

MEMBEKAL, MEMASANG, MENGUJI DAN MENTAULIAH KELENGKAPAN ICT UNTUK KEGUNAAN BANGUNAN PEJABAT MAJLIS
BANDARAYA ISKANDAR PUTERI BAGI TAHUN 2026

SPESIFIKASI TEKNIKAL

BIL.	BAHAGIAN	MUKA SURAT
A	DISPLAY & MOUNTING	2/0% P%
B	PRINTING & SCANNING	3/0% P%
C	INPUT & CONTROL DEVICES	5/0% P%
D	CAMERA & VISION	6/0% P%
E	STORAGE & MEMORY	7/0% P%
F	VIDEO WALL	9/0% P%
G	INFRASTRUCTURE	12/0% P%

BIL.	SPEKIFIKASI	YA	TIDAK	CATATAN																																		
A	Display & Mounting																																					
A.1	Samsung Essential Monitor S3 S32GF 27" atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Display Size</td><td>Minimum 27-inch flat panel display</td></tr><tr><td>Panel Type</td><td>IPS panel or equivalent</td></tr><tr><td>Resolution</td><td>Full HD (1920 × 1080)</td></tr><tr><td>Refresh Rate</td><td>Minimum 120 Hz refresh rate</td></tr><tr><td>Response Time</td><td>Maximum 5 ms (GTG)</td></tr><tr><td>Brightness</td><td>Minimum 250 cd/m²</td></tr><tr><td>Contrast Ratio</td><td>Minimum 1000:1 static contrast ratio</td></tr><tr><td>Viewing Angle</td><td>Minimum 178° horizontal / 178° vertical</td></tr><tr><td>Aspect Ratio</td><td>16:9 widescreen format</td></tr><tr><td>Color Support</td><td>Minimum 16.7 million colors</td></tr><tr><td>Video Input</td><td>Minimum HDMI input (2 ports)</td></tr><tr><td>VESA Mount</td><td>100 × 100 mm VESA wall mount support</td></tr><tr><td>Ergonomic Adjustment</td><td>Tilt adjustment support</td></tr><tr><td>Eye Protection</td><td>Low blue light / flicker-free technology</td></tr><tr><td>Power Supply</td><td>External power adaptor</td></tr><tr><td>Warranty</td><td>Minimum 3 years manufacturer warranty</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Display Size	Minimum 27-inch flat panel display	Panel Type	IPS panel or equivalent	Resolution	Full HD (1920 × 1080)	Refresh Rate	Minimum 120 Hz refresh rate	Response Time	Maximum 5 ms (GTG)	Brightness	Minimum 250 cd/m²	Contrast Ratio	Minimum 1000:1 static contrast ratio	Viewing Angle	Minimum 178° horizontal / 178° vertical	Aspect Ratio	16:9 widescreen format	Color Support	Minimum 16.7 million colors	Video Input	Minimum HDMI input (2 ports)	VESA Mount	100 × 100 mm VESA wall mount support	Ergonomic Adjustment	Tilt adjustment support	Eye Protection	Low blue light / flicker-free technology	Power Supply	External power adaptor	Warranty	Minimum 3 years manufacturer warranty			
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A.2	PRISM+ Arc Stealth Dual Monitor Arm atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>Desk-mounted dual monitor arm system</td></tr><tr><td>Supported Monitor Quantity</td><td>Supports two (2) monitors</td></tr><tr><td>Supported Monitor Size</td><td>Minimum 17" – 34" display monitors</td></tr><tr><td>Weight Capacity</td><td>Minimum 8 kg per monitor arm</td></tr><tr><td>Mounting Type</td><td>Desk clamp mount and grommet mount installation</td></tr><tr><td>VESA Compatibility</td><td>75 × 75 mm and 100 × 100 mm VESA mounting</td></tr><tr><td>Tilt Adjustment</td><td>Minimum +90° to 90° tilt range</td></tr><tr><td>Swivel Adjustment</td><td>Minimum ±90° swivel movement</td></tr><tr><td>Rotation</td><td>180° rotation (landscape / portrait orientation)</td></tr><tr><td>Arm Extension</td><td>Adjustable arm extension for ergonomic positioning</td></tr><tr><td>Cable Management</td><td>Integrated cable management system</td></tr><tr><td>Material</td><td>High-strength steel and aluminium alloy construction</td></tr><tr><td>Finish</td><td>Durable matte black powder-coated finish</td></tr><tr><td>Desk Compatibility</td><td>Suitable for desks approximately 10–50 mm thickness</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Desk-mounted dual monitor arm system	Supported Monitor Quantity	Supports two (2) monitors	Supported Monitor Size	Minimum 17" – 34" display monitors	Weight Capacity	Minimum 8 kg per monitor arm	Mounting Type	Desk clamp mount and grommet mount installation	VESA Compatibility	75 × 75 mm and 100 × 100 mm VESA mounting	Tilt Adjustment	Minimum +90° to 90° tilt range	Swivel Adjustment	Minimum ±90° swivel movement	Rotation	180° rotation (landscape / portrait orientation)	Arm Extension	Adjustable arm extension for ergonomic positioning	Cable Management	Integrated cable management system	Material	High-strength steel and aluminium alloy construction	Finish	Durable matte black powder-coated finish	Desk Compatibility	Suitable for desks approximately 10–50 mm thickness							
