Lenovo P16v Gen 1 AMD

Version: 5.0 | 06/17/2025

Datasheet Specs

Product Name

Product Display Name	P16v Gen 1
Information Date	5-May-25

SECTION I: SYSTEM OVERVIEW

Description	Driver Built for creators who demand more value, the Lenovo ThinkPad P16v takes everything in stride, closing the gap in price and performance between entry-level and highend workstations. Packing the latest AMD 7000 series processors and up to NVIDIA RTX 2000 Ada Generation graphics in an all-new chassis featuring a 16-inch 16:10 display, this workstation delivers a fast and visually stunning representation of your work

CPU

Processor Support	AMD Ryzen 7000 Series (R5 Pro, R7 non-Pro, R7 Pro, R9 Pro)
Socket Type	BGA

Operating Systems

Preloaded	Windows 11 Pro 64-bit (22H2) Windows 11 Home 64-bit (22H2) Windows 11 Home Chinese Language (PRC only) Windows 10 Pro 64-bit preinstalled through downgrade rights in Windows 11 Pro 64-bit (22H2) Windows 10 China Government Edition Ubuntu Linux 64-bit (Version 22.04 LTS, running the 4.15.0 kernel) No Operating System
Supported	Ubuntu Linux 22.04 Cert only Red Hat Enterprise Linux (RHEL) 8.6

Memory

Number of DIMM Slots	Up to 2 DIMM sockets
Channels	Single Channel w/ 1DIMM Dual Channel w/ 2DIMMs
Type	DDR5 SoDIMM
ECC Support	No
Speed	Native: Up to 5600MHz Actual: Up to 5200Mhz
Max DIMM Size	32GB
Max System Memory	64GB
Min System Memory	8GB
Soldered Memory	None
Disclaimers	No ECC memory on P16v Gen 1

Storage

Storage Slots	2 x M.2 2280
SATA	No
PCIe	Solid State Drive, OPAL2 PCIe-NVMe M.2 2280S3 – TLC
SAS	No
Interface	PCIe
Security	OPAL
Optional Hard Disk Drive Controllers	No

Video

Integrated Graphics	Processor Graphics AMD Radeon Integrated Graphics
Discrete Graphics	NVIDIA RTX A500, RTX A1000, RTX 2000 Ada
Adapter	None
Bus Interface	PCI Express 4.0

Display

Resolutions	WUXGA (FHD+) & WQUXGA (UHD+)

Camera

Resolution	FHD 1080p or 5MP+IR Camera
Frames per Second	30 fps
Focus	Fixed 50cm
Camera Interface	USB 2.0
IR Camera	Yes (5MP+IR option only)

Keyboard

Number of Keys	US : 105 / UK : 106 / JP : 110
Numpad	Yes
Size	100% ISO
Function Key Features	Yes
Backlit	Yes
Keyboard size	CS23 KYB with numberpad
Key stroke	1.5mm
Key pitch	19.05mm
Keyboard backlight	Yes
Keyboard thickness	Standard

TrackPad / Fingerprint Reader

TrackPoint Details	CS22 TL TrackPoint (t=4.8mm)
Finger Print Reader Model	9.45*3.29 FPR, MoC with LED
Multi-Touch	Yes
Resolution	1000 ppi
TrackPad/TouchPad thickness	3.4mm

TrackPad/TouchPad type	3+2 BCP
TrackPad size	115mm x 67.5mm
TrackPad material/finish	Glass like mylar surface

I/O – Ports and Connectors

USB	2x USB-A 3.2 Gen 1 (5Gbps) (1x Powered)
Thunderbolt	2x USB-C (USB 4/USB 3.2 Gen 2×2/DP1.4)
HDMI	1x HDMI 2.1
Audio Combo Jack	1x Microphone & Headphone Combo Jack (3.5mm)
Media Card Reader	Dedicated SD Express 7.0 Card Reader (Backwards compatible with UHS-I & UHS-II) (MMC,SD,SDHC SDXC)
Smart Card Reader	Yes (optional)
Power Connector	DC-In
Docking Port	Docking Via USB-C
VirtualLink	None
Network adapter	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter
Disclaimers	HDMI 2.1: Up to 8K/60Hz

Power Connector

Main	DC-In

Ethernet

Vendor	N/A
Count	N/A
EEPROM	N/A
Speeds	N/A
Functions	N/A
Connectors	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter

