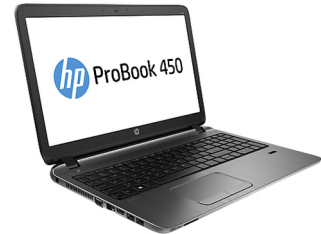
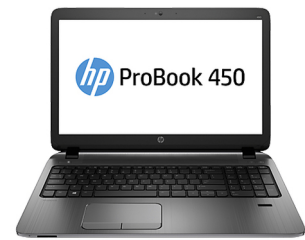




**HP ProBook 450 G2 Intel® Core™ i5 i5-4210U 39,6 cm (15.6") Full HD 8 GB DDR3L-SDRAM 500 GB HDD Windows 7 Professional**



**Brand :** HP

**Product family:** ProBook

**Product code:** F5R46AV

**Product name :** 450 G2

HP ProBook 450 G2 Base Model Notebook PC

HP ProBook 450 G2 Intel® Core™ i5 i5-4210U 39,6 cm (15.6") Full HD 8 GB DDR3L-SDRAM 500 GB HDD Windows 7 Professional

The sleek HP ProBook 450 with optional 10-point touchscreen<sup>1</sup> and the latest generation technologies delivers powerful performance in the office or on the go. Proven reliability and comprehensive HP security features help keep your data and investment protected.<sup>1</sup> *HD touchscreen is available as an optional feature.*

Design		Ports & interfaces	
Product type *	Laptop	Number of SATA III connectors	4
Product colour *	Silver	Keyboard	
Form factor *	Clamshell	Pointing device	Touchpad
Intel® vPro™ Platform Eligibility	✗	Numeric keypad *	✓
Country of origin	China	Software	
Display		Operating system architecture	64-bit
Display diagonal *	39.6 cm (15.6")	Recovery operating system	Windows 8.1 Pro
Display resolution *	1920 x 1080 pixels	Operating system installed *	Windows 7 Professional
Touchscreen *	✗	Processor special features	
HD type	Full HD	Intel® Wireless Display (Intel® WiDi)	✓
LED backlight	✓	Intel® My WiFi Technology (Intel® MWT)	✗
Native aspect ratio	16:9	Intel Smart Connect Technology	✓
Processor		Intel® Anti-Theft Technology (Intel® AT)	✓
Processor manufacturer *	Intel	Intel® Identity Protection Technology (Intel® IPT)	✓
Processor family *	Intel® Core™ i5	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Processor generation	4th gen Intel® Core™ i5	Intel® Turbo Boost Technology	2.0
Processor model *	i5-4210U	Intel® Matrix Storage Technology (Intel® MST)	✗
Processor cores	2	Intel® High Definition Audio (Intel® HD Audio)	✓
Processor threads	4	Enhanced Intel SpeedStep Technology	✓
Processor boost frequency	2.7 GHz	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Processor frequency *	1.7 GHz	Intel Clear Video Technology	✗
System bus rate	5 GT/s	Intel® InTru™ 3D Technology	✓
Processor cache	3 MB	Intel® Insider™	✓
Processor cache type	Smart Cache	Intel® Quick Sync Video Technology	✓
Processor socket	BGA 1168	Intel Flex Memory Access	✗
Processor lithography	22 nm		
Processor operating modes	64-bit		
Processor series	Intel Core i5-4200 Mobile series		
Processor codename	Haswell		
Bus type	DMI2		
FSB Parity	✗		
Stepping	D0		

Processor		Processor special features	
Thermal Design Power (TDP)	15 W	Intel® Smart Cache	✓
Tjunction	100 °C	Intel® AES New Instructions (Intel® AES-NI)	✓
Maximum number of PCI Express lanes	12	Intel Trusted Execution Technology	✗
PCI Express slots version	2.0	Intel Enhanced Halt State	✓
PCI Express configurations	4x1, 2x4	Intel VT-x with Extended Page Tables (EPT)	✓
ECC supported by processor	✗	Intel Demand Based Switching	✗
Memory		Intel® Secure Key	✓
Internal memory *	8 GB	Intel TSX-NI	✗
Internal memory type	DDR3L-SDRAM	Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
Memory clock speed	1600 MHz	Intel 64	✓
Memory layout (slots x size)	1 x 8 GB	Execute Disable Bit	✓
Memory slots	2x SO-DIMM	Idle States	✓
Maximum internal memory *	16 GB	Thermal Monitoring Technologies	✓
Storage		Processor package size	40 x 24 x 1.5 mm
Total storage capacity *	500 GB	Supported instruction sets	AVX 2.0, SSE4.1, SSE4.2
Storage media *	HDD	Processor code	SR1EF
Number of HDDs installed	1	CPU configuration (max)	1
HDD capacity	500 GB	Embedded options available	✗
HDD interface	SATA	UART	✓
HDD speed	5400 RPM	Intel Virtualization Technology for Directed I/O (VT-d)	✗
Optical drive type *	DVD Super Multi DL	Intel Smart Connect Technology version	1.00
Card reader integrated	✓	Intel Identity Protection Technology version	1.00
Graphics		Intel Secure Key Technology version	1.00
Discrete graphics card model *	Not available	Intel ME Firmware Version	9.5
On-board graphics card *	✓	Intel TSX-NI version	0.00
Discrete graphics card *	✗	Intel Virtualization Technology (VT-x)	✓
On-board graphics card family	Intel® HD Graphics	Intel Dual Display Capable Technology	✗
On-board graphics card model *	Intel® HD Graphics 4400	Intel FDI Technology	✗
On-board graphics card base frequency	200 MHz	Intel Rapid Storage Technology	✓
On-board graphics card dynamic frequency (max)	1000 MHz	Intel Fast Memory Access	✗
Maximum on-board graphics card memory	1.74 GB	Processor ARK ID	81016
On-board graphics card DirectX version	12	Conflict-Free processor	✓
On-board graphics card ID	0xA16	Battery	
Audio		Battery technology	Lithium-Ion (Li-Ion)
Audio system	DTS Sound+	Number of battery cells	4
Number of built-in speakers	2	Battery capacity *	44 Wh
Built-in microphone	✓	Power	
Camera		AC adapter power	45 W
Front camera	✓	DC-in jack	✓
Network		Security	
Wi-Fi	✓	Cable lock slot	✓
Wi-Fi standards	802.11a, Wi-Fi 5 (802.11ac), 802.11b, 802.11g, Wi-Fi 4 (802.11n)	Sustainability	
Ethernet LAN	✓	Sustainability certificates	ENERGY STAR
Ethernet LAN data rates	10,100,1000 Mbit/s	Weight & dimensions	
Bluetooth	✓	Width	375 mm
Bluetooth version	4.0	Depth	262.8 mm
Ports & interfaces		Height (front)	2.34 cm
USB 2.0 ports quantity *	2	Height (rear)	2.55 cm
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	2	Weight *	2.11 kg
Ethernet LAN (RJ-45) ports	1		

Ports & interfaces		Other features	
HDMI ports quantity *	1	Intel segment tagging	Enterprise, Professional
DVI port	×		
VGA (D-Sub) ports quantity	1		
S/PDIF out port	×		
Microphone in	×		
Combo headphone/mic port	✓		
Docking connector	×		
ExpressCard slot	×		
CardBus PCMCIA slot type	×		
SmartCard slot	×		
Total number of SATA connectors	4		

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