LOTUL nr.8

SISTEM DE SURSĂ DE ALIMENTARE NEÎNTRERUPTIBILĂ şi SISTEM PERETE VIDEO

UPS		
GENERIC SPECIFICATIONS		**QUANTITY**
Type:	Online Modular 3-Phase N+1	
Output Capacity:	min. 60kW (30kW with N+1 Configuration); Supports 110% of load for min. 1 hour	
Nominal Output Voltage:	220V/380V; 230V/400V	
Nominal Input Voltage:	220/380V (3ph); 230/400V (3ph)	
Output AC Waveform (AC and Battery Mode):	Pure Sine wave	
Frequency Compatibility:	50/60Hz; Auto-selectable and user adjustable	
Voltage Regulation:	Online, double-conversion power conditioning	
Power Modules:	2x Power modules min. 30kW each; support installation additional min. 2x power modules	
Output Receptacles:	Hardwire (3P, N, E)	
Input Receptacles:	2x hardwire input connections with combine 3-Phase Wye, 4 wire (3P, N, E) inputs from two separate power sources	
Output Circuit Breakers:	3x pole magnetic breaker	
Overvoltage/ Undervoltage Correction	Support continuous output in online mode w/o using battery, during overvoltages up to 470V; Support continuous output in online mode w/o using battery, during undervoltage conditions up to 320V	1
Battery Runtime (Full Load 30kW):	min. 15 minutes; possibility of increasing the autonomous operation time of the UPS up to 6 hours (full load) with additional battery modules	
Expandable Battery:	yes, up to 4x additional modules	
Battery Type:	Hot-swappable, replaceable batteries	
Battery Life:	up to 7 years	
Alarm signal:	Audible Alarm Alarms signal for low-battery, overload, shutdown, bypass etc	
Connectivity:	DB9; SNMP interface	
Management:	Network card; Management software; LCD display with indication of mode of operation and real-time event log screen	
Interference suppression:	Suppression of electromagnetic / radio frequency interference	
Line/Battery transfer	0 ms	
HA functionality:	Automatic inverter bypass; Hot swappable batteries; possibility parallel configuration 1+1; Cold-start operation support	
Warranty:	2 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)	

Video Wall Infrastructure		
GENERIC SPECIFICATIONS		**QUANTITY**
Video Wall Type I		
Quantity of Display:	9 (3x3)	
Display Size:	55"	
Display resolution:	FHD (1920x1080)	
Video Wall resolution:	up to 4K	
Contrast:	min. 4000:1 (Static Mode) or min. 500000:1 (Dynamic Mode)	1
Brightness:	min. 500 cd/m²	
Viewing angle:	178 (H)/178 (V)	
Bezel widht:	max 3,5mm	
VESA Mount support:	yes	

Portrait/Landscape orientation:	yes
Reliability:	24/7 operation; MTBF min. 60000 hours
Display Color:	min. 1 billion
Integrated Video Controller:	built-in bay for media/video player with support Android or Tizen OS
Connectivity:	Input interfaces (min. HDMI, Display Port, VGA, USB, Audio); Output Interfaces (DP, RS232, RJ45, Audio); OPS; Signal Loop supported via Display Port, IR, RS232
Management control:	IR; RS232; RJ45
Quality of image and calibration:	Color gamut min 72% of RGB; integrated comprehensive video wall calibration after montage of system; integrated burn-in protection that prevents fixed images from sticking on the screen; glare protection
Display Protection:	Heat and dust Resistant
Audio:	min. 20W (RMS) active speakers
Energy Consumption ("On" mode)	Max. 140W
Wall Mount:	Wall mounting system and displays must be of the same manufacturer or official supplier of manufacturer; Should allow any element of the video wall to be serviced without removing other displays; Wall mounting system must ensure the installation of panels without any gaps
Other:	all necessary cables (power and interface) should be included in the set
Warranty:	3 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)
Video/Graphics Controller	
Type	Dual Sockets Workstation with support installation to RackCabinet
Processor	2x processors last generation with min. 2,1GHz base frequency/11MB cache/8 cores/Hyper-Threading support
Memory Options:	min. 6x DIMMs per CPU; min. 32GB DDR4 ECC
Storage:	min. 2x 256GB NVMe PCIe SSD (MLC; MTBF min. 1,5mln hours; Random Read min. 250K IOPS) in RAID 1; 1x 1TB 3.5"HDD SATA 7200 rpm (256MB cache, Enterprise Class, reliability 24/7)
Ports:	min. 10x USB 3.1; 4x RJ45
Slots:	min. 2x PCIE Gen3 x16; 4x PCIE Gen3 x4
Network:	2x 10GBase-T ports; 2x 1000Base-T ports
Graphics Card:	min. 8GB GDDR5; min. 240 GB/s Memory Bandwidth; min. 4x DP1.4 ports
Security:	Power-On/Setup Password; TPM 2.0; Side panel keylock
Power Supply	min. 1000W with 90% efficient (80PLUS Gold Certified); support connection up to 2x graphics cards
Software:	MS Windows 10 Pro Workstation Edition
Special Video Wall Management SW:	SW application for control the output of Video Stream (Support for streaming and playing video incl. Yuotube and similar services, IP cameras, WEB cameras of high resolution), HTML, Presentation MS PowerPoint, Images (jpg, .png without limiting the resolution of the file), PDF (viewing documents without limiting the size of the file), output of remote desktops via VNC protocal with management support, management of windows of running applications on the video wall; Software features: Move, delete and edit the size of the source window in real time; Snapping the main windows to the grid with possibility of editing; Preparation of grid templates, and independent editing of the grid in "advanced mode"; Possibility of making templates for the subsequent rapid display and management of them; Uploading content to the controller via the Web; Drag & Drop functionality; Work with last generation browsers on any modern platform (cross-platform); Password protection for client part of SW application; Remote switching of sources without using the remote control; Capture and playback of external sources (HDMI / DVI) in 1080p format; Technical Support incl. update of SW for min. 3 years