WWAN

Model	4G: Fibocom L860-GL 4G LTE CAT16 with eSIM

Near Field Communications

Model	Foxconn NXP NPC300 NFC

Audio

Vendor	Realtek	dev to confirm
Type	Intel High Definition Audio	dev to confirm
Internal Speaker	2 channel	dev to confirm
Connectors	Microphone & Headphone Combo Jack (3.5mm)	dev to confirm
Chipset	ALC3287	dev to confirm
Number of Channels	4-channel DAC, 4-channel ADC	dev to confirm
Number of Bits/Audio Resolution	16/20/24-bit PCM format	dev to confirm

Sampling Rate (Recording/Playback)	44.1K/48K/96K/192KHz sample rate	dev to confirm
Signal to Noise Ratio	Mic In: 90dB FSA Headphone Out@32ohm: 97dB FSA	dev to confirm
Analog Audio	None	dev to confirm
Dolby Digital	Dolby Audio Premium SW Support	dev to confirm
Digital Out (S/PDIF)	No	dev to confirm
Speaker Power Rating	2W@4ohm/ch	dev to confirm

Power adapter

Type	Slim 135W AC Adapter	Slim 170W AC Adapter
Input Voltage	100-240V	100-240V

Security

TPM	Version 2.0	dev to confirm
Asset ID	Yes	dev to confirm
vPro	AMD Pro	dev to confirm

Chassis Information

Format	Clamshell
Color	Thunder black
Thermal Solutions	Dual Fan, Intelligent Cooling
Dimensions	Length 14.37 inches 365 millimeters Width 10.31 inches 261.9 millimeters Height 0.97 inches 24.66 millimeters
Weight	4.85lbs/2.2kg

Packaging Parameters

Height (mm)	341
Height (inch)	13.43
Width (mm)	535
Width (inch)	21.06
Depth (mm)	95
Depth (inch)	3.74
Weight (kgs)	Retail: 3.67kgs (135W adapter) Retail: 3.77kgs (170W adapter)
Weight (lbs)	Retail: 8.09lbs (135W adapter) Retail: 8.31lbs (170W adapter)

Security & Serviceability

Self Healing BIOS	Yes
Access Panel	Removeable bottom cover
Number of Screws	9
Swappable Components	Bottom cover, memory module, M.2 solid-state drive, speaker assembly, coin-cell battery, TrackPoint pointing cap

Storage Slots	2 slots
Memory	2 SoDIMM slots
System Board	FR4
Restore CD/DVD/USB Set	None, Restore Media available via Lenovo Customer Support Center
Cable Lock Support	Security-lock slot/Kensington Cable Lock
Power-On Password	Yes
Hard Disk Password	Yes; User and Master hard disk password
Supervisor Password	Yes
NIC LEDs (integrated)	None
Security Chip	Yes (for TMP 2.0)
Access Panel Key Lock	Bottom Cover Tamper Detection
Boot Sequence Control	Yes

Operating Environment

Operating – Air Temperature	At altitudes up to 2438 m (8000 ft) Operating: 5°C to 35°C (41°F to 95°F)
Non-Operating – Air Temperature	At altitudes up to 2438 m (8000 ft) � Storage: 5°C to 43°C (41°F to 109°F)
Humidity	Operating: 8% to 95% at wet-bulb temperature 23°C (73°F) Storage: 5% to 95% at wet-bulb temperature 27°C (81°F)
Corrosive Gas	G1
Particulates	P1

SECTION II: SUPPORTED COMPONENTS

Supported Components

Processor	AMD Ryzen R5 Pro processor (6-cores up to 5.0 GHz) AMD Ryzen R7 non-Pro processor (8-cores up to 5.1 GHz) AMD Ryzen R7 Pro processor (8-cores up to 5.1 GHz) AMD Ryzen R9 Pro processor (8-cores up to 5.2 GHz)
Memory Support	DDR5 5600MHz SoDIMM (native) DDR5 5200MHz SoDIMM (operational)
Chipset (PCH)	None
Size of BIOS Flash	64MB
Super I/O	None
Clock	Crystal
Audio	Realtek High Definition Audio
Ethernet	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter

Memory

System Capacity Options	8GB (8GBx1) 16GB (16GB*1 or 8GB*2) 32GB (32GB*1 or 16GB*2) 64GB (32GB*2)
Memory Types	8GB DDR5 5600MHz SoDIMM 16GB DDR5 5600MHz SoDIMM 32GB DDR5 5600MHz SoDIMM
Brand of Memory	Samsung SK Hynix Ramaxel
Memory clock frequency(MHz)	Native: Up to 5600MHz