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B.2	Epson WorkForce ES-60W Wireless Portable Document Scanner atau yang setara <table><thead><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr></thead><tbody><tr><td>Device Type</td><td>Wireless portable sheet-fed document scanner</td></tr><tr><td>Scanning Technology</td><td>Contact Image Sensor (CIS)</td></tr><tr><td>Optical Resolution</td><td>Minimum 600 × 600 dpi</td></tr><tr><td>Maximum Resolution</td><td>Up to 1200 dpi interpolated</td></tr><tr><td>Scan Speed</td><td>Up to 4 seconds per page (single page scan)</td></tr><tr><td>Scanning Mode</td><td>Colour, grayscale and monochrome scanning</td></tr><tr><td>Maximum Document Size</td><td>Up to A4 (216 × 1828 mm)</td></tr><tr><td>Paper Handling</td><td>Supports plain paper, receipts, business cards and plastic ID cards</td></tr><tr><td>ADF Capacity</td><td>Single-sheet feed system</td></tr><tr><td>Daily Duty Cycle</td><td>Up to 300 pages per day</td></tr><tr><td>Connectivity</td><td>USB 2.0 (Micro-USB) and Wi-Fi (802.11 b/g/n)</td></tr><tr><td>Wireless Scanning</td><td>Supports scanning to PC, Mac, iOS and Android devices</td></tr><tr><td>Battery</td><td>Built-in rechargeable lithium-ion battery</td></tr><tr><td>Battery Capacity</td><td>Approx. 1140 mAh</td></tr><tr><td>Battery Performance</td><td>Up to 300 scans per full charge</td></tr><tr><td>Charging Method</td><td>Recharge via USB connection or AC adapter</td></tr><tr><td>Display</td><td>Built-in status LCD display (Wi-Fi and battery indicator)</td></tr><tr><td>Software Support</td><td>Epson ScanSmart software with OCR capability</td></tr><tr><td>File Output</td><td>Supports PDF, searchable PDF, JPEG, TIFF and editable Word/Excel formats</td></tr><tr><td>Operating System Support</td><td>Compatible with Windows and macOS</td></tr><tr><td>Warranty</td><td>Minimum 1-year manufacturer warranty</td></tr></tbody></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Wireless portable sheet-fed document scanner	Scanning Technology	Contact Image Sensor (CIS)	Optical Resolution	Minimum 600 × 600 dpi	Maximum Resolution	Up to 1200 dpi interpolated	Scan Speed	Up to 4 seconds per page (single page scan)	Scanning Mode	Colour, grayscale and monochrome scanning	Maximum Document Size	Up to A4 (216 × 1828 mm)	Paper Handling	Supports plain paper, receipts, business cards and plastic ID cards	ADF Capacity	Single-sheet feed system	Daily Duty Cycle	Up to 300 pages per day	Connectivity	USB 2.0 (Micro-USB) and Wi-Fi (802.11 b/g/n)	Wireless Scanning	Supports scanning to PC, Mac, iOS and Android devices	Battery	Built-in rechargeable lithium-ion battery	Battery Capacity	Approx. 1140 mAh	Battery Performance	Up to 300 scans per full charge	Charging Method	Recharge via USB connection or AC adapter	Display	Built-in status LCD display (Wi-Fi and battery indicator)	Software Support	Epson ScanSmart software with OCR capability	File Output	Supports PDF, searchable PDF, JPEG, TIFF and editable Word/Excel formats	Operating System Support	Compatible with Windows and macOS	Warranty	Minimum 1-year manufacturer warranty			
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B.3	Epson LQ-590 II Impact Printer atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Printer Type</td><td>24-Pin Impact Dot Matrix Printer</td></tr><tr><td>Printing Method</td><td>Serial Impact Dot Matrix</td></tr><tr><td>Number of Pins</td><td>24 Pins</td></tr><tr><td>Print Direction</td><td>Bidirectional with Logic Seeking</td></tr><tr><td>Print Width</td><td>80 Columns</td></tr><tr><td>Print Speed</td><td>Up to 550 cps (10 cpi) Ultra Speed Draft</td></tr><tr><td>Draft Speed</td><td>Up to 487 cps (10 cpi) High Speed Draft</td></tr><tr><td>Letter Quality Speed</td><td>Up to 145 cps</td></tr><tr><td>Print Resolution</td><td>Up to 360 x 180 dpi</td></tr><tr><td>Print Head Life</td><td>Minimum 400 Million Strokes/Wire</td></tr><tr><td>Ribbon Life</td><td>Minimum 5 Million Characters</td></tr><tr><td>Mean Time Between Failure (MTBF)</td><td>Minimum 25,000 Power-On Hours</td></tr><tr><td>Multipart Forms Capability</td><td>Minimum 1 Original + 6 Copies</td></tr><tr><td>Paper Handling</td><td>Continuous Forms, Single Sheets, Multipart Forms, Labels, Envelopes and Card Stock</td></tr><tr><td>Paper Feed Path</td><td>Front, Rear and Bottom Feed</td></tr><tr><td>Character Sets</td><td>Standard and International Character Sets</td></tr><tr><td>Barcode Support</td><td>Code 39, Code 128, EAN-8, EAN-13, UPC-A, UPC-E, Interleaved 2 of 5, POSTNET</td></tr><tr><td>Printer Languages</td><td>Epson ESC/P2 and IBM PPDS Emulation</td></tr><tr><td>Connectivity</td><td>USB 2.0 High-Speed and Parallel Interface</td></tr><tr><td>Operating Systems Supported</td><td>Microsoft Windows 10, Windows 11 or later</td></tr><tr><td>Control Panel</td><td>Integrated Control Panel with Status LEDs and Function Buttons</td></tr><tr><td>Included Accessories</td><td>Ribbon Cartridge, Power Cable, Tractor Unit, User Guide and Drivers</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Printer Type	24-Pin Impact Dot