

## PENTA Series Specificaions

AHA Penta model no.	55" LED SMART INTERACTIVE				65" LED SMART INTERACTIVE			
	LED TOUCH(OPTICAL) PENTA-505D	LED TOUCH(IR) PENTA-505R	LED TOUCH(EMR) PENTA-505E	LED TOUCH(DUAL) PENTA-505ED	LED TOUCH(OPTICAL) PENTA-605D	LED TOUCH(IR) PENTA-605R	LED TOUCH(EMR) PENTA-605E	LED TOUCH(DUAL) PENTA-605ED
<b>TOUCH</b>	1209.6(W) x 680.4(H) mm				11428.48(W) x 803.52(H) mm			
Detect area								
Detection method	Optical image sensing	Infrared blocking	Electromagnetic Resonance	Dual Touch #1, #2 #1 : Optical image sensing #2 : Electromagnetic resonance	Optical image sensing	Infrared blocking	Electromagnetic Resonance	Dual Touch #1, #2 #1 : Optical image sensing #2 : Electromagnetic resonance
Touch tool	Hand or other solid object	Hand or other solid object	Electromagnetic pen	#1 : Hand or other solid object #2 : Electromagnetic pen	Hand or other solid object	Hand or other solid object	Electromagnetic pen	#1 : Hand or other solid object #2 : Electromagnetic pen
Accuracy	±2mm	±2mm	±0.5mm / >256dpi	#1 : ±2mm #2 : ±0.5mm / >256dpi	±2mm	±2mm	±0.5mm / >256dpi	#1 : ±2mm #2 : ±0.5mm / >256dpi
Response time	<8ms	<12ms	<5 ms	#1 : <8ms #2 : <5 ms	<8ms	<12ms	<5 ms	#1 : <8ms #2 : <5 ms
PC connector	USB				USB			
Range of pen pressure	-	-	1024 for full level	1024 for full level	-	-	1024 for full level	1024 for full level
Operating Systems	Windows XP / Vista / Windows 8 / MAC				Windows XP / Vista / Windows 8 / MAC			
<b>LED PANEL</b>								
Diagonal size	54.64"/138.8(cm)				65"/165(cm)			
Brightness (average)	300 cd / m <sup>2</sup>				450 cd / m <sup>2</sup>			
Contrast ratio	1400:1 (Typ.)				4000:1 (Typ.)			
Viewing Angle	H: 178° / V: 178° (CR>=10)				H: 178° / V: 178° (CR>=10)			
Response Time	6 ms (GTG)				8 ms (GTG)			
Supported Colours	16.7M Colors				1.07B Colors			
Display Resolution	1920 x 1080				1920 x 1080			
Recommended resolution	1920 x 1080 60 Hz				1920 x 1080 120 Hz			
Display Frame Rate	60 Hz				120 Hz			
<b>SIGNAL COMPATIBILITY / CONNECTIVITY</b>								
Connector	DisplayPort, HDMIx3, VGA							
Audio Out	Line Out							
Communication Port (TransportProtocol)	RS-232C D-sub 9-pin							
<b>MECHANICAL</b>								
Dimensions Landscape	1335.5(W)x850(H)x100(D)				1567(W) x 949(H) x 103(D)			
Weight	56 kg				78 kg			
VESA mount	600 x 400 mm				600 x 400 mm			
Cooling	Fanless				YES			
<b>ELECTRICAL</b>								
Power supply	100 - 240V AC, 50/60 Hz				100 - 240V AC, 50/60 Hz			
Normal Operation	140W				256 W			
Standby	<1W				<1W			
Speaker	10W + 10W Stereo (8-ohms)				10W + 10W Stereo (8-ohms)			
<b>ENVIRONMENTAL</b>								
Operating temperature	0 ~ 35°C, 20% to 80% RH (no condensation)							
Storage temperature	- 20 ~ 60° C							
<b>OSD FUNCTIONS</b>								
OSD Control Function	RS232C, IR Remote controller							
OSD Language Function	English / Dutch / French / German / Turkish / Russian / Polish / Danish / Swedish / Norwegian / Daish / Turkish / Polski / Hungarian / Chesky / Suomi							
OSD Key Lock Function	YES							
<b>Dimensions</b>								
Basic color : Glossy white, Matt black								
Optional								
Pen tray	AHA-P300  Basic use (3 button hot keys)				AHA-P400  Supports Eupen Pro (7 button hot keys)			

