



INFORMATION TECHNOLOGY HARDWARE SPECIFICATIONS

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DESKTOP COMPUTER

ITEM	REQUIREMENT
Processor & Core Logic	Dual Core Processor 2.3 GHZ, 2MB shared Cache or Higher
System Memory	Standards 4GB, Upgradeable to at least 8 GB
Storage Subsystem	At least 250GB 7200 rpm SATA 3.0
Form Factor	Optional
Display/Graphics	17" TFT Flat panel Color LCD, Same brand as CPU Resolution 1024x768.
Optical Drives	16X DVD+/-RW
Keyboard and Pointing Device	Enhanced keyboard 2 Button Scroll mouse
Audio	Stereo audio system with In Built speakers
Communication interface	Gigabit Ethernet 56K ITU V.90 data/fax modem, wake-on-ring ready
I/O interface ports	1 x PS/2 compatible keyboard or USB
1 x PS/2 compatible mouse or USB	
Front and rear USB Ports	
1Xrj45 jack for Ethernet	
1 x External VGA Port	
Operating System	MS Windows ® 7 down-gradable to XP Professional licensed with CDs
Software	Latest Version, MS Office 2010 licensed with CDs Latest Version of anti-virus with licensed CDs
Power supply	220 – 240 VAC , 50/60 Hz
Warranty	One (1) Year
Original detailed and highlighted Brochures MUST be submitted	



RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

LAPTOP/NOTE BOOK COMPUTER

ITEM	REQUIREMENT
Processor & Core Logic	Dual Core Processor 2.3 GHZ, 2MB shared Cache or Higher
System Memory	Standard 4 GB, Upgradeable to at least 8GB
Display	13.3 – 15.6 inch diagonal LED-backlit HD anti-glare (1366 x 768)
Storage Subsystem	At least 320GB 7200 rpm SATA 3.0
Optical Drives	16X DVD+/-RW
Keyboard and Pointing Device	Enhanced keyboard 2 Button Scroll mouse
Audio	Stereo audio system
Communication interface	Gigabit Ethernet
I/O interface ports	1 x PS/2 compatible keyboard or USB
	1 x PS/2 compatible mouse or USB
	1Xrj45 jack for Ethernet
	1 x External VGA Port
Operating System	MS Windows ® 7 down-gradable to Windows XP
Software	Latest Version, MS Office 2010 licensed with CDs Latest Version of anti-virus with licensed CDs
Webcam	1.3MP or More HD with dual array digital microphones
Connectivity	Mini Display Port (1),
	At least 2 USB 3.0
	1 USB 2.0 (eSATA/powershare combo)
	Wireless LAN Type IEEE 802.11b/g/n*7
	Bluetooth® 3.0
	HDMI 1.4
	Audio jacks: headphone 1, 1 Mic-in
Media Card Reader	MMC, SD, xD, MS, MS Pro, MS Duo, MS Pro Duo
Weight	1.87 Kgs – 3.0Kgs
Service & Support	At least 1 Year service warranty on parts
Carry Case	Sufficient Padding for Protection
Power supply	220 – 240 VAC , 50/60 Hz
Warranty	One (1) Year manufacturer Warranty
Original detailed and highlighted Brochures MUST be submitted	



IT HARDWARE SPECIFICATIONS

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

TABLET PERSONAL COMPUTERS

ITEM	REQUIREMENT
Display	9.7-inch (diagonal) LED-backlit Multi-Touch display with IPS technology ,2048-by-1536 resolution at 264 pixels per inch (ppi) ,Fingerprint-resistant oleo phobic coating
Chip	Dual-core
Cameras	Front and back with Front camera calling
Video recording	1080p HD video recording
Cellular + Wi-Fi	3G and LTE
Connectivity	Wi-Fi & personal hotspot
Sim card	Micro SIM
Connector	USB cable charger
privacy screen protector	Quad laminar polyester material
leather smart cover	Black
Storage	128 GB
30-pin to VGA adapter	30-pin to VGA adapter
16 GB Flash drive with USB and 30 pin connector	16 GB Flash drive with USB and 30 pin connector
Power supply	USB power adapter
Pre-installed applications	Spreadsheet, Pdf RW, word processor,etc
Speech and Voice dictation	Speech and Voice dictation
Warranty	One (1) Year
Original detailed and highlighted Brochures MUST be submitted	



**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
MAC LAPTOP COMPUTER**

ITEM	REQUIREMENT
Processor & data bus	Dual core processor with 2.53GHz 3MB shared L3 cache; 1066MHz –data Bus
System Memory	Standard 4GB, Upgradeable to 8 GB DDR3 SDRAM –1066MHz
Storage Subsystem	250GB – serial ATA–5400rpm hard drive, 16X DVD+/-RW
Power System	Power management standard to support standby and Hibernation power saving modes 60Wh battery pack, 4 hours Batter life
Display/Graphics	15.4” TFT Colour LCD, LCD display at 1440 x 900 GDDR3 SDRAM 254MB
Keyboard and Pointing Device	84/85/88 Key, Built-in pointing device, 12 function keys, 4 cursor keys Embedded numeric pad
Audio	PCI 3D audio system, sound card, Built in Microphone 2 external speakers same brand as laptop
Communication interface	Gigabit Ethernet, RJ 45 jack, Wireless-LAN
I/O interface ports	1 x audio –SPDIF Input
1 X Audio – SPDIF output	
1 x 9 Pin Serial Port	
1 x 25 Pin Parallel Port	
4 x USB Port	
1 x External VGA Port	
Operating System	Apple Mac OS X v10.7
Accessories	Carry Case, Mouse
Warranty	One (1) Year
Original detailed and highlighted Brochures MUST be submitted	



**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
MAC DESKTOP COMPUTER**

ITEM	REQUIREMENT
Processor & data bus	Dual Core processor 2.53GHz with 3MB shared L3 cache; 1066MHz –data Bus
System Memory	Standard 2GB, Upgradeable to 8 GB DDR3 SDRAM –1066MHz
Storage Subsystem	300GB – serial ATA–5400rpm hard drive, 16X DVD+/-RW
Power System	Power management standard to support standby and Hibernation power saving modes 60Wh battery pack, 4 hours Batter life
Display/Graphics	15.4” TFT Colour LCD, LCD display at 1440 x 900 GDDR3 SDRAM 254MB
Keyboard and Pointing Device	84/85/88 Key, Built-in pointing device, 12 function keys, 4 cursor keys Embedded numeric pad
Audio	PCI 3D audio system, sound card, Built in Microphone 2 external speakers same brand as laptop
Communication interface	Gigabit Ethernet, RJ 45 jack, Wireless-LAN
I/O interface ports	1 x audio –SPDIF Input
1 X Audio – SPDIF output	
1 x 9 Pin Serial Port	
1 x 25 Pin Parallel Port	
4 x USB Port	
1 x External VGA Port	
Operating System	Apple Mac OS X v10.7
Accessories	Carry Case, Mouse
Warranty	One (1) Year
Original detailed and highlighted Brochures MUST be submitted	



RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

WALL MOUNTED LCD PROJECTOR

ITEM	REQUIREMENT
Resolution	XVGA (1024x768) pixel
Display	Poly-Silicon TFTx3 with micro lens array
Brightness	3000 ANSI Lumens
Contrast Ratio	500:1
Video signals	NTSC, PAL, SECAM
Input Signal Format	Video: NTSC, SECAM, SVGA, RGB: VGA, SVGA, And XVGA.
Output Terminal	1xRGB, 1x Audio, Pc control, Screen control, 1xS-video
Audio	2x2.5 Watt Stereo
Aspect Ratio	4:3
Zoom / Focus	Digital zoom
No. of Colours	16.7 million
Lens	Powered Zoom and Focus
Image Size	100cm-700cm-diagonal
Connectivity	802.11b/g wireless
100/1000 Base-TX	
USB	
PCMCIA	
Lamp	270 watt, 1500hours
Accessories	Lens Cap, carry case, Computer VGA cable, product documentation set
Remote control	Wireless remote for projector with pointer, source selection power, resize, mouse functions, volume, preset
Power supply	220-240v, 50/60HZ
Warranty	At least 1Year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