Matrix Printer	Printing Method	Serial Impact Dot Matrix	Number of Pins	24 Pins	Print Direction	Bidirectional with Logic Seeking	Print Width	80 Columns	Print Speed	Up to 550 cps (10 cpi) Ultra Speed Draft	Draft Speed	Up to 487 cps (10 cpi) High Speed Draft	Letter Quality Speed	Up to 145 cps	Print Resolution	Up to 360 x 180 dpi	Print Head Life	Minimum 400 Million Strokes/Wire	Ribbon Life	Minimum 5 Million Characters	Mean Time Between Failure (MTBF)	Minimum 25,000 Power-On Hours	Multipart Forms Capability	Minimum 1 Original + 6 Copies	Paper Handling	Continuous Forms, Single Sheets, Multipart Forms, Labels, Envelopes and Card Stock	Paper Feed Path	Front, Rear and Bottom Feed	Character Sets	Standard and International Character Sets	Barcode Support	Code 39, Code 128, EAN-8, EAN-13, UPC-A, UPC-E, Interleaved 2 of 5, POSTNET	Printer Languages	Epson ESC/P2 and IBM PPDS Emulation	Connectivity	USB 2.0 High-Speed and Parallel Interface	Operating Systems Supported	Microsoft Windows 10, Windows 11 or later	Control Panel	Integrated Control Panel with Status LEDs and Function Buttons	Included Accessories	Ribbon Cartridge, Power Cable, Tractor Unit, User Guide and Drivers			
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C.1	Apple Magic Keyboard for ipad 11" M4/M5 atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Reference Model</td><td>Apple Magic Keyboard for iPad Pro 11-inch or equivalent</td></tr><tr><td>Compatibility</td><td>Compatible with iPad Pro 11-inch (latest generation or equivalent)</td></tr><tr><td>Connection Type</td><td>Smart Connector with magnetic attachment</td></tr><tr><td>Keyboard Type</td><td>Full-size keyboard with backlit keys</td></tr><tr><td>Key Mechanism</td><td>Scissor-switch mechanism</td></tr><tr><td>Key Travel</td><td>Approximately 1 mm key travel</td></tr><tr><td>Trackpad</td><td>Built-in multi-touch trackpad supporting iPadOS gestures</td></tr><tr><td>Design</td><td>Floating cantilever design allowing adjustable viewing angles</td></tr><tr><td>Function Row</td><td>Integrated function key row for brightness, volume, media control, etc.</td></tr><tr><td>Charging Port</td><td>USB-C pass-through charging port</td></tr><tr><td>Protection</td><td>Provides front and back protection for the iPad</td></tr><tr><td>Build Material</td><td>Premium keyboard case with durable hinge mechanism</td></tr><tr><td>Operating System Support</td><td>Compatible with iPadOS 17 or later</td></tr><tr><td>Additional Features</td><td>Supports multi-touch gestures and cursor control via trackpad</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Reference Model	Apple Magic Keyboard for iPad Pro 11-inch or equivalent	Compatibility	Compatible with iPad Pro 11-inch (latest generation or equivalent)	Connection Type	Smart Connector with magnetic attachment	Keyboard Type	Full-size keyboard with backlit keys	Key Mechanism	Scissor-switch mechanism	Key Travel	Approximately 1 mm key travel	Trackpad	Built-in multi-touch trackpad supporting iPadOS gestures	Design	Floating cantilever design allowing adjustable viewing angles	Function Row	Integrated function key row for brightness, volume, media control, etc.	Charging Port	USB-C pass-through charging port	Protection	Provides front and back protection for the iPad	Build Material	Premium keyboard case with durable hinge mechanism	Operating System Support	Compatible with iPadOS 17 or later	Additional Features	Supports multi-touch gestures and cursor control via trackpad									
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C.2	Logitech Spotlight Wireless Presenter atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>Wireless presentation remote / presenter</td></tr><tr><td>Connectivity</td><td>Bluetooth Low Energy or USB receiver (2.4 GHz)</td></tr><tr><td>Operating Range</td><td>Up to 30 m (100 ft)</td></tr><tr><td>Pointer Type</td><td>Advanced digital pointer (highlight / magnify)</td></tr><tr><td>Controls</td><td>Next, Back, Highlight buttons</td></tr><tr><td>Compatibility</td><td>Windows, macOS, PowerPoint, Keynote, Google Slides</td></tr><tr><td>Battery</td><td>Rechargeable Lithium-Polymer battery</td></tr><tr><td>Charging</td><td>USB-C charging</td></tr><tr><td>Battery Life</td><td>Up to 3 months per full charge</td></tr><tr><td>Sensors</td><td>3D accelerometer & gyroscope</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Wireless presentation remote / presenter	Connectivity	Bluetooth Low Energy or USB receiver (2.4 GHz)	Operating Range	Up to 30 m (100 ft)	Pointer Type	Advanced digital pointer (highlight / magnify)	Controls	Next, Back, Highlight buttons	Compatibility	Windows, macOS, PowerPoint, Keynote, Google Slides	Battery	Rechargeable Lithium-Polymer battery	Charging	USB-C charging	Battery Life	Up to 3 months per full charge	Sensors	3D accelerometer & gyroscope																	