\* Only 84" Series have the OPS (Open pluggable Specifications) input as optional  
 \* Best value of input , output terminal (in common 55" ~84")



Products listed in this brochure are based on January 2013, and design, model and specification can be subject to change

## PENTA Series Series Specifications

AHA Penta model no.	70" LED SMART INTERACTIVE				84" LED SMART INTERACTIVE			
	LED TOUCH(OPTICAL) PENTA-700D	LED TOUCH(IR) PENTA-700R	LED TOUCH(EMR) PENTA-700E	LED TOUCH(DUAL) PENTA-700ED	LED TOUCH(OPTICAL) PENTA-8440D	LED TOUCH(IR) PENTA-8440R	LED TOUCH(EMR) PENTA-8440E	LED TOUCH(DUAL) PENTA-8440ED
<b>TOUCH</b>	1549.44(W) x 871.56(H) mm				1860.48(W) x 1046.52(H) mm			
Detect area								
Detection method	Optical image sensing	Infrared blocking	Electromagnetic Resonance	Dual Touch #1, #2 #1 : Optical image sensing #2 : Electromagnetic resonance	Optical image sensing	Infrared blocking	Electromagnetic Resonance	Dual Touch #1, #2 #1 : Optical image sensing #2 : Electromagnetic resonance
Touch tool	Hand or other solid object	Hand or other solid object	Electromagnetic pen	#1 : Hand or other solid object #2 : Electromagnetic pen	Hand or other solid object	Hand or other solid object	Electromagnetic pen	#1 : Hand or other solid object #2 : Electromagnetic pen
Accuracy	±2mm	±2mm	±0.5mm / >256dpi	#1 : ±2mm #2 : ±0.5mm / >256dpi	±2mm	±2mm	±0.5mm / >256dpi	#1 : ±2mm #2 : ±0.5mm / >256dpi
Response time	<8ms	<12ms	<5 ms	#1 : <8ms #2 : <5 ms	<8ms	<12ms	<5 ms	#1 : <8ms #2 : <5 ms
PC connector	USB				USB			
Range of pen pressure	-	-	1024 for full level	1024 for full level	-	-	1024 for full level	1024 for full level
Operating Systems	Windows XP / Vista / Windows 8 / MAC				Windows XP / Vista / Windows 8 / MAC			
<b>LED PANEL</b>								
Diagonal size	70"/177.8(cm)				84.04"/213.5(cm)			
Brightness (average)	400 cd / m <sup>2</sup>				350 cd / m <sup>2</sup>			
Contrast ratio	4000:1 (Typ.)				1600:1 (Typ.)			
Viewing Angle	H: 178° / V: 178° (CR>=10)				H: 178° / V: 178° (CR>=10)			
Response Time	8 ms (GTG)				5 ms (GTG)			
Supported Colours	16.7M Colors				10bit(D), 1.06 Billion colors			
Display Resolution	1920 x 1080				QWUXGA (3,840 x 2,160)			
Recommended resolution	1920 x 1080 60 Hz				1920 x 1080 120 Hz (SET)			
Display Frame Rate	60 Hz				120 Hz			
<b>SIGNAL COMPATIBILITY / CONNECTIVITY</b>								
Connector	DisplayPort, HDMIx3, VGA							
Audio Out	Line Out							
Communication Port (TransportProtocol)	RS-232C D-sub 9-pin							
<b>MECHANICAL</b>								
Dimensions Landscape	1663(W) x 985(H) x 103(D)				1974(W) x 1160(H) x 103(D)			
Weight	85 kg				95 kg			
VESA mount	600 mm x 400 mm				600 mm x 400 mm			
Fanless Design	YES				YES			
<b>ELECTRICAL</b>								
Power supply	100 - 240V AC, 50/60 Hz				100 - 240V AC, 50/60 Hz			
Normal Operation	285 W				430W			
Standby	<1W				<1W			
Speaker	10W + 10W Stereo (8-ohms)				10W + 10W Stereo (8-ohms)			
<b>ENVIRONMENTAL</b>								
Operating temperature	0 ~ 35°C, 20% to 80% RH (no condensation)							
Storage temperature	- 20 ~ 60° C							
<b>OSD FUNCTIONS</b>								
OSD Control Function	RS232C, IR Remote controller							
OSD Language Function	English / Dutch / French / German / Turkish / Russian / Polish / Danish / Swedish / Norwegian / Daish / Turkish / Polski / Hungarian / Chesky / Suomi							
OSD Key Lock Function	YES							
<b>Dimensions</b>								
Basic color : Glossy white, Matt black								
Optional								
Mounting equipment	AB-900  Supports up to 90inch				AF-700(>70") AF-650(<65")  1 Pair			