PORTABLE LCD PROJECTOR

ITEM	REQUIREMENT
Display Technology	3LCD
Max number of colors	16.7 Million
Projector Brightness	At least 2500 ANSI Lumens
Resolution	At least 800X600 Pixels
Supported Resolution	Upto SXGA
Contrast Ratio	2000:1
Projection Lamp	170W UHE-E-TORL
Zoom / Focus	Digital zoom



Throw ratio	1.45-1.96:1
Aspect ratio	4:3
Locking Type	Adjustable Tripod stand screen at least (2032mm*1524mm)
Rated power supply	120-240 AC, 50/ 60 Hz (Auto voltage)
Accessories	Premium carrying case, Installation CDs & manuals
Warranty	One (1) year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

LASERJET PRINTER

ITEM	REQUIREMENT
Print Quality	1200 x 1200 dpi
Print Speed and throughput	Up to 45ppm black
Print technology	Laser black
Memory	80MB or higher, expandable
Memory slots	2 x100 –pin DDR DIMM
Processor Speed	At least 540Mhz
First page out	Less than 8 sec
Languages	PCL 5e,PCL 6, Postscript 3 emulation
Media Capacity	100 multipurpose tray 500-sheet input trays
1 manual feeding tray including envelopes, labels, transparencies and special media Output tray up to 300 sheets	
Media Sizes	Letter,legal,executive,A4and A3
Media types	Plain paper, envelopes, transparencies, copier, bond (60 to 200 g/m2)
Duplex printing	Automatic (standard)
Connectivity	IEEE-1284 compliant bi-directional parallel port and/or Universal Serial Bus (USB), Gigabit Ethernet
RJ 45 Ethernet port	
Hard disk	20Gb
Duty cycle	200,000 per month
Network	Yes (Standard)
Compatibility	Smart switch printer language sensing
Linux compatible standard	
PCL XL emulation standard	
Software	Drivers for windows server 2003/2008/2010, Windows XP/Vista/2007/8
Warranty	One year
Original detailed and highlighted Brochures MUST be submitted	



**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
COLOR LASERJET PRINTER**

ITEM	REQUIREMENT
Print speed, black (best quality mode)	31ppm
Print speed, black (normal quality mode)	31 ppm
First page out (black)	As fast as 10 sec
First page out (color)	As fast as 10 sec
Monthly duty cycle	Up to 100,000 pages
Print resolution, black	Up to 600 x 600 dpi
Print resolution, color	Up to 600 x 600 dpi
Ink cartridges	4 (1 each black, cyan, magenta, yellow); all pre-installed
Paper tray(s), minimum	3
Memory	256MB
Duplex Printing	Automatic
Processor speed	At least 533MHz
Print languages, standard	PCL 6, PCL 5c, postscript level 3 emulation
Maximum Input capacity	Up to 1100 sheets
Connectivity	High Speed USB 2.0 , Gigabit Ethernet
Two enhanced input/output (EIO slots)	
Gigabit Ethernet Print Server	
Compatible operating systems	Macintosh, Windows 2000; Windows XP Home; Windows XP Professional ;Windows 7 and 8 Windows Vista(R); Windows Server 2003 (32/64 bit); Mac OS X v 10.2 or higher; Linux
Software included	Print drivers and installation software on CD-ROM, PCL6, PostScript Level 3 emulation
Warranty	One (1) Year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

PRODUCTION SCANNER

ITEM	REQUIREMENTS
Recommended Daily Volume	Unlimited
Throughput Speeds*	Up to 200 pages per minute/800 images per minute (Throughput speeds may vary depending on your choice of driver, application software, operating system and PC.) *(200 dpi landscape, letter-size document)
Scanning Technology	Dual Tricolor Plus CCD; Grayscale output bit depth is 256 levels (8-bit); Color capture bit depth is 40-bit (10 bits per red, green, blue and black channels); Color



	output bit depth is 24-bit
Optical resolution	300 dpi
Illumination	Dual Xenon lamps per side, mercury-free
Output resolution	Black and white: 200/240/300/400 dpi; Color/grayscale: 100/150/200/240/300 dpi
Maximum Document Size	305 mm x 863 mm (12 in. x 34 in.)
Minimum Document Size	64 mm x 64 mm (2.5 in. x 2.5 in.)
Paper Thickness and Weight	With standard feeder: 45 g/m ² (12 lb) bond to 200 g/m ² (110lb) index; With ultra-lightweight feeder: 25 g/m ² (7 lb) rice paper to 75 g/m ² (20 lb) bond
Feeder	500-sheet
Multi-feed Detection	Multi-feed detection with ultrasonic technology; three ultrasonic sensors that can work together or independently
Connectivity	IEEE-1394 (FireWire) interface, 6-pin connector; IEEE-1394 card and cable included
Interface Support	TWAIN and ISIS Drivers (included); KODAK Capture Software
Color Touch Screen Control	Operator control via color LCD touch screen
Ergonomic Height Adjustment	Integrated height adjustment span of 25 cm (10 in.) for seated or standing operation
Imaging Features	Perfect Page Scanning, i Thresholding, auto crop, aggressive crop, deskew, image rotation, electronic color dropout, dual stream scanning, halftone removal, noise removal, zone processing, toggle patch, automatic color detection, automatic orientation
On-board Compression	CCITT Group IV, JPEG or uncompressed output
File Format Outputs	JPEG (for color and grayscale images); TIFF (for black and white images)
Image Address	Multi-level indexing/batching capabilities
Patch Readers	Four permanently mounted patch readers that can work together or independently
Imprinting	Front pre-scan or rear post-scan imprinting; optional hi-res imprinter available
Electrical Requirements	100-130 VAC, 50/60 Hz, 7 A; 200-240 VAC, 50/60 Hz, 3.5 A
Minimum PC Configuration	Pentium 4 2.4 GHz processor with 512 MB RAM
Supported Operating Systems	WINDOWS XP Pro (32bit only) WINDOWS Vista (32 and 64 bit) WINDOWS 7 (32 and 64 bit)
Original detailed and highlighted Brochures MUST be submitted	



RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DEPARTMENTAL SCANNER

ITEM	REQUIREMENTS
Recommended Daily Volume	Up to 9,000 pages per day
Throughput Speeds*	Up to 45 pages per minute/90 images per minute *(200 dpi, landscape, letter size, black and white/grayscale/color)
Scanning Technology	dual CCD Grayscale output bit depth is 256 levels (8-bit) Color capture bit depth is 48 bits (16 x 3) Color output bit depth is 24 bits (8 x 3)
Output resolution	75, 100, 150, 200, 240, 300, 400, 600 and 1200 dpi
Maximum Document Size	297 mm x 863 mm (11.7 in. x 34 in.)
Minimum Document Size	64 mm x 89 mm (2.5 in. x 3.5 in.)
Paper Thickness and Weight	34–413 g/m ² (9–110 lb.) paper
Feeder	Up to 150 sheets of 60 g/m ² (16 lb.) paper
Multi-feed Detection	With ultrasonic technology
Connectivity	USB 2.0, Gigabit Ethernet
Bundled Software	TWAIN, ISIS, SANE and Windows Imaging Architecture Drivers, KODAK Capture Desktop Software and Smart Touch
Imaging Features	Perfect Page Scanning; Thresholding; adaptive threshold processing; deskew; auto crop; relative cropping; aggressive cropping; electronic color dropout; dual stream scanning; interactive color, brightness and contrast adjustment; automatic orientation, automatic color detection, background color smoothing
File Format Outputs	Single and multi-page TIFF, JPEG, RTF, PDF, searchable PDF
Accessories	KODAK Imaging Guide Wiper Accessory Optional A4 black imaging background accessory
Electrical Requirements	100-240 V (International); 50/60 Hz; universal power supply included
Recommended PC Configuration	For documents up to 356 mm (14 in.) long at 400 dpi: Dual core, 3.2 GHz processor, 2GB RAM; For documents up to 660 mm (26 in.) long at 400 dpi: Dual Core, 3.2 GHz processor, 2 GB RAM; For longer documents/higher resolutions: Dual core, 3.2 GHz processor, 4 GB RAM
Supported Operating Systems	Windows 7 (32-bit and 64-bit) Windows XP SP2 (32-bit) Windows XP x64 Edition SP2 Windows 2000 Professional SP4 Windows Vista SP1 (32-bit and 64-bit) Windows 2003 Server x64 Edition LINUX Ubuntu 6.06,