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C.3	Honeywell Xenon 1902g Wireless Barcode Scanner atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>Wireless handheld 1D / 2D barcode scanner</td></tr><tr><td>Scanning Technology</td><td>Area-imaging technology with Adaptus™ Imaging Technology 6.0</td></tr><tr><td>Supported Barcode Types</td><td>1D, 2D, PDF417, QR Code, Data Matrix, Aztec</td></tr><tr><td>Connectivity</td><td>Bluetooth wireless communication</td></tr><tr><td>Wireless Range</td><td>Minimum 10 m (33 ft) operating range from base station</td></tr><tr><td>Scanning Performance</td><td>High-speed omnidirectional barcode scanning</td></tr><tr><td>Sensor Type</td><td>Custom area imager optimized for barcode scanning</td></tr><tr><td>Mobile Barcode Support</td><td>Capable of scanning barcodes from smartphone and tablet screens</td></tr><tr><td>Scanning Mode</td><td>Handheld trigger scanning</td></tr><tr><td>Image Capture</td><td>Supports image capture and digital image processing</td></tr><tr><td>Battery</td><td>Rechargeable Lithium-Ion battery</td></tr><tr><td>Battery Life</td><td>Up to 14 hours of continuous operation</td></tr><tr><td>Drop Resistance</td><td>Minimum 1.8 m (6 ft) drop resistance</td></tr><tr><td>Environmental Protection</td><td>Industrial-grade rugged construction</td></tr><tr><td>Indicator</td><td>LED indicator and audible beeper feedback</td></tr><tr><td>Host Interface</td><td>USB / Keyboard Wedge / RS-232 / IBM POS interface support</td></tr><tr><td>Charging Method</td><td>Charging via communication base station or USB cable</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Wireless handheld 1D / 2D barcode scanner	Scanning Technology	Area-imaging technology with Adaptus™ Imaging Technology 6.0	Supported Barcode Types	1D, 2D, PDF417, QR Code, Data Matrix, Aztec	Connectivity	Bluetooth wireless communication	Wireless Range	Minimum 10 m (33 ft) operating range from base station	Scanning Performance	High-speed omnidirectional barcode scanning	Sensor Type	Custom area imager optimized for barcode scanning	Mobile Barcode Support	Capable of scanning barcodes from smartphone and tablet screens	Scanning Mode	Handheld trigger scanning	Image Capture	Supports image capture and digital image processing	Battery	Rechargeable Lithium-Ion battery	Battery Life	Up to 14 hours of continuous operation	Drop Resistance	Minimum 1.8 m (6 ft) drop resistance	Environmental Protection	Industrial-grade rugged construction	Indicator	LED indicator and audible beeper feedback	Host Interface	USB / Keyboard Wedge / RS-232 / IBM POS interface support	Charging Method	Charging via communication base station or USB cable			
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D	Camera & Vision																																													
D.1	Insta360 Link 2 Pro AI 4K Webcam atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>AI-powered 4K webcam with intelligent tracking</td></tr><tr><td>Image Sensor</td><td>Minimum 1/1.3-inch CMOS sensor</td></tr><tr><td>Video Resolution</td><td>Up to 4K UHD (3840 × 2160) @30fps</td></tr><tr><td>Alternative Resolution</td><td>1080p @60fps, 720p video modes</td></tr><tr><td>Lens Aperture</td><td>Approx. f/1.9 aperture</td></tr><tr><td>Field of View</td><td>Approximately 84° wide viewing angle</td></tr><tr><td>Focus System</td><td>Phase detection autofocus (12 cm – ∞)</td></tr><tr><td>AI Tracking</td><td>AI subject tracking with motorized 2-axis gimbal</td></tr><tr><td>Auto Framing</td><td>AI auto framing for individual or group participants</td></tr><tr><td>AI Features</td><td>AI tracking, gesture control, DeskView mode, Whiteboard mode, portrait mode, virtual background</td></tr><tr><td>HDR Support</td><td>HDR video support for improved lighting balance</td></tr><tr><td>Zoom</td><td>Up to 4× digital zoom</td></tr><tr><td>Audio</td><td>Dual microphones with beamforming and AI noise cancellation</td></tr><tr><td>Connectivity</td><td>USB-C interface (USB-C to USB-A adapter supported)</td></tr><tr><td>Mounting</td><td>Magnetic mount with 1/4" tripod thread compatibility</td></tr><tr><td>Orientation</td><td>Supports landscape and portrait orientation</td></tr><tr><td>Software Support</td><td>Compatible with Zoom, Microsoft Teams, Google Meet, OBS and streaming platforms</td></tr><tr><td>Operating System</td><td>Windows and macOS compatible</td></tr><tr><td>Power Source</td><td>Powered via USB connection</td></tr><tr><td>Build</td><td>Compact webcam body with integrated 2-axis gimbal tracking system</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	AI-powered 4K webcam with intelligent tracking	Image Sensor	Minimum 1/1.3-inch CMOS sensor	Video Resolution	Up to 4K UHD (3840 × 2160) @30fps	