	Actual: Up to 5200Mhz

Storage

2.5" SAS Hard Disk Drive (HDD)	None
2.5_ SATA Hard Disk Drive (HDD)	None
2.5" SATA Solid State Drive (SSD)	None
M.2 (NGFF) PCIe Solid State Drive (SSD)	256GB OPAL2 PCIe 4×4 Value TLC (M.2 2280-S3) 512GB OPAL2 PCIe 4×4 Value TLC (M.2 2280-S3) 1TB OPAL2 PCIe 4×4 Value TLC (M.2 2280-S3) 512GB OPAL2 PCIe 4×4 Performance TLC (M.2 2280-S3) 1TB OPAL2 PCIe 4×4 Performance TLC (M.2 2280-S3) 2TB OPAL2 PCIe 4×4 Performance TLC (M.2 2280-S3)
2.5_ PCIe Solid State Drive (SSD)	None
Brand of Drive	Samsung Hynix WD Kioxia
Intel Optane Storage Technology	n/a

Removeable Media

Media Card Reader Specifications	SD Express 7.0 UHS-II

SECTION III: Supported Component Detail

CPU Specifications

CPU	AMD Ryzen 5 Pro	AMD Ryzen 7 non-Pro	AMD Ryzen 7 Pro	AMD Ryzen 9 Pro
Integrated Graphics	AMD Radeon Navi 3 Graphics	AMD Radeon Navi 3 Graphics	AMD Radeon Navi 3 Graphics	AMD Radeon Navi 3 Graphics
# of Cores	6	8	8	8
# of Threads	12	16	16	16
Processor Base Frequency	4.3 GHz	3.8 GHz	3.8 GHz	4.0 GHz
Max Turbo Frequency	5.0 GHz	5.1 GHz	5.1 GHz	5.2 GHz
Cache	16 MB	16 MB	16 MB	16 MB
TDP	45W	45W	45W	45W
Intel ARK Spec Link	N/A	N/A	N/A	N/A

Display Specifications

Model	WUXGA Non-Touch	WUXGA On-Cell Touch	WUXGA Non-Touch	WQUXGA Non-Touch
Resolution	FHD+ (1920 x 1200)	FHD+ (1920 x 1200)	FHD+ (1920 x 1200)	UHD+ (3840 x 2400)
Diagonal	16"	16"	16"	16"
Aspect Ratio	Ratio 16:10	Ratio 16:10	Ratio 16:10	Ratio 16:10
Backlight	LED	LED	LED	LED
PPI	141.5 (Pixel Pitch:0.17952mm x 0.17952mm)	141.5 (Pixel Pitch:0.17952mm x 0.17952mm)	141.5 (Pixel Pitch:0.17952mm x 0.17952mm)	283 (Pixel Pitch: 0.09mm x 0.09mm)
Active Area	344.68 x 215.42	344.68 x 215.42	344.68 x 215.42	344.678 x 215.424
Refresh Rate	60Hz	60Hz	60Hz	60Hz
Contrast Ratio	800:1 (TYP)	800:1 (TYP)	1200:1 (TYP)	1400:1 (TYP)
Viewing Angle (*1)	85/85/85/85 degree	85/85/85/85 degree	85/85/85/85 degree	85/85/85/85 degree
Color gamut	45% NTSC	45% NTSC	100% sRGB	100% DCI-P3
Brightness	300nit	300nit	300nit	800nit, HDR 400

Color Depth	16.7M	16.7M	16.7M	1064M
Interface	eDP 1.2	eDP 1.2	eDP 1.4	eDP 1.4
Panel ID Recognition	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table
Weight	max 410g	Max 410g	max 325g	max 330g
Color Calibrator	None	None	None	X-Rite Factory Color Calibration
Panel Technology	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Anti-Glare

SSD Specifications

2.5" SATA Solid State Drive (SSD)	n/a
M.2 (NGFF) PCIe Solid State Drive (SSD)	2x M.2 2280 PCIe
2.5_ PCIe Solid State Drive (SSD)	n/a
Intel Optane Storage Technology	n/a