Warranty:	5 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)	
Video Wall Type II		
Quantity of Display:	6 (2x3)	
Display Size:	55"	
Display resolution:	FHD (1920x1080)	
Video Wall resolution:	up to 4K	
Contrast:	min. 4000:1 (Static Mode) or min. 500000:1 (Dynamic Mode)	
Brightness:	min. 500 cd/m²	
Viewing angle:	178 (H)/178 (V)	
Bezel widht:	max 3,5mm	
VESA Mount support:	yes	
Portrait/Landscape orientation:	yes	
Reliability:	24/7 operation; MTBF min. 60000 hours	
Display Color:	min. 1 billion	
Integrated Video Controller:	built-in bay for media/video player with support Android or Tizen OS	
Connectivity:	Input interfaces (min. HDMI, Display Port, VGA, USB, Audio); Output Interfaces (DP, RS232, RJ45, Audio); OPS; Signal Loop supported via Display Port, IR, RS232	
Management control:	IR; RS232; RJ45	
Quality of image and calibration:	Color gamut min 72% of RGB; integrated comprehensive video wall calibration after montage of system; integrated burn-in protection that prevents fixed images from sticking on the screen; glare protection	
Display Protection:	Heat and dust Resistant	
Audio:	min. 20W (RMS) active speakers	
Energy Consumption ("On" mode)	Max. 140W	
Wall Mount:	Wall mounting system and displays must be of the same manufacturer or official supplier of manufacturer; Should allow any element of the video wall to be serviced without removing other displays; Wall mounting system must ensure the installation of panels without any gaps	2
Other:	all necessary cables (power and interface) should be included in the set	
Warranty:	3Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)	
Video/Graphics Controller		
Type	Dual Sockets Workstation with support installation to RackCabinet	
Processor	2x processors last generation with min. 2,1GHz base frequency/11MB cache/8 cores/Hyper-Threading support	
Memory Options:	min. 6x DIMMs per CPU; min. 32GB DDR4 ECC	
Storage:	min. 2x 256GB NVMe PCIe SSD (MLC; MTBF min. 1,5mln hours; Random Read min. 250K IOPS) in RAID 1; 1x 1TB 3.5"HDD SATA 7200 rpm (256MB cache, Enterprise Class, reliability 24/7)	
Ports:	min. 10x USB 3.1; 4x RJ45	
Slots:	min. 2x PCIE Gen3 x16; 4x PCIE Gen3 x4	
Network:	2x 10GBase-T ports; 2x 1000Base-T ports	
Graphics Card:	One/Two graphics card with min. 6x DP 1.4 interfaces; each card must support min.8GB GDDR5; min. 240 GB/s Memory Bandwidth; additional synchronization card if will use two graphic cards	
Security:	Power-On/Setup Password; TPM 2.0; Side panel keylock	
Power Supply	min. 1000W with 90% efficient (80PLUS Gold Certified); support connection up to 2x graphics cards	
Software:	MS Windows 10 Pro Workstation Edition	