Alternative Resolution	1080p @60fps, 720p video modes	Lens Aperture	Approx. f/1.9 aperture	Field of View	Approximately 84° wide viewing angle	Focus System	Phase detection autofocus (12 cm – ∞)	AI Tracking	AI subject tracking with motorized 2-axis gimbal	Auto Framing	AI auto framing for individual or group participants	AI Features	AI tracking, gesture control, DeskView mode, Whiteboard mode, portrait mode, virtual background	HDR Support	HDR video support for improved lighting balance	Zoom	Up to 4× digital zoom	Audio	Dual microphones with beamforming and AI noise cancellation	Connectivity	USB-C interface (USB-C to USB-A adapter supported)	Mounting	Magnetic mount with 1/4" tripod thread compatibility	Orientation	Supports landscape and portrait orientation	Software Support	Compatible with Zoom, Microsoft Teams, Google Meet, OBS and streaming platforms	Operating System	Windows and macOS compatible	Power Source	Powered via USB connection	Build	Compact webcam body with integrated 2-axis gimbal tracking system			
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BIL.	SPEKIFIKASI	YA	TIDAK	CATATAN																																		
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E.1	SanDisk Ultra Dual Drive Go atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>USB Flash Drive with dual connector (USB-C and USB-A)</td></tr><tr><td>Storage Capacity</td><td>Minimum 256 GB flash storage</td></tr><tr><td>Interface</td><td>USB Type-C and USB Type-A connectors</td></tr><tr><td>USB Standard</td><td>USB 3.2 Gen 1 / USB 3.1 Gen 1</td></tr><tr><td>Read Speed</td><td>Up to 150 MB/s read speed</td></tr><tr><td>Compatibility</td><td>Compatible with Windows, macOS, Android and USB-C mobile devices</td></tr><tr><td>OTG Support</td><td>Supports USB On-The-Go (OTG) devices</td></tr><tr><td>Design</td><td>Swivel design to protect connectors</td></tr><tr><td>Backup Support</td><td>Compatible with SanDisk Memory Zone application for file backup</td></tr><tr><td>Build Material</td><td>Durable plastic housing</td></tr><tr><td>Attachment</td><td>Integrated keyring hole for portability</td></tr><tr><td>Operating Temperature</td><td>Typical consumer flash drive operating range</td></tr><tr><td>Warranty</td><td>Minimum 5-year limited manufacturer warranty</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	USB Flash Drive with dual connector (USB-C and USB-A)	Storage Capacity	Minimum 256 GB flash storage	Interface	USB Type-C and USB Type-A connectors	USB Standard	USB 3.2 Gen 1 / USB 3.1 Gen 1	Read Speed	Up to 150 MB/s read speed	Compatibility	Compatible with Windows, macOS, Android and USB-C mobile devices	OTG Support	Supports USB On-The-Go (OTG) devices	Design	Swivel design to protect connectors	Backup Support	Compatible with SanDisk Memory Zone application for file backup	Build Material	Durable plastic housing	Attachment	Integrated keyring hole for portability	Operating Temperature	Typical consumer flash drive operating range	Warranty	Minimum 5-year limited manufacturer warranty									
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E.3	WD My Passport 4TB Portable External Hard Drive atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>Portable external hard disk drive</td></tr><tr><td>Storage Capacity</td><td>Minimum 4 TB</td></tr><tr><td>Drive Type</td><td>2.5-inch portable hard disk drive (HDD)</td></tr><tr><td>Interface</td><td>USB 3.2 Gen 1 / USB 3.0 interface</td></tr><tr><td>Connector Type</td><td>USB-C with USB-A adapter cable</td></tr><tr><td>Data Transfer Rate</td><td>Up to 5 Gb/s (USB 3.2 Gen 1)</td></tr><tr><td>Read/Write Speed</td><td>Approx. 120–140 MB/s typical transfer speed</td></tr><tr><td>Power Source</td><td>USB powered (no external power adapter required)</td></tr><tr><td>Security</td><td>256-bit AES hardware encryption with password protection</td></tr><tr><td>Software Support</td><td>Compatible with WD Backup software and device management utilities</td></tr><tr><td>Compatibility</td><td>Supports Windows, macOS (reformat required)</td></tr><tr><td>Design</td><td>Compact palm-size portable design</td></tr><tr><td>Build</td><td>Durable plastic enclosure</td></tr><tr><td>Operating System Support</td><td>Windows 10/11, macOS (via reformat)</td></tr><tr><td>Operating Temperature</td><td>Typical portable storage operating range</td></tr><tr><td>Warranty</td><td>Minimum 3-year manufacturer limited warranty</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Portable external hard disk drive	Storage Capacity	Minimum 4 TB	Drive Type	2.5-inch portable hard disk drive (HDD)	Interface	USB 3.2 Gen 1 / USB 3.0 interface	Connector Type	USB-C with USB-A adapter cable	Data Transfer Rate	Up to 5 Gb/s (USB 3.2 Gen 1)	Read/Write Speed	Approx. 120–140 MB/s typical transfer speed	Power Source	USB powered (no external power adapter required)	Security	256-bit AES hardware encryption with password protection	Software Support	Compatible with WD Backup software and device management utilities	Compatibility	Supports Windows, macOS (reformat required)	Design	Compact palm-size portable design	Build	Durable plastic enclosure	Operating System Support	Windows 10/11, macOS (via reformat)	Operating Temperature	Typical portable storage operating range	Warranty	Minimum 3-year manufacturer limited warranty			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																														