Headquarters and 1st Factory : 3011, Hakwoon-ri Yangchon-myeon, Gimpo-si, Gyeonggi-do, 415-843, Korea  
 2nd Factory : #3043, Hakwoon-ri Yangchon-myeon, Gimpo-si, Gyeonggi-do, 415-843, Korea  
 3rd Factory : #2979 Ki-dong Techno-Zone, Hakwoon-ri Yangchon-myeon, Gimpo-si, Gyeonggi-do, 415-843, Korea  
 China Factory : No. 19, Dingwangqi Road, Sanzao Town, Jinwan District, Zhuhai, China  
 Kazakhstan Factory : Site 1383, registration quarter 028, Village Doskey, Bukhar-Zhyray area, Karagandy region, Kazakhstan

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# Interactive LED

The Optimal Interactive Display for Presentations and Lectures

## PENTA BOARD® 84" / 70" / 65" / 55"



| 84" Provides the best readability | Power consumption reduced by half | 4 Point multi-touch |  
 | Optimal brightness | Anti-Glare tempered glass |



## The new standard of interactive display – AHA Interactive LED

The era of LED: low power consumption, slim design and high quality.  
Various contents are compatible.



Thin, slim bezel design



Front side OSD key



OPS mounting



Pen tray with built-in Hot Keys (Optional)



