Hardware pivot function

3 Megapixel 20.8" Color LCD

20.8"	Color LCD	Digital	1536 x 2048	400 cd/m <sup>2</sup>
Contrast 400:1	VESA mounting	Hardware Pivot	Protective filter	OSD



High Luminance

3 Megapixel Color Display

# CCL350i