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mar345: Technical Specifications

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1.) Image Plate Scanner

Plate Diameter	345 mm
Usable detector area	93.480 mm ²
Diameter of scanned area	Software selectable: 180, 240, 300 or 345mm
Pixel size	150 μ x 150 μ or 100 μ x 100 μ Selectable by software
Sensitivity	1 X-ray photon per ADC-unit at 8 keV
Intrinsic noise	1-2 photon equivalents
Dynamic range	0 : 131000 (17 bits)
Communication interface	Dedicated Ethernet, "twisted pair" (10BaseT), 10MB/s
Erase lamps	1 halogen lamp: R7S 11x118mm, 500W 2 halogen lamps: R7S 11x80mm, 250W Lifetime: 2000 hours (approx 100.000 scans)
Outside dimensions: (height * width * length)	515 mm * 398 mm * 350 mm
Total height on base:	approx. 720 mm
Weight:	53 kg
Energy consumption:	approx. 1000 Watt
Electricity:	120 / 240V (7.5 A)
Ambiental temperature:	4 - 24 °
Maximum humidity:	70 %

The patented read-out system combines a constant movement of the scanning head (driving down from the edge to the center of the plate) with an accelerated rotation of the plate. The actual rotation speed is inverse proportional to the current distance of the

collection system to the center of the plate. This unique procedure of spiral readout ensures constant pixel read-out times over a large area of the plate. The maximum rotational speed of the plate is 3800 rpm.

2.) Scan Times

IP Diameter [mm]	180		240		300		345	
Pixel size [μm]	150	100	150	100	150	100	150	100
Readout [sec]	26	34	39	53	56	77	68	96
Total [sec]	34	42	48	62	66	87	80	108

3.) Computer

Computers controlling the mar345 scanner must feature the following components (minimum requirements):

CPU speed	SPECint95 > 4.0 (R5000, Pentium Pro 200MHz)
Memory (RAM)	>= 128 MB
Disk space	>= 4 GB
Required components	Dedicated Ethernet card, twisted pair (10baseT), 10MB/sec
Optional components	Video (TV) card for capturing signal from crystal camera, e.g. Hauppauge WinTV Note: this is only supported on Linux
Peripherals (optional)	DVD or CD writer, ATAPI or SCS
Monitor	17" or larger, 1280x1024 pixels @ > 70 Hz
Graphics card	24-bit colors at 1280x1024 pixels @ > 70 Hz
Supported CPU's	Intel, AMD
Supported OS	Linux RedHat 6/7/8/9.x, SuSE 6/7/8/9.x, Fedora Core 1,2,3
Required software	X-windows & Motif support Tcl/Tk-package (optional)

Important notes:

- **All computer systems MUST be equipped with an additional Ethernet card.**
- **At installation time computers are expected to be FULLY FUNCTIONAL.**
- **For the *desktop beamline*[®] a video frame grabber is strongly suggested. Marresearch only supports this feature on Linux.**

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