

# Working Equipment for Autodarts

	Beginner Version	Experienced Version LINUX	Experienced Version WINDOWS&Linux	Pro Version
Equipment	Only Autodarts <u>without</u> extensions (just scoring)	Autodarts (with 1-2 Extensions like the caller)	Autodarts (higher performance)	Autodarts with Monitor, Extension and PC Working Station, Dual management (Linux & Windows)
€	under 100€	100 - 150€	150 - 200€	over 250€
Hardware	Thin Client, Raspberry, Mini	Thin Client, Raspberry, Mini, Tiny	Thin Client, Mini PC, Tiny Versions	Thin Client, Mini PC, Tiny Versions, Desk-,Laptops
Voltage in USE	10-50W	10-50W	10-50W	>50W
Core	DUAL (lowest budget) or Quad (2x 2,2GHZ or 4x 1,5 GHZ)	QUAD (4x 1,5 GHZ overlocking possible) 4x 2,4GHZ	QUAD Turbo 2.4GHZ and more	QUAD
CPU	AMD Dual Core 2x2.0 Ghz or more / Quad-Core Cortex-A72 (ARM v8), 64 Bit, ARmv8 1,2 GHz Quad Core	AMD <b>4x 1.5</b> Ghz or more / Quad-Core Cortex-A72 (ARM v8)	AMD <b>4x 2.4</b> Ghz or more	Intel i3,i5,i7
RAM-Size	min 1GB better 2 GB or more	2GB or more	4GB or more	8GB <u>better more</u>
Harddisk Size	minimum 4GB	4GB or more	8-16GB LINUX/32GB WIN or more	60GB or more
CAM	NO DISTORTION CAMS Up to 720p and more minimum 30FPS, glas coated lense 6times glazed or more. Between 80-100°. USB 2.0 / Attention!!! USB 3.0 cams on a lower performance Hardware are proned for errors	NO DISTORTION CAMS Up to 720p and more minimum 30FPS, glas coated lense 6times glazed or more. Between 80-100° sight. USB 2.0 / Attention!!! USB 3.0 cams on a lower performance Hardware are proned for errors	NO DISTORTION CAMS Up to 720p and more minimum 30FPS, glas coated lense 6times glazed or more. Between 80-100°. USB 2.0 / Attention!!! USB 3.0 cams on a lower performance Hardware are proned for errors	NO DISTORTION CAMS Up to 720p and more minimum 30FPS, glas coated lense 6times glazed or more. Between 80-100°. USB 2.0 / Attention!!! USB 3.0 cams on a lower performance Hardware are proned for errors
USB connectors	3-4 minimum (2x 3.0 USB!)	3-4 minimum (2x 3.0 USB!)	3-4 minimum (2x 3.0 USB!) better 3 x 3.0 USB	3x USB 3.0 (best)
OS	Linux Focal Ubuntu Fossa 20.04.5 LTS (Note with Rasp Pi4 recommended to use original Rasp OS)	Linux Focal Ubuntu Fossa 20.04.5 LTS (Note with Rasp Pi4 recommended to use original Rasp OS)	Windows 8/10 or Linux Focal Fossa 20.04.5 LTS	Windows 8/10/11or Linux Focal Fossa 20.04.5 LTS any other LINUX OS
Autodartssoftware	Linux	Linux	Windows or Linux	Windows or Linux
ATTENTION!	Try to avoid cable extensions or USB Hubs, CPU is not designed to operate directly with a monitor. Only USE with VNC or SSH	Try to avoid cable extensions or USB Hubs, CPU is not designed to operate directly with a monitor. Only USE with VNC or SSH	Try to avoid cable extensions or USB Hubs, well set-up systems allow direct monitor connection. *This CPU works perfect with LINUX (fast and stable). For a Windows 10 Installation Ram-Size >8GB!	Older PC clients only with USB 2.0 connectors and using old and loud Hard Disks and loud fans are not recommended. NOT ECONOMICAL AND MOSTLY USB PRODUCING ERRORS
Hardware Examples	Raspberry Pi4 2GB RAM, Ultra SDHC Card with minimum 8GB , Fujitsu Futro GX 222 DC 4GB RAM 8 GB Flash,	Raspberry Pi4 4GB RAM and more , Ultra SDHC Card with minimum 8GB, Fujitsu Futro GX-415 or 424 GC, Dell AMD GX-424CC, HP T630 Thin client GX-420GI	Fujitsu FutroS740 J4105, Fujitsu Futro S9010 J5040,	Lenovo ThinkCentre M93p TINY Intel Core i7-4785T QUAD , lenovo thinkcentre m900 tiny, i5-6500T, FUJITSU MINI-COMPUTER Q956 INTEL CPU i3-6100T 8GB DDR4 128GB SSD USB3.0 V340

Note! A USB 3.0 Cam use 900ma Voltage  
Using this cameratype on a USB 2.0 (only 500ma) possibly not working  
So always connect cams to a 3.0 USB, if there are only 2x 3.0 (connect directly 2cams on Use a Y-USB Connector cable on the two rest USB 2.0. This will merge 2x 500ma for the 1 left free cam (needs 900ma).



Y-Cable USB+Power + Power



NOTE!  
For lower performing PC like Futro GX222 odr 415/424 it's better using LINUX OS FOCAL FOSSA 20.04.5 LTS this has an very smart and universal Kernel works especially perfect for this machines without problems. **DO NOT UPDATE THIS OS!**



Example

**THIS EQUIPMENT WORKS AND IS TESTED!**