Special Video Wall Management SW:	SW application for control the output of Video Stream (Support for streaming and playing video incl. Yuotube and similar services, IP cameras, WEB cameras of high resolution), HTML, Presentation MS PowerPoint, Images (jpg, .png without limiting the resolution of the file), PDF (viewing documents without limiting the size of the file), output of remote desktops via VNC protocal with management support, management of windows of running applications on the video wall; Software features: Move, delete and edit the size of the source window in real time; Snapping the main windows to the grid with possibility of editing; Preparation of grid templates, and independent editing of the grid in "advanced mode"; Possibility of making templates for the subsequent rapid display and management of them; Uploading content to the controller via the Web; Drag & Drop functionality; Work with last generation browsers on any modern platform (cross-platform); Password protection for client part of SW application; Remote switching of sources without using the remote control; Capture and playback of external sources (HDMI / DVI) in 1080p format; Technical Support incl. update of SW for min. 3 years	
Warranty:	5 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)	
Video Wall Type III		
Quantity of Display:	4 (2x2)	
Display Size:	55"	
Display resolution:	FHD (1920x1080)	
Video Wall resolution:	up to 4K	
Contrast:	min. 4000:1 (Static Mode) or min. 500000:1 (Dynamic Mode)	
Brightness:	min. 500 cd/m²	
Viewing angle:	178 (H)/178 (V)	
Bezel widht:	max 3,5mm	
VESA Mount support:	yes	
Portrait/Landscape orientation:	yes	
Reliability:	24/7 operation; MTBF min. 60000 hours	
Display Color:	min. 1 billion	
Integrated Video Controller:	built-in bay for media/video player with support Android or Tizen OS	
Connectivity:	Input interfaces (min. HDMI, Display Port, VGA, USB, Audio); Output Interfaces (DP, RS232, RJ45, Audio); OPS; Signal Loop supported via Display Port, IR, RS232	
Management control:	IR; RS232; RJ45	
Quality of image and calibration:	Color gamut min 72% of RGB; integrated comprehensive video wall calibration after montage of system; integrated burn-in protection that prevents fixed images from sticking on the screen; glare protection	1
Display Protection:	Heat and dust Resistant	
Audio:	min. 20W (RMS) active speakers	
Energy Consumption ("On" mode)	Max. 140W	
Wall Mount:	Wall mounting system and displays must be of the same manufacturer or official supplier of manufacturer; Should allow any element of the video wall to be serviced without removing other displays; Wall mounting system must ensure the installation of panels without any gaps	
Other:	all necessary cables (power and interface) should be included in the set	
Warranty:	3 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)	
Video/Graphics Controller		
Type	Workstation with support installation to RackCabinet	
Processor	Processors last generation with min. 3,6GHz base frequency/11MB cache/8	

	cores/Hyper-Threading support
Memory Options:	min. 8x DIMMs; min. 16GB DDR4
Storage:	min. 2x 256GB NVMe PCIe SSD (MLC; MTBF min. 1,5mln hours; Random Read min. 250K IOPS) in RAID 1; 1x 1TB 3.5"HDD SATA 7200 rpm (256MB cache, Enterprise Class, reliability 24/7)
Ports:	min. 8x USB 3.1; 4x RJ45
Slots:	min. 2x PCIE Gen3 x16; 2x PCIE Gen3 x4
Network:	2x 10GBase-T ports; 2x 1000Base-T ports
Graphics Card:	min. 4GB GDDR5; min. 140 GB/s Memory Bandwidth; min. 4x DP1.4 ports
Security:	Power-On/Setup Password; TPM 2.0; Side panel keylock
Power Supply	min. 1000W with 90% efficient (80PLUS Gold Certified); support connection up to 2x graphics cards
Software:	MS Windows 10 Pro Workstation Edition w/downgrade to Win7 OEM
Special Video Wall Management SW:	SW application for control the output of Video Stream (Support for streaming and playing video incl. Yuotube and similar services, IP cameras, WEB cameras of high resolution), HTML, Presentation MS PowerPoint, Images (jpg, .png without limiting the resolution of the file), PDF (viewing documents without limiting the size of the file), output of remote desktops via VNC protocal with management support, management of windows of running applications on the video wall; Software features: Move, delete and edit the size of the source window in real time; Snapping the main windows to the grid with possibility of editing; Preparation of grid templates, and independent editing of the grid in "advanced mode"; Possibility of making templates for the subsequent rapid display and management of them; Uploading content to the controller via the Web; Drag & Drop functionality; Work with last generation browsers on any modern platform (cross-platform); Password protection for client part of SW application; Remote switching of sources without using the remote control; Capture and playback of external sources (HDMI / DVI) in 1080p format; Technical Support incl. update of SW for min. 3 years
Warranty:	5 Years (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)
Other:	The workstation incl. components must be of the same manufacturer
Incoming traffic network node	
Type:	Layer 2 PoE+ switch/es
Total Ports q-ty:	min. 96x 10/100/1000 ports, of them at least 48x PoE+ (30W per port); min. 8x 10GBASE-T ports
Total Switching Capacity of Node:	min. 350 Gbps
High availability:	Link aggregation; IEEE 802.1D (STP); IEEE 802.1W (RSTP) support
Throughput of Node:	min. 260 Mpps
QoS:	support Traffic prioritization; Broadcast control; IEEE 802.1p/Q
Perfomance:	support Half- and full-duplex auto-negotiating capability on every port; IGMP snooping
Security:	Secure Socket Layer; Automatic denial-of-service protection; Management password
Management:	Web management; Port mirroring; SNMPv1, v2c; NTP; Dual flash images
Connectivity:	IEEE 802.3X flow control; Auto PoE power configuration; PoE shut down mode; Auto port shut-down; Loop protection
Rack mountable	Max 2U
Technical Support:	Lifetime Software updates; 24x7 chat support with manufacturer; NBD shipment of advanced hardware replacement - includes fans and power supplies; Lifetime warranty
Management node	
Type and q-ty:	2x Layer 3 Switches
Ports per each switch:	min. 20x RJ-45 10/100/1000 ports; 4x 10/100/1000 BASE-T SFP Ports
Slots:	Uplink module slot with min. 4x 10GBASE-T ports; stacking module slot
Switching capacity per	min. 128 Gbps