Solid State Storage Devices

Supported Types	M.2	M.2
Dimensions inches/centimeters (W x D x H)	22.0 (+-0.15) x 80.0 (+-0.15) x 2.3 (max)	22.0 (+-0.15) x 80.0 (+-0.15) x 2.3 (max)
Size	M.2 2280 S3	M.2 2280 S3
Interface Type	PCIe NVMe	PCIe NVMe
Read/Write IOPS Specifications	Read: 250K (1TB, 512GB), 200K (256GB) Write: 240K (1TB, 512GB), 190K (256GB)	Read: 550K (1TB/2TB), 350K (512GB) Write: 400K (1TB/2TB), 370K (512GB) IOPS, 4K Random, 32 q depth, 8 threads
Bandwidth Performance	PCIe Gen4x4 Value (8Gb/S)	PCIe Gen4x4 Performance (16Gb/S)
Power Consumption (Max)	3.0A (duration for 10 us)	8.0W
Active(AVG)	5W	8.0W (Sequential read)
Idle	5mW (L1.2)	5mW (Low power state)
Min MTBF	2,000,000 (h)	2,000,000 (h)
Min Sequential Read	3000MB/s (1TB, 512GB), 2900MB/s (256GB)	6400MB/s (1TB/2TB), 6000MB/s (512GB)
Min Sequential Write	1600MB/s (1TB/512GB), 900MB/s (256GB)	5000MB/s (2TB), 3800MB/s (1TB), 3200MB/s (512GB)
Hardware Encryption	Yes	Yes for OPAL, No for Pyrite

Discrete Graphics Adapter

GPU Name	NVIDIA RTX A500 Laptop GPU	NVIDIA RTX A1000 Laptop GPU	NVIDIA RTX 2000 Ada Laptop GPU
CUDA Processing Cores	2048	2560	3072
GPU Memory	4GB	6GB	8GB
Memory Bandwidth	112 GB/s	168 GB/s	256 Gb/s
Memory Type	GDDR6	GDDR6	GDDR6
Memory Interface	64-bit	96-bit	128-bit
Display Port	1.4	1.4	1.4
OpenGL	4.6	4.6	4.6
Shader Model	7	7	7
DirectX	12	12	12 Ultimate
PCIe Generation	4	4	4
Floating-Point Performance	3	3.7	9.3
VR Ready	Yes	Yes	Yes
Simultaneous Multi-Projection	N/A	N/A	74.7
NVIDIA FXAA/TXAA Antialiasing	Yes	Yes	Yes
NVIDIA nView Display Management Technology	Yes	Yes	Yes

GPU Direct for Video	Yes	Yes	Yes
Vulkan Support	Yes	Yes	Yes
NVIDIA Optimus	Yes	Yes	Yes

WLAN

Connector: Main, Aux/GNSS, GNSS	ANT1:AUX WiFi + BT; ANT2: Main WiFi
Antenna Diversity	Supported
MIMO	Supported
GNSS Bian	N/A
Radio ON/OFF Control	Supported
Connector interface	CNVi
Operating Temperature (Adapter Shield)	0c to +80c
Humidity Non-Operating	50%~90% Rh non condensing (at temperatures of 25c to 35c)
Operating Systems	Windows 11, 64-bit*,Microsoft Windows 10*, Linux*(limited feature support), Chrome*
Wi-Fi Alliance	Wi-Fi CERTIFIED* a/b/g/n/ac/ax with wave 2 features, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Miracast* as Source, and Wi-Fi Direct (For Microsoft Windows* only)
IEEE WLAN Standard	IEEE 802.11a/b/g/n/ac/ax, 802.11d,802.11e, 802.11h, 802.11i, 802.11w, 802.11r, 802.11k, 802.11v, pending OS support; Fine Timing Measurement based on 802.11-2016
Roaming	Support seamless roaming between access points
Bluetooth*	Bluetooth 5.3 (HW Ready)
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP
US Government	FIPS, FISMA
Product Safety	UL,C-UL,CB (IEC 60950-1)
Disclaimers	1) 6GHz channel of Wi-Fi 6E is only available with Windows 11 2) Bluetooth may be limited by OS

Battery

Dimension	L: 312mm*W: 58.8mm*T 9.4mm
Weight	MAX 349.75g
Type (Chemistry and Cell)	Li-Polymer (4S1P), 4-cell
Voltage	15.52 V
Battery Capacity	90Wh
Charging Time	On Charge Time (0- 100%) * 117 min Off Charge Time (0 � 80%) ** 56 min Off Charge Time (0 � 100%) ** 115 min
Operating Temperature Range	between 10�C (50�F) and 35�C (95�F)
Warranty	1 Year / 3 Year Available
Coin Cell Battery (Model)	CR2032

SECTION IV: BIOS / Certifications / Standards / Environmental

BIOS Specifications

WMI Support	Yes, if it is BIOS Setup change by WMI.
ROM-Based Setup Utility (F1)	Yes
Replicated Setup	Yes, it supported with SRSETUP tool.