	Fedora 8, and SUSE 10.1
Consumables Available	Feed module, separation module, feed rollers, roller cleaning pads, Staticide Wipes, image guides, pre-separation pad
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

WORKGROUP SCANNER

ITEM	REQUIREMENTS
Recommended Daily Volume	Up to 3,000 pages per day
Scanning Technology	Single CCD; i1220 Plus: Dual CCD; Grayscale output bit depth is 256 levels (8 bits); Color capture bit depth is 48 bits (16 x 3); Color output bit depth is 24 bits (8 x 3)
Throughput Speeds (portrait, letter size)	Bitonal/grayscale: Up to 45 pages per minute at 200 dpi Color: Up to 30 pages per minute at 200 dpi and 300 dpi (Throughput speeds may vary depending on your choice of driver, application software, operating system and PC.)
Optical resolution	600 dpi (1200 dpi A4 flatbed accessory)
Illumination	Dual fluorescent (cold cathode)
Output resolution	75, 100, 150, 200, 240, 300, 400, 600 and 1200 dpi
Max./Min. Document Size	215 mm x 863 mm (8.5 in. x 34 in.)/50 mm x 63.5 mm (2 in. x 2.5 in.)
Paper Thickness and Weight	34-413 g/m ² (9-110 lb.) paper; ID card thickness: up to 1.25 mm (0.05 in.)
Feeder	Up to 75 sheets of 75 g/m ² (20 lb.) paper Handles small documents, such as ID cards, embossed cards and insurance cards
Multi-feed Detection	With ultrasonic technology
Connectivity	USB 2.0 (cable included)
Bundled Software	TWAIN, ISIS, WIA Drivers; KODAK Capture Desktop Software, Smart Touch; Nuance ScanSoft PaperPort and OmniPage.
Imaging Features	Perfect Page Scanning; iThresholding; adaptive threshold processing; deskew; autocrop; relative cropping; aggressive cropping; electronic color dropout; dual stream scanning; interactive color, brightness and contrast adjustment; automatic orientation; automatic color detection; background color smoothing; image edge fill; image merge;



	content based blank page detection; streak filtering; image hole fill; sharpness filter
File Format Outputs	Single and multi-page TIFF, JPEG, RTF, BMP, PDF, searchable PDF
Recommended PC Configuration	For documents up to 660 mm (26 in.) long at 400 dpi: Duo Core Processor with 2 GHz or equivalent and 2 GB RAM. For longer documents/higher resolutions: Duo Core Processor or equivalent with 2 GHz and 4 GB RAM. Note: for optimal performance when using a PC running the Windows 7 operating system, at least 3 GB RAM is recommended.
Supported Operating Systems	Windows XP SP2 and SP3 (32-bit), Windows XP x64 edition SP2, Windows Vista SP1 (32-bit and 64-bit), Windows 7 (32-bit and 64-bit), Windows 2003 Server and 2008 Server x64 Editions, Linux Ubuntu 8.04, Fedora 9, SUSE 11
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

SMALL OFFICE PHOTOCOPIER

ITEM	REQUIREMENTS
Copying technology	Laser
Duplex copying	Two-sided copying Automatic
Input: Output support	1-1, 1-2, 2-1, 2-2
Copying Speed	20cpm
Copy Resolution	600 x 600 dpi
Minimum Memory / RAM Installed	512 MB
Communication Mode	Duplex
Interfaces	USB 2.0 Parallel Port IEEE 1284,(USB cable included);
	Gigabit Ethernet
Display/ Operation	Touch screen panel
Trays	3 paper trays including the bypass tray; Automatic Document Feeder
Media Type	Papers, envelops, transparencies
Document Feeder Capacity	50 sheets
Standard Tray	250 sheets
Optional Tray	250 sheets
Bypass Tray	100 sheets
Output Tray	250 sheets facedown
Auto Tray Switching	Capable



Media Sizes	Document glass and maximum paper size is legal (8.5 x 14 inches);
Monthly Duty Cycle	Maximum 20,000 pages per month.
Power	220-240 VAC 50/60 Hz
Power Saver Mode	35 watts
Warm up time	30 Seconds max
First copy out time	8 seconds or less
Toner type	Customer replaceable
Toner Control method	Automatic Toner Density monitoring
Finishing options	Multiposition stapling, fit to new paper size, booklet creation
Document scanner	ADF (full duplex)
Zoom range	25-400% in 1% increments
Other features	Secure print, Delay print, Watermark, Power save mode
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

MEDIUM OFFICE PHOTOCOPIER

ITEM	REQUIREMENTS
Copying / Print technology	Laser
Duplex copying/printing	Two-sided copying Automatic
Input: Output support	1-1, 1-2, 2-1, 2-2.
Copying Speed	30 cpm
Multiple copying	Up to 999 copies
Copy Resolution	up to 1200 x 1200dpi
Memory	512MB expandable to 1024
Hard drive	40GB
Communication Mode	Duplex
Interfaces	USB 2.0 Parallel Port IEEE 1284,(USB cable included);
Trays	3 paper trays including the bypass tray
Media Feed	Include Duplex unit, Automatic media feeder;
Document Feeder Capacity	75 sheets
Output Tray	250 Sheets
Standard Tray	500 Sheets
Optional paper supply	500 Sheets
By pass Tray	100 Sheets
Auto Tray Switching	Capable
Media Sizes	Document glass and maximum paper size is legal (11 x 17 inches); Automatic media feed.
Media type	Paper, Envelopes, labels, cards



Monthly Duty cycle	Maximum 100,000 ppm.
Display/ Operation	Touch screen panel
Power	220-240 VAC 50/60 Hz; consumption 1340 w (max)
Power Saver Mode	35 watts
Warm up time	30 Seconds max
First copy out time	5 seconds or less
Toner Control method	Automatic Toner Density monitoring
Toner	Customer Replaceable
Finishing options	Multi-position stapling, fit to new paper size, Hole punch, booklet creation
Document scanner	ADF (full duplex)
Output capacity	250 Sheet face down
Zoom range	25-400% in 1% step
Other features	Secure print, Delay print, Watermark
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

LARGE OFFICE PHOTOCOPIER

ITEM	REQUIREMENTS
Copying / Print technology	Laser
Duplex copying/printing	Two-sided copying Automatic (standard)
Copying Speed	45cpm
Copy Resolution	Up to 2400 x 600 dpi /4800 x 600 dpi interpolated output
Memory / RAM Installed (Min)	1GB
Hard drive Capacity	60GB
Communication Mode	Duplex
Interfaces	USB 2.0 Parallel Port IEEE 1284,(USB cable included);
Connectivity	Gigabit Ethernet
Trays	3 paper trays including the bypass tray.
Multiple Copying	Up to 9999 copies
Media Feed	Include Duplex Automatic media feed tray;
Input: output support	1-1, 1-2, 2-1, 2-2.
Document Feeder Capacity	100 sheets
Output Tray Capacity	500 Sheets
Standard Tray	550 sheets
Optional paper supply	550 Sheets
Bypass Tray	100 sheets
Auto Tray Switching	Capable
Media Sizes	Document glass and maximum paper size is legal (11x 17 inches); Automatic media feed
Media type	Paper, Envelopes, labels, cards
Display /Operations	Touch screen
Monthly Duty Cycle	Maximum 200,000 pages per month.