E.4	SanDisk Extreme PRO 512GB UHS-I SDXC atau yang setara <table><tr><td>ITEM</td><td>MINIMUM SPECIFICATION</td></tr><tr><td>Device Type</td><td>Secure Digital SDXC memory card</td></tr><tr><td>Storage Capacity</td><td>Minimum 512 GB</td></tr><tr><td>Card Type</td><td>SDXC (Secure Digital eXtended Capacity)</td></tr><tr><td>Bus Interface</td><td>UHS-I</td></tr><tr><td>Speed Class</td><td>Class 10, UHS Speed Class 3 (U3)</td></tr><tr><td>Video Speed Class</td><td>V30</td></tr><tr><td>Maximum Read Speed</td><td>Up to 200 MB/s read speed</td></tr><tr><td>Maximum Write Speed</td><td>Up to 140 MB/s write speed</td></tr><tr><td>Application</td><td>Suitable for DSLR, mirrorless cameras, action cameras and professional photography</td></tr><tr><td>Video Recording Support</td><td>Supports Full HD and 4K UHD video recording</td></tr><tr><td>Burst Photography</td><td>Supports continuous burst shooting and RAW image capture</td></tr><tr><td>Durability</td><td>Waterproof, temperature-proof, shockproof and X-ray proof</td></tr><tr><td>Physical Protection</td><td>Built-in write-protect switch</td></tr><tr><td>Warranty</td><td>Limited lifetime manufacturer warranty</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Secure Digital SDXC memory card	Storage Capacity	Minimum 512 GB	Card Type	SDXC (Secure Digital eXtended Capacity)	Bus Interface	UHS-I	Speed Class	Class 10, UHS Speed Class 3 (U3)	Video Speed Class	V30	Maximum Read Speed	Up to 200 MB/s read speed	Maximum Write Speed	Up to 140 MB/s write speed	Application	Suitable for DSLR, mirrorless cameras, action cameras and professional photography	Video Recording Support	Supports Full HD and 4K UHD video recording	Burst Photography	Supports continuous burst shooting and RAW image capture	Durability	Waterproof, temperature-proof, shockproof and X-ray proof	Physical Protection	Built-in write-protect switch	Warranty	Limited lifetime manufacturer warranty			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN
F	Video wall			

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN
F.1	Videowall 2x2(4 Panels)			
	LG 55VM5J-H atau setara			
	ITEM			
	System Type			Video Wall System configuration 2x2 (4 panels) complete with controller, mounting system and installation accessories
	Main Display			Professional Video Wall Display
	Display Size			Minimum 55 inch
	Panel Type			IPS LCD Panel or equivalent
	Resolution			1920 × 1080 (Full HD)
	Brightness			Minimum 500 nits
	Bezel			Ultra-narrow bezel maximum ?1.8 mm bezel-to-bezel
	Viewing Angle			Minimum 178° (H/V)
	Operation			Supports 24/7 continuous operation
	Video Input			HDMI / DisplayPort / DVI or equivalent
	Number of Panels			4 units for 2x2 configuration
	Display Arrangement			Supports Video Wall Matrix 2x2
	Driger 4K Video Wall Controller 2x2 atau setara			
	ITEM			MINIMUM SPECIFICATION
	Device Type			Video Wall Controller / Processor
	Reference Model			Driger 4K Video Wall Controller 2x2 or equivalent
	Input			Minimum 1 × HDMI 4K input
	Output			Minimum 4 × HDMI outputs
	Display Configuration			Supports 2x2, 1x4, 4x1 layout
	Input Resolution			Up to 4K
	Output Resolution			Minimum 1080p for each display
	Function			Video scaling, screen splitting and simultaneous display
	North Bayou Videowall Mount atau setara			
	ITEM			MINIMUM SPECIFICATION
	Mount Type			Professional Video Wall Mounting System
	Supported Size			Minimum 45" – 60" display
	Load Capacity			Minimum 50 kg per panel
	Adjustment			Micro-adjustment alignment to ensure precise screen alignment
	Maintenance			Push-out design for maintenance access
	Kabel dah kemasan			ITEM
	HDMI Cable			SPESIFIKASI MINIMUM
	Cable Quantity			HDMI 2.0 / 2.1 supporting 4K @ 60Hz
	Power Supply			Minimum 4 units HDMI cable
	Cable Management			Power cables and extension sockets sufficient for all displays
	Pemasangan			Includes cable trunking / cable concealment system
	ITEM			MINIMUM SPECIFICATION
	Installation			Complete installation including mounting structure and cabling
	Alignment			Video wall display alignment adjustment
	Calibration			Display and color calibration
	Configuration			Video wall controller configuration and display setup