Boot Control	Yes, it means Boot order change.
Discrete Mode	No
Asset Tag	Yes
Remote Wakeup/Remote Shutdown	Only support WOL when system is connected with Dock.
Per-port Control	Yes, if it is I/O port enable/disable by BIOS Setup.
Adaptive Cooling	Yes, if it is thermal & fan control.
Security	Yes, BIOS password / Hard disk password / Finger print
Intel(R) AMT (includes ASF 2.0)	N/A
Intel(R) TXT	N/A

EMC & Safety

EMC	Published, Certified Existing Reports EMC – Australia EMC – Belarus EMC – Canada EMC – China EMC – EU/EFTA EMC – Japan EMC – Kazakhstan EMC – New Zealand EMC – Russia EMC – South Korea EMC – Taiwan EMC – USA/Territories Not Applicable / Not Required EMC – Israel EMC – Moldova EMC – Serbia EMC – Turkey EMC – Uzbekistan EMC – Vietnam
Safety	To access the latest User Guide and Safety and Warranty Guide, go to: https://support.lenovo.com Low Halogen Declaration of Conformance TNOT-2017-0040 Section 9 – Low Halogen Scorecard Homologation PCRB Compliant In the following countries: Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Benin, Bermuda, Bolivia, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Cayman Islands, Central African Republic, Chad, China, Colombia, Comoros, Congo, Costa Rica, Djibouti, Dominican Republic, Egypt, El Salvador, Eritrea, Ethiopia, EU/EFTA, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Haiti, Honduras, Hong Kong, India, Indonesia, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Laos, Lebanon, Liberia, Macau, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, New Zealand, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Russia, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, South Africa, South Korea, Sri Lanka, Swaziland, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uruguay, USA/Territories, Uzbekistan, Venezuela, Vietnam, Zambia, Zimbabwe, Brazil – Inmetro 170 Govt Bids, Guinea-Bissau, Lesotho

Environmentals

Energy Star	ENERGY STAR Version 8.0 For more information about ENERGY STAR, go to: https://www.energystar.gov
EPEAT	EPEAT Silver Certification Available on select models
IT ECO declaration	The latest environmental information about Lenovo products is available at: https://www.lenovo.com/ecodeclaration
Hazardous Substances	The latest environmental information about Lenovo products is available at: https://www.lenovo.com/ecodeclaration European Union RoHS This Lenovo product, with included parts (cables, cords, and so on) meets the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS recast" or "RoHS 2"). For more information about Lenovo worldwide compliance on RoHS, go to: https://www.lenovo.com/rohs-communication

Manageability

Industry Standard Specifications	This product meets the following industry standard specifications for manageability functionality:

Remote Manageability Software Solutions	Lenovo ThinkManagement Console Microsoft System Center Configuration Manager LANDesk Management Suite for Lenovo Vantage Technologies (www.landesk.com/lenovo)
System Software Manager	Lenovo ThinkStation supports software management tools from the ThinkVantage System Update suite: System Update Update Retriever
Service, Support, and Warranty	On-site Warranty and Service: Three-years, limited warranty and service offering delivers on-site, next business-day service for parts and labor and includes free telephone support 8am-5pm. Global coverage ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering.
Materials Used	90% Recycled Magnesium C Cover 85% PCC Plastic Key Caps on Keyboard 90% PCC Plastic Speaker Enclosure 90% PCC Plastic Battery Pack Enclosure 90% PCC Plastic SIM Tray 30% PCC Plastic 135W Slim AC Adapter 30% PCC Plastic 170W Slim AC Adapter Low Temperature Solder (SSD, fingerprint reader module, TrackPad) Plastic free packaging with 90% recycled and/or FSC certified content (standard)
TCO Certification	9.0
Disclaimers	1. EPEAT registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country. 2. Product packaging shall contain, on average, a minimum total percentage of 90% by weight of any combination of the following materials: Recycled content, biobased plastic, non-wood biobased fiber material, and/or sustainably forested material