Power	220-240 VAC 50/60 Hz
Power Saver Mode	35 watts
Warm up time	30 Seconds max
First copy out time	4 seconds or less
Toner Control method	Automatic Toner Density monitoring
Original	Maximum A3
Finishing options	Multi-position stapling, fit to new paper size, hole punch, booklet creation
Document scanner	ADF (full duplex)
Output capacity	250 Sheet face down
Zoom range	25-400% in 1% step
Other features	Secure print, Delay print, Watermark
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DSLR DIGITAL CAMERA

ITEM	REQUIREMENTS
Resolution	14.1 Megapixels
sensor type	CMOS
Image Stabilization	Standard
Image Resolution	4320 x 3240
Minimum Shutter speed	60 sec
Minimum continuous shooting speed	3.5 frames per second
Video capture	1280 x 720; 640 x 480 ; 320 x 240
Maximum Frame Rate	30 fps
Digital Video Format	MOV, AVI, MPEG-4,MJPEG, H.264
Still image format	JPEG, RAW,RAW+JPEG
Lens type	Lens mountable
Minimum Lens	18-55mm
optical zoom	10X
Minimum Field of view	1.5
View Finder	LCD
Display resolution	920,000
Light Sensitivity	6400 ISO
Expandable Memory Type:	MS Duo / MS PRO Duo / SD / SDHC/SDXC/MMC
Exposure Modes	Programmable, automatic
Battery:	Li-ion rechargeable battery
Power Device	Battery charger external
Connector type	USB, Composite video/audio
Battery Life	300 shots
Face detection	Standard
Shooting modes	auto, portrait, landscape, night, close-up, snapshot, flash off, indoor , low light, movie



Self – Timer	2 Sec/10 Sec
Flash type	Auto
Flash Mode	Flash On/off, red eye reducer, auto
Sound	Built in Microphone and speakers
Accessories	Rechargeable Li-ion Battery, Battery Charger, Remote Control, USB Cable, Audio/Video Cable, case and strap
Focus Mode	Automatic, Manual
White balance	Custom, automatic, presets
Firmware	User upgradable
Software	Windows XP/ Windows Vista/ Windows 7/Mac/ Linux compatible image viewing software
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
COMPACT DIGITAL CAMERA**

ITEM	REQUIREMENTS
Resolution	14.1 Megapixels
sensor type	CCD
Pixel Density	24 MP/cm ²
Still image format	JPEG
Image Stabilization	Optical/lens
Image Resolution	4320 x 3240
Minimum Shutter speed	60 sec
Video capture	1280 x 720; 640 x 480 ; 320 x 240
Maximum Frame Rate	30 fps
Digital Video Format	MOV, AVI, MPEG-4,MJPEG
Optical zoom	10 x
Minimum wide angle zoom	25mm
View Finder	LCD
Display Resolution	460,000
Light Sensitivity	3200 ISO
Built in Memory	40MB
Expandable Memory Type:	MS Duo / MS PRO Duo / SD / SDHC/SDXC/MMC
Exposure Modes	Programmable, automatic
Battery:	Li-ion rechargeable battery
Power Device	Battery charger external
Connector type	USB, Composite video/audio
Battery Life	300 shots
Operating system compatibility	Linux, Windows XP, Windows Visa, Windows 7
Face detection	Standard
Shooting modes	auto, portrait, night snapshot, indoor and low light,



Self – Timer	2 Sec/10 Sec
Flash type	Built-in;
Flash Mode	Flash On/off, red eye reducer, auto
Sound	Microphone and speakers built in
Accessories	Rechargeable Li-ion Battery, Battery Charger, Remote Control, USB Cable, Audio/Video Cable, case and strap
Lens type	Built in
White balance	Custom, automatic, presets
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

PROFESSIONAL DIGITAL CAMCORDER

ITEM	REQUIREMENTS
Image Sensor	CMOS/ 3M0S
Image Sensor size	1/4 in
Minimum Filter Diameter	40 mm
Total minimum pixels	8 MP
Minimum Digital Zoom	200 X
Optical Zoom	10 X
Min Focal Length	40 mm (35 mm equivalent)
Minimum Shutter Speed	1/30 (Auto slow shutter On); 1/60(Auto slow shutter Off)
Image Stabilization	Optical
Audio Support	5.1 Surround Sound, AC-3 (2 channels)
Video Capture Format	HDV ,MPEG-2, MPEG-4, AVC/H.264 (HD Compliant)
Maximum Video Capture Resolution	1440 x 1080
Display type	LCD
Display resolution	200,000 pixels
Video Broadcast Standard	NTSC
Video signal	1080/60i
Recording Media	Memory Stick Duo, Memory Stick PRO Duo, Sony Memory Stick Image Capture (SD/SDHC/SDXC), High Definition Mini DV (recommended) ,MiniDV cassette
Flash	Accessory Shoe, Red-Eye Reduction
Still Camera resolution	10MP
Image Format	JPEG
White Balance	Auto, outdoor, indoor, daylight, sunny, shade, cloudy, manual
Exposure Settings	Auto Exposure, Manual Exposure
Internal Memory type	Hard drive/Flash Memory
Minimum Internal Memory	32 GB



Included Components	AC Adapter, Battery, Battery Recharger, Cables - A/V (RCA Composite), Cables - Component Video, Cables - USB, Docking / Cradle Stand, Remote, software CD/DVD Rom, Carrying case
Interface Connection	SD output, HD output , headphones, A/V Output, Component Video, HDMI, LANC Terminal, Microphone, Proprietary, S-Video, USB2.0 - Universal Serial Bus
Additional Features	Backlight Compensation, Built-in Light, Built-in Speaker, Fader Function, PictBridge Support, Touch Screen, Viewfinder Power
Focus Features	Auto Focus, Face Recognition Auto Focus, Manual Focus, Spot Focus
Power requirement	7.2 V(Battery)
Power Source	AC Adaptor, Lithium-Ion Battery
Focus	Auto/Manual
Iris	Auto/Manual
Warranty	1 Year Limited Warranty
Original detailed and highlighted Brochures MUST be submitted	

**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
STANDARD USER DIGITAL CAMCORDER**

ITEM	REQUIREMENTS
Image Sensor	CMOS
Image sensor size	1/8 in
Minimum Filter Diameter	40 mm
Total minimum pixels	10 MP
Minimum Digital Zoom	100 X
Optical Zoom	12 X
Min Focal Length	40 mm (35 mm equivalent)
Minimum Shutter Speed	1/30 (Auto slow shutter On); 1/60(Auto slow shutter Off)
Image Stabilization	Optical
Audio Support	Stereo
Video Capture Format	MPEG-2, H.264/AVC
Maximum Video Capture Resolution	1920 x 1080
Display type	LCD
Display resolution	200,000 pixels
Video Broadcast Standard	NTSC
Recording Media	Memory Stick Duo, Memory Stick PRO Duo, Sony Memory Stick Image Capture (SD/SDHC/SDXC), ,MiniDV cassette
Flash	Accessory Shoe, Red-Eye Reduction



Still Camera resolution	10MP
Still Image Format	JPEG
White Balance	Auto,outdoor, indoor, daylight, sunny, shade, cloudy, manual
Exposure Settings	Auto Exposure, Manual Exposure
Internal Memory type	Hard drive/Flash Memory
Minimum Internal Memory	32 GB
Included Components	AC Adapter, Battery, Battery Recharger, Cables - A/V (RCA Composite), Cables - Component Video, Cables - USB, Docking / Cradle Stand, Remote, software CD/DVD Rom, Carrying case
Interface Connection	A/V Output, Component Video, LANC Terminal, Microphone, Proprietary, S-Video, USB - Universal Serial Bus 2.0
Additional Features	Backlight Compensation, Built-in Light, Built-in Speaker, Fader Function, PictBridge Support, Touch Screen, Viewfinder Power
Focus Features	Auto Focus, Face Recognition Auto Focus, Manual Focus, Spot Focus
Power Source	AC Adaptor DC Input, Lithium-Ion Battery
Focus	Auto/Manual
Iris	Auto/Manual
Warranty	1 Year Limited Warranty
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

STANDARD USER DIGITAL DVD CAMCORDER

ITEM	REQUIREMENTS
Image Sensor	CMOS/CCD
Image sensor size	1/6 in
Minimum Filter Diameter	30 mm
Total minimum pixels	10 MP
Minimum Digital Zoom	100 X
Optical Zoom	12 X
Min Focal Length	40 mm (35 mm equivalent)
Minimum Shutter Speed	1/30 (Auto slow shutter On); 1/60(Auto slow shutter Off)
Image Stabilization	Optical
Audio Support	Stereo
Video Capture Format	MPEG-2, H.264/AVC
Maximum Video Capture Resolution	1920 x 1080
Display type	LCD
Display resolution	123,000 pixels