	Testing			System functionality testing before handover
	Keperluan			ITEM
	System Configuration			SPESIFIKASI MINIMUM
	Compatibility			Complete Video Wall System 2x2 (4 panels) including display panels, video wall controller, mounting system, cables and accessories
	Display Synchronization			All components supplied must be fully compatible and integrated for video wall operation
	Content Display			System must support synchronized display across all panels
	Signal Source			Must support display of single full-screen content or multiple split-screen layouts
	Power Requirement			Must support input from PC, laptop or media player via HDMI
	Warranty			System must support standard 240V AC power supply
	ITEM			MINIMUM SPECIFICATION
	Warranty Period			Minimum Three (3) Years Warranty
	Warranty Type			On-site warranty support
	Coverage			Warranty must cover display panels, controller and mounting hardware

BIL.	SPEKIFIKASI	YA	TIDAK	CATATAN																																																																						
G	Infrastructure																																																																									
G.1	FingerTec Face ID 5 atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Device Type</td><td>Biometric Access Control & Time Attendance Terminal</td></tr><tr><td>Authentication Methods</td><td>Face Recognition, Fingerprint, Palm, NFC Mi-Fare Card, QR Code</td></tr><tr><td>Camera</td><td>2MP WDR Low-Light Camera</td></tr><tr><td>Fingerprint Sensor</td><td>High Resolution Optical Sensor</td></tr><tr><td>Processor (CPU)</td><td>Dual-Core Processor (? 900 MHz)</td></tr><tr><td>Memory</td><td>? 512MB RAM, ? 8GB Flash Storage</td></tr><tr><td>Face Capacity</td><td>? 6,000 users</td></tr><tr><td>Fingerprint Capacity</td><td>? 6,000 templates</td></tr><tr><td>Palm Capacity</td><td>? 3,000 templates</td></tr><tr><td>Transaction Logs</td><td>? 200,000 records</td></tr><tr><td>Verification Methods</td><td>Face (1:N), Fingerprint (1:1 & 1:N), Palm, Card</td></tr><tr><td>Verification Speed</td><td>Face ? 2 seconds, Fingerprint ? 1 second</td></tr><tr><td>Display</td><td>? 5-inch TFT Color Touch Screen</td></tr><tr><td>Communication</td><td>TCP/IP, RS485, WiFi</td></tr><tr><td>Software Integration</td><td>Compatible with Ingress Software</td></tr><tr><td>Additional Features</td><td>Mask Detection, Anti-Spoofing Technology, Low-Light Recognition</td></tr><tr><td>Material</td><td>Glass Front Panel with Aluminium Frame</td></tr><tr><td>Installation</td><td>Wall Mount / Bracket Mount</td></tr><tr><td>Power Supply</td><td>DC 12V Adapter / P.O.E</td></tr><tr><td>Backup Power</td><td>UPS installation for power failure protection</td></tr><tr><td>Warranty</td><td>Minimum 2 Years Manufacturer Warranty</td></tr></table> PEMASANGAN (INSTALLATION) <table><tr><th>ITEM</th><th>DESCRIPTION</th></tr><tr><td>Supply & Delivery</td><td>Vendor shall supply and deliver the complete device including mounting bracket, power adapter, and required accessories.</td></tr><tr><td>Site Preparation</td><td>Vendor shall inspect installation location, confirm power point availability (DC 12V) and network point (LAN).</td></tr><tr><td>Physical Installation</td><td>Mounting of device on wall or bracket at designated entry point with proper alignment and height positioning.</td></tr><tr><td>Cabling Works</td><td>Installation and routing of power cable and network cable (CAT6) including trunking where required.</td></tr><tr><td>Power Connection</td><td>Connection to power supply and ensure stable power delivery to device.</td></tr><tr><td>Network Configuration</td><td>Configuration of IP Address, Subnet Mask, Gateway and communication settings</td></tr><tr><td>System Integration</td><td>Integration with existing attendance system or access control system.</td></tr><tr><td>Device Setup</td><td>Configuration of device mode (Access Control / Time Attendance), user roles and verification settings.</td></tr><tr><td>Testing & Commissioning</td><td>Full system testing including access verification, door trigger, and data transmission.</td></tr><tr><td>Training</td><td>Basic training for administrator on device usage, user management, and reporting.</td></tr><tr><td>Documentation</td><td>Provide installation report, configuration details, and user manual.</td></tr><tr><td>Warranty Support</td><td>Provide warranty support and basic technical support during warranty period.</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Device Type	Biometric Access Control & Time Attendance Terminal	Authentication Methods	Face Recognition, Fingerprint, Palm, NFC Mi-Fare Card, QR Code	Camera	2MP WDR Low-Light Camera	Fingerprint Sensor	High Resolution Optical Sensor	Processor (CPU)	Dual-Core Processor (? 900 MHz)	Memory	? 512MB RAM, ? 8GB Flash Storage	Face Capacity	? 6,000 users	Fingerprint Capacity	? 