Pen Tray Hot Keys

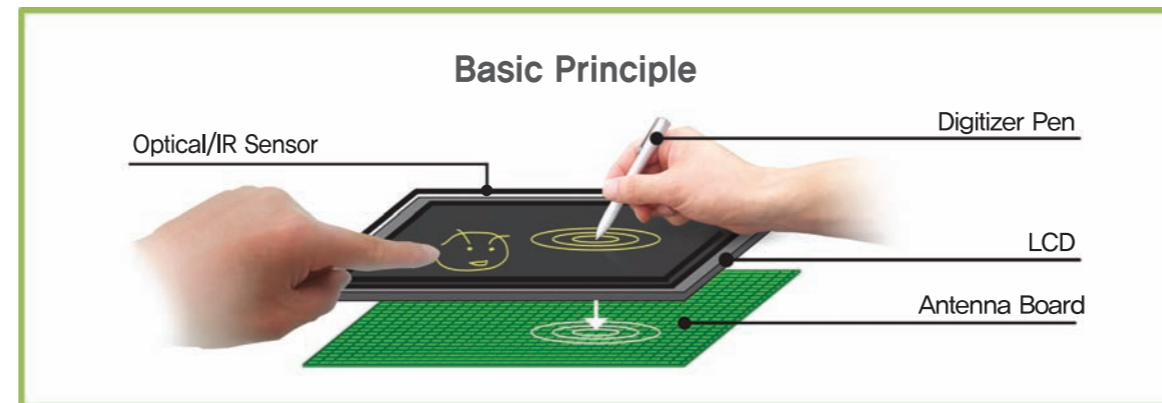


## PENTA BOARD



## PENTA Series – Dual Sensing

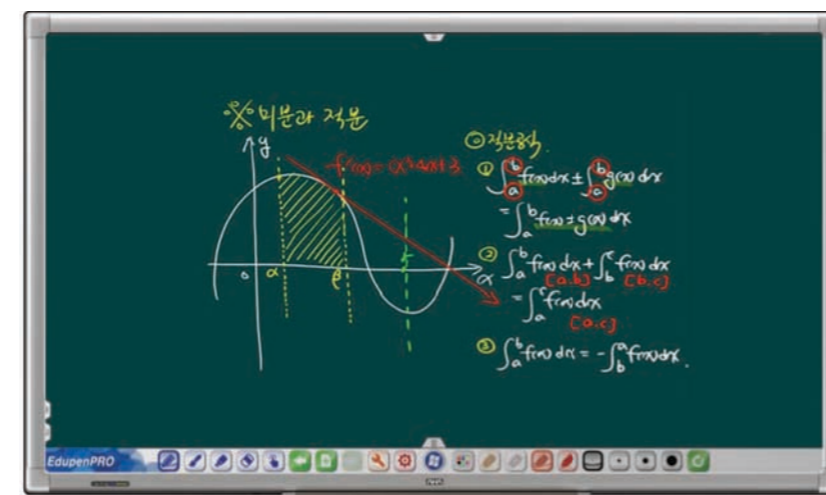
### Combined Touch Technologies –Optical/IR + EMR (Electromagnetic Resonance)



AHA's Dual Sensing Series combines the benefits of two technologies. By combining IR or Optical detection with an additional EMR sensor, we created an interactive display that offers the best in performance and versatility. The Dual Sensing Series allows you to interact with your display using a wider range of methods and techniques.

### What are EMR's benefits?

- EMR involves a digitizer pen serving as a transmitter and an antenna board acting as a receiver. If the pen is brought near the screen, a change in magnetic flux occurs in the board. The change is registered as the coordinates of a touch event.
- It's possible for the system to detect touch pressure.
- Palm-Rejection: Optical/IR sensors are disengaged once the pen is brought to the screen. There is no conflict between the two systems.
- Extremely accurate and fast touch response.

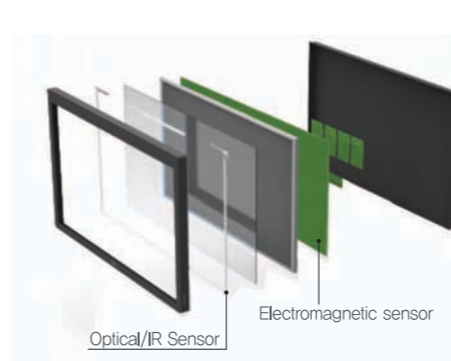
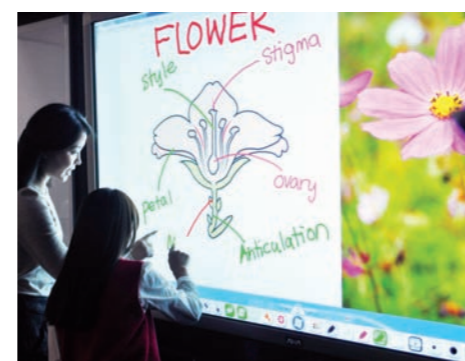


When teaching math or science, symbols, equations and diagrams require very precise handwriting. Electromagnetic sensing allows the user to make the most detailed touch.