Video Broadcast Standard	NTSC
Recording Media	DVD/ Flash Media
DVD Type	DVD-R/-RW/-R DL
Flash	Accessory Shoe, Red-Eye Reduction
Still Camera resolution	10MP
Still Image Format	JPEG
White Balance	Auto, outdoor, indoor, daylight, sunny, shade, cloudy, manual
Exposure Settings	Auto Exposure, Manual Exposure
Internal Memory type	Flash Memory
Included Components	AC Adapter, Battery, Battery Recharger, Cables - A/V (RCA Composite), Cables - Component Video, Cables - USB, Docking / Cradle Stand, Remote, software CD/DVD Rom, Carrying case
Interface Connection	A/V Output, Component Video, LANC Terminal, Microphone, Proprietary, S-Video, USB - Universal Serial Bus 2.0
Additional Features	Backlight Compensation, Built-in Light, Built-in Speaker, Fader Function, PictBridge Support, Touch Screen, Viewfinder Power
Focus Features	Auto Focus, Face Recognition Auto Focus, Manual Focus, Spot Focus
Power Source	AC Adaptor DC Input, Lithium-Ion Battery
Focus	Auto/Manual
Iris	Auto/Manual
Warranty	1 Year Limited Warranty
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DISK DUPLICATOR

ITEM	REQUIREMENTS
Operating type	Stand alone
Max Writing speed	DVD-R: 24X DVD-RW: 8X DVD-R DL: 10X DVD+R: 24X DVD+RW: 8X DVD+R DL 10X CD-R: 52X CD-RW: 52X
Supporting Discs	DVD-ROM DVD-R DVD-Video DVD-RW DVD+R DVD+RW CD-ROM CD-R CD-Audio Disc CD-RW Multi-session Photo CD CD-I Video CD CD-ROM XA & CD Extra (CD Plus), Blu Ray
Supported Recording Discs	12cm 4.7GB DVD-R/RW 12cm 4.7GB DVD+R/RW 12cm 8.5GB DVD+R DL 12cm 8.5GB DVD-R DL 12cm 80min/700MB CD-R 12cm 74min/650MB CD-RW 8cm 1.47GB mini DVD-R 8cm 24min/210MB mini CD-R 8cm 50MB Business Card CD-R, Blu-ray



Display	LCD
Hard drive	250GB
Hard drive partitioning	Continuous
Buffer Memory	128MB
Connectivity	USB 2.0 and Network connectivity
Firmware upgradeable	Yes
Security	User account management
DVD format conversion	Convert media between DVD+R/RW and DVD-R/RW automatically
Auto counter	Yes
Labeling	Laser labeling technology
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DIGITAL VIDEO CAMERA

ITEM	REQUIREMENTS
Optical sensor size	1/3 in
Optical sensor type	CMOS
Min illumination	7 lux
Image stabilizer	optical
Min shutter speed	1/4 sec
Shooting modes	Digital photo mode
White balance	Custom, Presets, Automatic
White balance presets	Auto, Indoor, Outdoor, Manual
Lens aperture	F/1.8-2.1
Optical zoom	12 x
Lens system type	Zoom lens
Min focal length	5.1 mm
Auto focus	TTL contrast detection
Filter size	37 mm
Manual focus	Manual, Automatic
Zoom adjustment	Manual, Motorized drive
Media type	Mini DV (HDV) PAL
Image storage	JPEG 1920 x 1440, JPEG 1440 x 1080, JPEG 1920 x 1080, JPEG 640 x 480
Flash memory	16 MB – Memory Stick Duo
Recording speed	SP
Display type	LCD display – TFT active matrix
Display form factor	Rotating
Display resolution	123,200 pixels
Audio input type	Microphone
Microphone type	Built-in
Microphone operation mode	Stereo



Connections	1 x Component video output, 1 x Composite video/audio output, 1 x S-Video output, 1 x Headphones, 1 x Audio input, 1 x Control-L (LANC), 1 x USB, 1 x DC power input
Cables included	A/V cable, Component video cable, USB cable
Video input features	Built-in speaker, Histogram display, Backlight compensation, RGB primary color filter, Analog to digital conversion with pass through Remote control Remote control – Infrared
Included accessories	Lens cap, Lens hood, Camcorder shoulder strap, Memory Stick Duo adapter,
Power	External power adaptor 240v, Lithium rechargeable battery pack, charger
Warranty	1 Year

**RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS
VIDEO RECORDING PRESENTER WITH LASER POINTER**

ITEM	SPECIFICATIONS
Technical features	4-in-1 Product - Product functions as a <ul style="list-style-type: none"> - PowerPoint presenter - with laser pointer, - integrated voice recorder and - SD memory card reader
Storage	Built-in SD memory card reader and SD Card Storage - Allows recording of presentations, meetings or notes and save to a SD card in .wav format;
Wireless	2.4GHz wireless technology that provides up to a 50-foot (15m) working range for full control of the presentation from anywhere in the room
Stow-n-go® receiver	USB receiver that can be stored conveniently inside presenter for easier storage and travel
Carrying case	Carrying case with extra storage compartment for 2 spare AAA batteries
Led status indicators	SD card memory full, low battery power and laser beam currently in use Indicator lights to notify user of any status changes, so there are no unexpected surprises during an important presentation
System requirements/compatibility	Windows 2000/XP/Vista, USB port, SD memory card Windows 7 & 8
Communication interface	USB Port
Convenience	Easily record any presentation questions with the click of a button
Weight	55 g



Battery	2 AAA batteries and 2 spare AAA batteries
Functions on the presenter	Scroll wheel provides for navigation through presentations; Other buttons include: On/off, Next/previous page, dark screen/resume, application switch, slideshow/ESC and volume control
Warranty	2 years
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

DIGITAL LCD DISPLAY PANEL

ITEM	SPECIFICATIONS
Picture/display	
Aspect ratio	16:9
Size	Between 47"
Brightness	500 CD/M2
Total Input-Line: 4 ,Total Input-Terminal: 4	
Contrast ratio	1600: 1 Dynamic Contrast Ratio,
Display screen	LCD WXGA Active Matrix TFT
Screen enhancement	Anti-Reflection Coated Screen
Viewing angle	Horizontal: 178°, Vertical: 178° Degrees
Audio power output	14W Total (7Wx2 Digital AMP)
Inputs and Outputs Specifications	Analog Audio Input(s) -Pin jack (x2), Analog Audio Output(s)-Pin jack (x2), Composite Video Output(s) - BNC (x1) Loop Through Dual Option Slot-1.8 Slot, Ethernet Connection(s), HD Component Video Input(s) RGB/COMPONENT IN: HD D-sub 15-pin female (x1) HD Component Video Output(s) RGB/COMPONENT Out: HD D-sub 15-pin female (x1) HDMI™ Connection(s) Available through Option Card BKM-FW15 PC Audio Input(s), RS232 Control- D-sub 9-pin (x1) S-Video Input(s) Mini DIN 4-pin (x1): when S-Video is used, Composite Video is inactive Video In (BNC) (x1): when Video is used, S-Video is inactive
Video Specifications Format(s) Supported	NTSC/PAL/PAL-M/PAL-N/NTSC4.43/PAL60 Viewing Angle
Display Technology 8 ms Picture Mode Custom, Vivid, Standard, Conference, DICOM	
Display RESPONSE TIME	8MS
Panel resolution	1920 x 1080 Display Resolution
Sound	Virtual Surround sound
Stereo sound Output	
Remote Control	LAN / RS232 Available



Digital Inputs Specifications	DVI-D, HDSIDI (SMPTE 292M) , No (Available through Option Card BKM-FW16)
Power Specifications	Internal Power Supply Yes Power Consumption (in Operation) Approx. 320W Power Requirements AC 100-240V, 50/60Hz
HDMI™ Technology	No (Available through Option Card BKM-FW15)
Multiple Language Display	English, French, Spanish, Italian, German, Japanese, Dutch, Swedish, Russian,

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

MULTIPURPOSE PHOTOCOPIER (4 IN ONE)