6,000 templates	Palm Capacity	? 3,000 templates	Transaction Logs	? 200,000 records	Verification Methods	Face (1:N), Fingerprint (1:1 & 1:N), Palm, Card	Verification Speed	Face ? 2 seconds, Fingerprint ? 1 second	Display	? 5-inch TFT Color Touch Screen	Communication	TCP/IP, RS485, WiFi	Software Integration	Compatible with Ingress Software	Additional Features	Mask Detection, Anti-Spoofing Technology, Low-Light Recognition	Material	Glass Front Panel with Aluminium Frame	Installation	Wall Mount / Bracket Mount	Power Supply	DC 12V Adapter / P.O.E	Backup Power	UPS installation for power failure protection	Warranty	Minimum 2 Years Manufacturer Warranty	ITEM	DESCRIPTION	Supply & Delivery	Vendor shall supply and deliver the complete device including mounting bracket, power adapter, and required accessories.	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G.2	IANZ V1 Smart door Lock atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Product Type</td><td>Smart Digital Door Lock</td></tr><tr><td>Unlock Methods</td><td>Fingerprint, PIN Code, RFID Card, Mobile Application, Mechanical Key</td></tr><tr><td>Fingerprint Sensor</td><td>Semiconductor Fingerprint Sensor</td></tr><tr><td>Fingerprint Capacity</td><td>Minimum 100 Fingerprints</td></tr><tr><td>PIN Code Capacity</td><td>Minimum 100 User PIN Codes</td></tr><tr><td>RFID Card Capacity</td><td>Minimum 100 RFID Cards</td></tr><tr><td>Mobile Access</td><td>Wi-Fi or Bluetooth App Control</td></tr><tr><td>Mobile Application</td><td>Android and iOS Supported</td></tr><tr><td>Remote Unlock</td><td>Supported via Mobile Application</td></tr><tr><td>Temporary Access Code</td><td>Supported</td></tr><tr><td>Access Log / Audit Trail</td><td>Supported</td></tr><tr><td>Auto Lock Function</td><td>Supported</td></tr><tr><td>Manual Lock Function</td><td>Supported</td></tr><tr><td>Anti-Peep Password</td><td>Supported</td></tr><tr><td>Fake PIN Protection</td><td>Supported</td></tr><tr><td>Wrong Attempt Alarm</td><td>Supported</td></tr><tr><td>Low Battery Alert</td><td>Supported</td></tr><tr><td>Emergency Power Supply</td><td>USB Type-C Emergency Charging Port</td></tr><tr><td>Mechanical Override Key</td><td>Included</td></tr><tr><td>Door Thickness Supported</td><td>35 mm – 90 mm</td></tr><tr><td>Door Material Compatibility</td><td>Wooden, Metal and Composite Doors</td></tr><tr><td>Lock Body Type</td><td>Mortise Lock</td></tr><tr><td>Power Supply</td><td>4 × AA Alkaline Batteries</td></tr><tr><td>Battery Life</td><td>Up to 12 Months</td></tr><tr><td>Indoor/Outdoor Installation</td><td>Suitable for Covered Indoor and Outdoor Areas</td></tr><tr><td>Construction Material</td><td>Zinc Alloy / Aluminium Alloy Body</td></tr><tr><td>Finish Colour</td><td>Black or Equivalent</td></tr><tr><td>Voice Guidance</td><td>English Voice Prompt</td></tr><tr><td>Security Features</td><td>Anti-Tamper Alarm, Forced Entry Alarm, Anti-Hacking Protection</td></tr><tr><td>Certifications</td><td>CE, FCC, RoHS or Equivalent</td></tr><tr><td>Included Accessories</td><td>Smart Lock Unit, Mortise Lock Body, RFID Cards, Mechanical Keys, Mounting Kit, User Manual</td></tr><tr><td>Warranty</td><td>Minimum 2 Years Manufacturer Warranty</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Product Type	Smart Digital Door Lock	Unlock Methods	Fingerprint, PIN Code, RFID Card, Mobile Application, Mechanical Key	Fingerprint Sensor	Semiconductor Fingerprint Sensor	Fingerprint Capacity	Minimum 100 Fingerprints	PIN Code Capacity	Minimum 100 User PIN Codes	RFID Card Capacity	Minimum 100 RFID Cards	Mobile Access	Wi-Fi or Bluetooth App Control	Mobile Application	Android and iOS Supported	Remote Unlock	Supported via Mobile Application	Temporary Access Code	Supported	Access Log / Audit Trail	Supported	Auto Lock Function	Supported	Manual Lock Function	Supported	Anti-Peep Password	Supported	Fake PIN Protection	Supported	Wrong Attempt Alarm	Supported	Low Battery Alert	Supported	Emergency Power Supply	USB Type-C Emergency Charging Port	Mechanical Override Key	Included	Door Thickness Supported	35 mm – 90 mm	Door Material Compatibility	Wooden, Metal and Composite Doors	Lock Body Type	Mortise Lock	Power Supply	4 × AA Alkaline Batteries	Battery Life	Up to 12 Months	Indoor/Outdoor Installation	Suitable for Covered Indoor and Outdoor Areas	Construction Material	Zinc Alloy / Aluminium Alloy Body	Finish Colour	Black or Equivalent	Voice Guidance	English Voice Prompt	Security Features	Anti-Tamper Alarm, Forced Entry Alarm, Anti-Hacking Protection	Certifications	CE, FCC, RoHS or Equivalent	Included Accessories	Smart Lock Unit, Mortise Lock Body, RFID Cards, Mechanical Keys, Mounting Kit, User Manual	Warranty	Minimum 2 Years Manufacturer Warranty			
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