Electromagnetic sensing also detects pressure. This is beneficial when using art and design applications or other software that can utilize pressure inputs.

Write comfortably in a natural writing position. Rest your hand or arm on the screen without worrying about effecting the Optical/IR sensors.

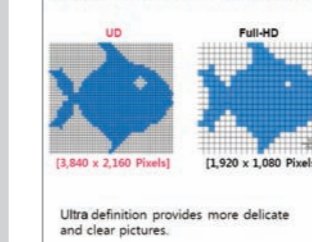


## Arisu Series – 84" 2D Monitor/2D Digitizer/3D Monitor



Model No.	84" LED Monitor		
	2D Monitor Arisu-8440	2D EMR Monitor Arisu-8440E	3D Monitor Arisu-3D8440D
Diagonal size	84.04"/213.5(cm)		
Brightness (average)	350 cd/m <sup>2</sup>	2D: 420cd/m <sup>2</sup> 3D: 158cd/m <sup>2</sup>	
Contrast ratio	1600:1 (Typ.)		
Viewing Angle	H: 178° / V: 178° (CR>=10)		
Panel Resolution	UHD 3,840 x 2,160		
Touch detection	N/A	Electromagnetic Resonance	N/A
Touch tool	N/A	EMR pen	N/A

New Generation UD panel apply  
Adopted 4times more than HD  
Ultra Definition = Full HD (x4)



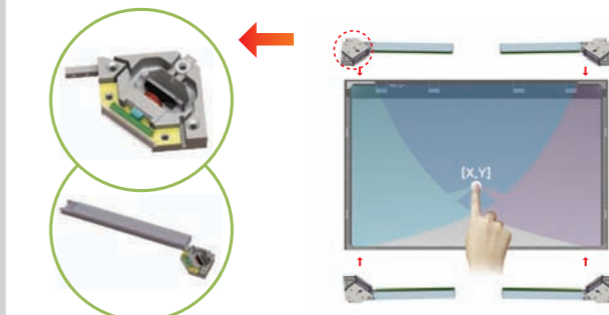
AHA Arisu 84" monitors offer the highest picture resolution on the market. The "UHD" images you display are 4 times the resolution of standard high definition.

The 84" size is available with touch sensing capabilities or without. If you prefer touch, Electromagnetic(EMR) sensing is available. Utilizing passive technology it is possible to provide each user with a pair of 3D glasses without a significant investment.

Applications : CCTV Monitor / Conference room / Situation room / Studio / Lobby  
Public facilities / Station / Hospital / Shop etc.

## PENTA Series – Optical and Infrared Touch Sensing

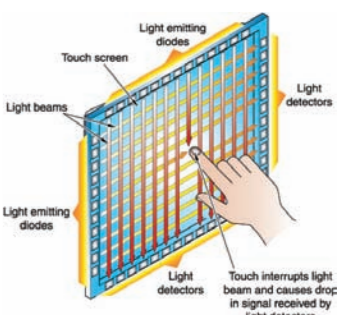
### Optical Image Touch Sensor Technology



#### Benefits of Optical Detection :

- Detects up to 4 points of static touch.
- Can detect gestures and writing from 2 users at the same time.
- Can detect input from any object.
- Fast response time.
- Competitive pricing.

### IR (Infrared Touch)



#### Benefits of IR Detection :

- Detects up to 4 points of static or dynamic touch.
- Can detect gestures and writing from 2 users at the same time.
- Can detect input from any object.
- Fast response time.
- Sturdy and reliable structure.

### Screen Size Readability Test Results

Distance from Display	Screen Viewers	55"	65"	70"	82"	84"
4.5M	Below 10	100	100	100	100	100
5.3M	Below 20	72	96	100	100	100
6.0M	30 or more	12	58	97	100	100
6.7M	35 or more	3	22	45	100	100
7.5M	40 or more	0	4	16	92	100

### Distance to the display according to various screen sizes