ITEM	REQUIREMENTS
Printing specifications	
Functions	
All-in-one functions	Print, copy, Scan and Fax
Multitasking capability	Yes
Print quality technology	
Print technology	LaserJet
Print speed, black (normal quality mode)	Up to 40 ppm
Print speed, color (normal quality mode)	Up to 40 ppm
First page out (black)	As fast as 11.5 sec
First page out (color)	As fast as 11.5 sec
Monthly duty cycle	Up to 200,000 pages
Recommended monthly print volume	8,000 to 17,000 pages
Print resolution, black	Up to 1200 x 600 dpi
Print resolution, color	Up to 1200 x 600 dpi
Memory	1GB
Processor speed	2 MHz
Connectivity	Gigabit Ethernet
Paper handling	
Paper handling optional, input	1 x 500 Feeder Stand, 3 x 500 feeder stand-one or the other of these should be present with each unit.
Paper handling optional, output	Tray 1 and a Cassette Tray 2 and 3 (Tray 1 holds 100 sheets, Tray 2 and 3 holds 500 sheets each) F Bundle includes an additional 2 x 500 sheet input trays (trays 4 and 5)
Paper handling standard, output	500-sheet face down output bin
Envelope capacity	Up to 10 envelopes
Duplex printing	Automatic
Document finishing	Sheet feed simplex or duplexed face down to standard output bin; Optional devices handle Stacking, Stapling and Booklet making



Media sizes, standard	Multipurpose tray 1: letter, letter-R, legal, executive, statement, 8.5 x 13 in, 11 x 17 in, 12 x 18 in, index cards (4 x 6, 5 x 8), envelopes (No. 9, 10, Monarch); Input tray 2: letter, letter-R, legal, executive, 8.5 x 13 in, 11 x 17 in; Input trays 3, 4, and 5: letter, letter-R, legal, executive, 8.5 x 13 in, 11 x 17 in, 12 x 18 in
Media sizes, custom	Multipurpose tray 1: 4 x 5.5 to 12.6 x 18 in; Tray 2: 5.8 x 8.3 to 11.7 x 17 in; Trays 3, 4, 5: 5.8 x 8.3 to 12.6 x 18 in
Media types	Paper (bond, recycled, glossy, mid-weight, heavy, heavy glossy, extra heavy, extra heavy glossy, rough, tough), transparencies, labels, envelopes, cardstock, user-defined
Scanner specifications	
Scanner type	Flatbed, ADF
Scan resolution, optical	Up to 600 dpi

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS	
EXTERNAL HARDDISK	
ITEM	REQUIREMENTS
Capacity	320 GB
Hard Disk Spindle Speed	7200 rpm
Cache	2 MB
Hard disk Interface	FireWire 800, FireWire 400 and USB 2.0
Data Transfer Rate	480 MB/s
Seek time	14 ms
Compatible operating systems	Windows XP, Windows Vista, Windows 7 and Mac OS 9.x / 10.1 or higher
Power Source	USB bus and FireWire bus
Power Requirements	100 - 240 VAC
Warranty	1 year
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS	
FLASH DISK	
ITEM	REQUIREMENTS
Capacity	4 GB
Rotational Speed	4200 rpm
Cache	2 MB
Interface	ATA 100, Zero Insertion Force (ZIF) connector / USB 2.0
Max. External Transfer Rate	100 MB/s



SEEK TIME	
Track t Track	3 ms
Average	15 ms
Maximum	26 ms
SHCK	
operating	500G @ 2ms
Non-operating	1500G @ 1ms
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS	
INTERNAL SERVER HARDDISK	
ITEM	REQUIREMENTS
Capacity	320 GB 10K rpm
Maximum Raw Storage	584 GB 10K rpm
Host interface	160 MB SCSI LVD
Hard Disk Drives	160 MB SCSI 3.5 inch low profile
Supported Drives	73 GB 10K rpm; 146 GB 10K rpm
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS	
STANDBY UPS	
ITEM	REQUIREMENTS
Power provided	At least 650 VA
Input Voltage Swing	AC 196 - 280 V
Output voltage Range	AC 230 V
Localization	220 - 240V / 50Hz
Output Frequency	50 - 60HZ auto-sensing
Design	automatic voltage regulator
	Mains Isolation
	User replaceable batteries
	Static-Automatic bypass
	Run time (full load) 2,4 min
	Maintenance bypass in case of servicing
Battery Module	Minimum 16 minutes backup time on 50% rated output
	Minimum 5 minutes backup time on 100% rated output
	Minimum 3 year lifetime
	Type (Sealed lead-acid preferred)
	Automatic periodic battery tests
	Short recharge time (Maximum 5 hours for 100% runtime)



	Protection against excessive/damaging discharge
Protection	Output Overload
	Input/output short-circuit
Communication Interface	Serial port communications support
Warranty	1 Year On-site Repair & Replace
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

ONLINE/SMART UPS

ITEM	REQUIREMENTS
Product Description	850VA UPS
Power	850Va / 500W
Input Voltage range	165-275 Vac
Frequency	50 Hz
Charging Time	12 hours (90%)
Battery type (Ah)	Air-tight, maintenance-free, lead battery with anti-leak seal
Autonomy	1.5 min (full load) - 7 min (medium load)
Output voltage (Single Phase)	230Vac + 10% - 15% 50Hz 5% in-line
Power (kVA/KW)	850 Va/500 W
Output number	Back: 2 IEC sockets + 2 sockets No backup: 2 sockets
Switch time	10 ms
Dimensions (W x D x H)	126 mm x 325 mm x 220 mm
Weight	6 Kg
Control Software	UPSILON 2000
Communication Port	USB
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

INDUSTRIAL/MODULAR UPS

ITEM	REQUIREMENTS
Rating	At least 6 KVA
Input Voltage Swing	Minimum. 220V to 270V
Output voltage	220V - 240V
Output Frequency	50 - 60HZ auto-sensing
Design	automatic voltage regulation
	Mains Isolation
	User replaceable batteries
	Static-Automatic bypass, SMART capabilities enabled



	Maintenance bypass in case of servicing
Battery Module	Minimum 60 minutes backup time on 50% rated output
	Minimum 5 year lifetime, on Battery
	Type (Sealed lead-acid preferred)
	Automatic periodic battery tests, Front panel mounted fuse
	Short recharge time (Maximum 5 hours for 100% runtime)
	Protection against excessive/damaging discharge
Protection	Output Overload
	Input/output short-circuit
Form Factor	Rack Mountable
Communication Interface	Asynchronous serial COM port, 10BaseT Ethernet SNMP/HTTP port, Transport Cases, Slides and
Optional accessories	Alternate I/O Configurations, Dual Source Input, Battery Expansion, Battery less Operation, Battery charger/conditioner, power distribution unit, System interface Mounting Kits
Operational environment requirements	Room temperature/humidity (i.e. Min. Air Conditioning)
Warranty	At Least 2 years' service, replace and Repair
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

APPLICATION SERVER (DEDICATED)

ITEM	REQUIREMENTS
Processor Speed	Processor 3.6 GHz duo Core (Two Processors)
Cache Memory	2MB second level ECC cache
Memory(RAM)	Minimum:8 GB
Expansion Slots	3 (64-bit/133MHz) PCI-X
Redundancy & Storage Controllers	Support RAID Level 5 (Disk Striping with Parity) & Smart Array 6i Controller (integrated on system board)
	Back Up Functionality
	Tape Drive & Backup Software
	16X IDE DVD-RW
Internal Storage Capacity	Hot Plug SCSI (3x 320GB)
Display/Graphics	17" TFT Flat Panel LCD, same brand as CPU
Interfaces	1 Serial
	1 Pointing Device (Mouse)
	1 VGA Graphics Adapter
	1 Keyboard
	1 External SCSI



	Dual Port PCI-X 1000T Gigabit Server Adapter (embedded) 3 USB (1 front, 2 back) & 1 Fire wire interface
Form Factor	Rack Mountable(2U),
Support software, and configuration utilities	Include Server managements manufacturers packs
Power Supply Unit	2 Redundant 500 W Power supply Input: 220 - 240 VAC
Warranty	2 Years
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

STORAGE SERVER (CLUSTERED)