1

each switch:	
High availability:	VRRP; IEEE 802.1s Multiple Spanning Tree support; LACP; support dual power supplies for redundancy
Throughput per each switch:	min. 92 Mpps
QoS:	Layer 4 prioritization; IEEE 802.1p; IEEE 802.1p priority tag based on IP address/ ToS, Layer 3 protocol, TCP/UDP source and number of port
Performance:	support Ring Stacking Topology; Ring topology; Virtualized Switching
Security	Web-based authentication; MAC-based authentication; Concurrent IEEE 802.1X, Web, and MAC authentication schemes; MAC Pinning; MAC address lockout; IEEE 802.1AE MACsec; TMP module; Dynamic ARP protection; DHCP protection; Private VLAN; SSL; ACLs; RADIUS/TACACS+
Management:	RMON, XRMON, and sFlow support; Dual flash images; Automatic configuration for mobile-first campus networks; Out-of-band Ethernet management port; Automatically finds and fixes network problems; Unidirectional link detection service support;
Layer 3 routing:	Static IP routing; RIPv1, RIPv2, and RIPng routing; OSPFv2 / OSPFv3 protocols; Policy-based routing support
Layer 3 services:	DHCP server functionality support
Stacking Module:	Yes, both swithes must be install in the stack
Rack mountable	Max 1U each switch
Technical Support:	Lifetime Software updates; 24x7 chat support with manufacturer; NBD shipment of advanced hardware replacement - includes fans and power supplies; Lifetime warranty
Operation PC	
Type	Brand Name International Business PC, SFF
Processor	Processors last generation with min. 3,0 GHz base frequency/6 cores/9MB cache/up to 4,0 GHz turbo frequency/14 nm technology/TDP 65W
Memory Options:	min. 4x DIMMs; min. 8GB DDR4 2666MHz
Storage:	min. 2x 500GB SATA 3.5" 7200 rpm in RAID level 1
Storage Controller:	min. 3x SATA ports
Ports:	min. 3x USB 3.1 Gen 2 (2x on a front panel); 2x USB 3.1 Gen 2 Type-C (1x on a front panel); 1x PowerShare port USB port on a front panel; RJ45; 3x Audio (1x on a front panel); 2x DisplayPort 1.2
Slots:	min. 1x PCIE Gen3 x4 and 1x PCIE Gen3 x1 must be free
Network:	2x Gigabit Ethernet ports
Graphics Card:	min. 2GB 128-bit GDDR5 PCIE x16; min. 2x Display Ports
Security:	Power-On/Setup Password; TPM 2.0
Power Supply	80PLUS Platinum Certified
Software:	MS Windows 10 Pro OEM
Input Devices:	USB Keyboard (Eng/Rus); USB Laser Mouse
Monitor:	min. 27" (thin screen frame; IPS; 3840x2160 Native resolution; min. 350 nits; max. 5ms response time; Color Gamut min. 99% of sRGB; Static Contrast min 1200:1; Anti-glare and 3H Hard Coating; HDMI, DP, USB 3.0 interfaces; built-in cable-management; Pivot Rotation; Height adjustment stand with range min. 130mm); Picture-in-Picture functionality support
Options:	Overhead headphones with Soft pads, built-in microphone and audio control; Dust Filter
Warranty:	5 Years for workstation and monitor (Type and warranty period should be available on the official website of the manufacturer or in the form of the original document with the manufacturer's stamp and the serial numbers of the equipment; Any other confirmation of the warranty will be rejected)
Other:	The desktop (incl. components), monitor and accessories must be of the same manufacturer; must be indicated all Part Numbers of equipment, parts and additional services