ITEM	REQUIREMENTS
Form factor	12U rack-mount (19")
CPU	Duo Core Processor; 2GHz
Interconnect	Point-to-point crossbar; max data transmission 25.6 gigabits per second
Memory	Min 2GB upgradable to 8GB
Internal Storage	Max 2 TB
PCI Slots	Max 18
Partitions	Max 2
External Dimensions	482 (W) x 820 (D) x 530 (H)
Weight	Max 150 kg
Supported Operating Systems	Red Hat® Enterprise Linux AS (v.4 for Itanium), Novell® SUSE® Linux Enterprise Server 9 for Itanium Processor Family, Microsoft Windows Server 2003, Enterprise Edition for Itanium-based Systems, Microsoft Windows Server 2003, Datacenter Edition for Itanium-based Systems Open source/Windows Server 2xxx
Original detailed and highlighted Brochures MUST be submitted	

ITEM	MINIMUM RECOMMENDED SPECIFICATIONS
<ul style="list-style-type: none"> • Patch Panel and Cat 5E Patch Cables 	Minimum Specification: <ul style="list-style-type: none"> - 24-port patch panel - 3m Patch Cords/Cables long enough to connect computers to a wall jack (7–10 ft)



	<ul style="list-style-type: none"> - 1m Patch Cords/Cables for connecting patch panels - Two-year parts and labor warranty provided by vendor
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ITEM	RECOMMENDED SPECIFICATION
<ul style="list-style-type: none"> • Rack 	<p>Minimum Specifications:</p> <ul style="list-style-type: none"> - Industry standard 19-inch. free standing open frame aluminum equipment rack - Approximately 72-inch. tall (42U, 800mm x 800mm) - Front and rear adjustable rails for equipment, providing standard 19” rack mounting. (The front rails must be recessed by 100mm) - Secured to the equipment room floor with anchor bolts and to the wall. - Transparent front lockable door with a key - Solid rear lockable door (Floor standing cabinets); - Solid side lockable panels - fully removable (Floor standing and wall mounted cabinets) - All door locks to be lockable with a common key; - Top and bottom grommetted cable entries; - Power strips on both sides of the rear of the cabinet, providing a minimum of sixteen 13-amp power outlets. - A four way fan tray to be located within the roof of the equipment cabinet. - Every Circuit outlet shall have a 13-Amp double power socket



	- One-year warranty parts and labor provided by vendor
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ITEM	RECOMMENDED SPECIFICATION
Wireless Access Point (3COM Wireless AP9552 “N” PoE Access Point or equal)	<p>Minimum Specifications:</p> <ul style="list-style-type: none"> - Wireless Technology: Wi-Fi – IEEE 802.11 “N” - Antenna: 3 built in internal antennas and connections for three External antennas with Reversed SMA Connectors - Antenna Range: 164FT IEEE 802.11 “N” - Includes wireless LAN controller to support 24 MAPS - 328FT IEEE 802.11 “N” - Frequency: 5 GHz IEEE 802.11 N ISM Band - Band/Bandwidth: 5GHz IEEE 802.11 “N” - Data Encryption: WEP, WPA, and WPA2 - Must be compatible with existing LAN switch and connected to existing LAN in local school - Transmission Speed: 108 Mbps - Interfaces/Ports: 1 x RJ-45 10/100/1000 Base-TX LAN - Warranty: 3 Year Standard Limited Warranty - Installation included

ITEM	RECOMMENDED SPECIFICATIONS
Surge Protector	<p>Minimum Specifications:</p> <ul style="list-style-type: none"> - Six 120v electrical outlets with 6' cord. - Electrical rating - 15 amp, 120Vac, 50/60 Hz, continuous duty, three line protection, 15 amp circuit breaker - Minimum energy dissipation - 900 joules. - UL 1449 TVSS Rating - 330v across all three lines. - Clamping Response - <1 ns. - Noise Suppression - >60-90 dB or UL 1283 approved. - Agency Approvals - UL 1449 TVSS, UL 1283 EMI filter, CSA. - Lifetime product warranty by manufacturer

ITEM	RECOMMENDED SPECIFICATIONS
<ul style="list-style-type: none"> • 48-port Gigabit switch <p>NOTE:(For Desktops computers that shall be hardwired)</p>	<p>Minimum Specification:</p> <ul style="list-style-type: none"> • 48 RJ-45 ports for Gigabit



	<ul style="list-style-type: none"> • Supports half duplex and full duplex modes auto-negotiation for all ports • Auto MDI/MDI-X support on all ports for easy cable detection • Efficient MAC Address learning engine supports up to 4K MAC Addresses. • Provides store-and-forward forwarding scheme • Must be standard width and include mounting kit for installation into a rack • Two-year parts and labor warranty provided by vendor Installation included
<ul style="list-style-type: none"> • 24-Port Managed Switch 	<p>Minimum Specification:</p> <ul style="list-style-type: none"> • Standard: IEEE 802.3, 802.3u, 802.3ab, 802.3x, 802.1Q • Network Ports: <ul style="list-style-type: none"> - SG71660M-16 - 10/100/1000Mbps Gigabit Copper Ports (RJ-45) - SG72460M-24 10/100/1000Mbps Gigabit Copper Ports (RJ-45) - Shielded RJ-45, Auto-Negotiate, Auto-MDI/MDI-X Support - 4-1000Mbps Gigabit Fiber SFP Port • Network Cables: <ul style="list-style-type: none"> - 10/100/1000Mbps: Cat.5E up to 1000m • MAC Address Table: 8K Entries • Buffer Memory: 400KB • VLAN: Port-Based VLAN, 802.1Q Tag-Based VLAN • Port Link Aggregation: Trunking Groups: 8 max, Ports/Group: 12(SG72460M), 8(SG71660M) • Quality of Service: <ul style="list-style-type: none"> - 4 Priority Queues Per Port-High, Medium, Normal, Low Priority • Port Mirroring: <ul style="list-style-type: none"> - Mode: Rx Data, Multiple Source Ports, One Sniffer Port • LED Indication Per Unit: <ul style="list-style-type: none"> - Power, CPU Status Per Port: Link/Activity,1000M, 100M status • Environment: <i>Operating Temperature:</i> 0°C ~ 50°C • Dimensions: 17.7 x 8.23 x 1.73 inches (W x D x H), 1U, 19 inch Rack mountable



	<ul style="list-style-type: none"> • Power: 100-240VAC,50-60Hz, Consumption: 3.6Wmax.@7.5V • Power over Ethernet
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ITEMS	RECOMMENDED SPECIFICATIONS
<ul style="list-style-type: none"> • File Server 	<p>Minimum Specifications</p> <ul style="list-style-type: none"> - Dual Core Processor - 3 x 320 GB hot swappable SAS or SATA hard drives, - 8 GB RAM - Two(2) hot swappable hard drive bays available after the installation of the base hard drivers and optical drive - 4 Gigabit NICs - CD-RW/DVD drive - Keyboard, mouse - 15-inch LCD monitor - • Three year, on-site warranty provided by vendor <p>NOTE: Adjustments to the Server should be made basing on the MDA's user requirement</p>

ITEM	RECOMMENDED SPECIFICATIONS
<p>Backup Solution for Server</p>	<ul style="list-style-type: none"> • Minimum Specifications: • Recommend Linear Tape-Open (LTO) Tape Drive, minimum 100GB/200GB for a single server connection. • If the backup solution is for multiple servers, make adjustment for the size and type of backup solution needed. Example, tape library/auto loader or external hard drive with capacity at least twice that of the server(s). • Three year warranty provided by vendor.



RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS

TV CARDS

PARTICULARS	GENERAL REQUIREMENTS
Video Input	Able to receive HDTV signals, allowing a system equipped with it to act as a tuner for a connected HDTV-ready device.
Device Type	ATSC HDTV receiver / analog TV / radio tuner / video input adapter
Enclosure Type	Plug-in module
Interface Type	Express Card
VIDEO	
Form Factor	Plug-in module
Interface Type	FM input, S-video input, Composite video input
Analog Video Format	NTSC, PAL-M, PAL-N
Analog Video Signal	S-Video, Composite video
Digital Video Format	MPEG-1, MPEG-2, MPEG-4
Audio Input Support	Standard
Features	Teletext, Sleep timer, Channels preview, Closed captioning, Electronic Program Guide
Audio Input Type	FM tuner - Integrated
Expansion / Connectivity Interfaces	1 x TV antenna - Input, 1 x Display / video - S-video input - 4 pin mini-DIN - External, 1 x Display / video - Composite video input - RCA - External, 1 x Radio - FM input
Software Included	Drivers & Utilities OS Required Microsoft Windows Vista / XP, Peripheral / Interface Devices Sound card, DirectX 9.0c compatible graphics card System Requirements Details - RAM 256 MB - HD 200 MB
Original detailed and highlighted Brochures MUST be submitted	

RECOMMENDED SOFTWARE

1. Operating Systems

Operating Category	Systems	Type	Recommended software
I.		Desktop OS	Commercial Windows 7, Windows Vista, Red Hat Enterprise Linux for Desktops or Workstation, Suse Linux desktop
			FOSS Ubuntu 10.10, Fedora, Free BSD, Linux desktop
II.		Server OS	Commercial Windows Server 2003, Windows Server 2008, Red Hat Enterprise Server, Suse Linux enterprise, Sun Solaris
			FOSS Linux, OpenSuse 11.4



III.	Network OS	Commercial/ Proprietary	Junos, Cisco IOS, Extreme XOS, Novel Netware, Windows Server 2003, Windows Server 2008
FOSS		OpenVMS, Linux, Sun Solaris	

2. Office Productivity Suites

Category		Type	Recommended software
I.	Office Suite	Commercial	<ul style="list-style-type: none"> • Ms Office, • Oracle office, • Staroffice for Sun Microsystems.
		FOSS	<ul style="list-style-type: none"> • Open office • Libre Office • Gnome office

3. Utilities

Category	Type	Recommended software	
I.	Backup	Commercial	<ul style="list-style-type: none"> • AIMstor Backup • Backup Chain • Backup Express (BEX) • Genie Backup Manager
		FOSS	<ul style="list-style-type: none"> • AMANDA • BackupPC • Bacula
II.	System management software	Commercial	<ul style="list-style-type: none"> • Tivoli Framework • Net Director • Cfengine
		FOSS	<ul style="list-style-type: none"> • Nagios • Fussion • OpenNMS
III.	File management software	Commercial	<ul style="list-style-type: none"> • SendThru Managed File Transfer • DOC Regenerator • Move Me • XYplorer • FindYour Files
		FOSS	<ul style="list-style-type: none"> • Filezilla



			<ul style="list-style-type: none"> • Restoration • Foxit Reader • Explorer++
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4. Security software

No.	Category	Type	Recommended software
1.	Endpoint protection systems (Anti-virus, AntiMalware)	Commercial	Norton, Kaspersky Anti-Virus, McAfee VirusScan, Avira Antivirus Personal - Free Antivirus, Panda Antivirus, Panda Antivirus.
2		FOSS	AVG Anti-Virus, LDAP Directory
3	Network service management systems	Commercial	CISCO Work VPN/Security Management Solution Cisco IDS software version 3.1
		FOSS	
5	Firewall/Intrusion Detection/Intrusion Prevention Systems	Commercial	Checkpoint Integrity, M0n0wall, Zone Alarm, Windows Firewall KFSensor for Windows
6		FOSS	Peervardian, Snort, TripWire, Nessus, SnoopNetCop Standard, Foundstone Attacker, Prevx Home,
7	Encryption systems	Commercial	BitArmor for businesses and organizations Guardian Edge for businesses and organizations PGP Whole Disk Encryption for Windows XP and newer Rohos Disk Encryption for Windows XP or newer Steganos Privacy Suite for Windows XP or newer, DriveCrypt, DriveCryptPlus, Share Crypt
		FOSS	DiskCryptor for Windows XP and newer TrueCrypt for Windows XP and newer, Mac OS X 1.4 and newer, and Linux (kernel 2.4, 2.6, or compatible) Cypherix LE for 32-bit Windows (Vista and earlier) FreeOTFE for Windows XP or newer. AxCrypt,



5. Web development and management software

Category		Type	Recommended software
1.	Content Management Software	Commercial	<ul style="list-style-type: none"> • Cold Fusion • Microsoft ASP.NET • PHP
		FOSS	<ul style="list-style-type: none"> • Joomla, • Drupal, • Python
2.	Web Development Software	Commercial	<ul style="list-style-type: none"> • Adobe Dreamweaver CS • Microsoft Visual Studio • Photoshop Adobe Image Ready CS
		FOSS	<ul style="list-style-type: none"> • Text Pad • Eclipse • Aptana • Zend Studio
3.	Web Hosting Software	Commercial	<ul style="list-style-type: none"> • Linux • Internet Information Service • Abyss Web Server • Oracle HTTP Server
4.		FOSS	<ul style="list-style-type: none"> • Apache HTTP Server • Nginx • Google Web Server • Lighttpd • Apache Tomcat

6. Database software

Category		Type	Recommended software
	Database	Commercial	<ul style="list-style-type: none"> • Microsoft SQL Server • Oracle
		FOSS	<ul style="list-style-type: none"> • MYSQL • SQL Express • PostgreSQL • Apache Derby • Openbase



7.0 Email Software

Category		TYPE	Recommended software
	Client Software	Commercial	Microsoft Outlook 2007, Outlook Express, IBM Lotus Notes, Netscape Messenger 9, Novell Evolution
		FOSS	Mozilla Mail and Newsgroups, Mozilla Thunderbird, Incredimail, Eudora, Zimbra Client software, Mdeamon messaging client
	Server Software	Commercial	Microsoft Exchange 2007, Netscape Messaging Server, Lotus Domino Mail Server, Novell Groupwise, Sun Java Messaging Server, Lotus Domino, Squid Mail, Exchange.
		FOSS	Zimbra Server software, Fedora Mail, MDeamon messaging server, Squirrel Mail,

8. Collaboration systems

Category		Type	Recommended software
	Server Software	Commercial	IBM Lotus Domino, Oracle Beehive Enterprise collaboration
		FOSS	eGroupware, cynapase, O3spaces, Ourproject.org , Citadel

9. Mobile Messaging Software

Category		Type	Recommended software
	Server Software	Commercial	ActiveXpert Software
		FOSS	Kannel SMS gateway, Rapid SMS

10. Tele Conferencing/Video Conferencing

Category		Type	Recommended Software
	Server Software	Commercial	Adobe Connect, Microsoft NetMeeting, Microsoft Live Meeting, Go To Meeting, Instant Presenter, Tandberg, IBM Lotus Same time, IBM Lotus live, WebEX
		FOSS	Ekiga, Open H323, AStericks
	Client Software	Commercial	Polycom PVX, Sight speed, VSee
		FOSS	Skype, Paltalk, windows live messenger, ooVoo



11. Network Management Software

Category		Type	Recommended Software
	Bandwidth Management Software	Commercial	Packet Shaper, Intel's NetStructure 7340 Traffic Shaper , Allot Communication and The Intel NetStructure 7370 Application Shaper
		FOSS	
	Network Monitoring Software	Commercial	<ul style="list-style-type: none"> • Automated audit trail analysis software • Automated media tracking software • BMC PATROL software • Compaq Insight Manager • Hewlett-Packard HP OpenView software • Integrity verification software • Keystroke monitoring software • Multi-router traffic grapher MRTG software • Network and application load and performance testing software • Network and component performance analysis software • Network availability monitoring software • Network modeling, mapping, and analysis software • Network traffic flow monitoring and analysis software • Network traffic probe software • Network, hardware, and software auditing software • Novell NetWare Management Station • Online traffic calculator software • Packet tracing software • Remote monitoring software • Tcpcap software • ZABBIX software
		FOSS	<ul style="list-style-type: none"> • AirMagnet Enterprise • Computer-assisted live supervision • Dartware InterMapper • Nagios software • Ethereal • Ipswitch WhatsUp Gold • Lavalys Everest • Micromuse NetCool



			<ul style="list-style-type: none">• Network monitoring software• Novell NetWare• Performance monitoring tools• Quest BigBrother• Quest Foglight• Sun Microsystems NetManage
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