Minuteman | Empire
Automation Systems

www.maseas.com

VISION

2D VISION APPLICATIONS

FIXED SCANNING

- OCR
- DPM
- Paper Labels
- Stationary Labels
- Moving Labels

VISION SENSING

- Measurement
- Pattern Matching
- Shape Detection
- Defect Detection
- Presence/Absence
- Color ID
- Counting
- Fill Levels

ZEBRA

	FS10	FS/VS20	FS/VS40	FS/VS70
Image Sensor	1MP: 1280x800, Global Shutter	1MP: 1280x800, Global Shutter	2.3MP: 1920x1200, Global Shutter 5.1MP: 2592x1952, Rolling Shutter	2.3MP: 1920x1200, Global Shutter 5.1MP: 2592x1952, Rolling Shutter
Acquisition Rate	Up to 60 fps	Up to 60 fps	2.3MP: Up to 60 fps 5.1MP: Up to 30 fps	2.3MP: Up to 60 fps 5.1MP: Up to 30 fps
Aimer	Amber LED / Circular Pattern	Amber LED / Circular Pattern	Red Class II Laser, Sunburst Pattern	-
Illumination	One 660nm Red LED and One 2700K White LED	Two 660nm Red LEDs or Two 2700K White LEDs	Field Replacable Modules: Red, Blue, White, IR LEDs	Supports standard external illumination with 24VDC supply
Imager Field of View	6mm Liquid Lens 35°H x 26°V Nominal	6mm Liquid Lens 35°H x 26°V Nominal	Standard: 10.8mm Liquid Lens 30°H x 19°V Nominal Wide Angle: 6.8mm Liquid Lens 46°H x 29°V Nominal	Flexible; Dependent upon C-Mount lens selection
Camera Weight	120 g	195 g	400 g	650 g
Configurable IO	-	2In/2Out	4 Opto-Isolated / 5 Non-Isolated	4 Opto-Isolated / 5 Non-Isolated
Interface Ports	(x1) USB-C 2.0	(x1) M12 X-Coded Ethernet (x1) M12 12-pin RS-232	(x1) M12 X-Coded Ethernet (x1) M12 12-Pin RS-232 (x1) M12 5-Pin External Light Power (x1) USB-C 3.0	(x2) M12 X-Coded Ethernet (x1) M12 12-Pin RS-232 (x1) M12 5-Pin External Light Power (x1) USB-C 3.0
Communication Protocols	-	EtherNet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232	EtherNet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232	EtherNet/IP, PROFINET, Modbus TCP, TCP/IP, RS-232
Protection	IP65 & IP67	IP65 & IP67	IP65 & IP67	IP65 & IP67
Why Upgrade Over Preceding Model?	-	More options for interfacing, discrete IO and increased internal illumination	Increased discrete IO, can support multiple separate networks, increased sensor resolution	Any C-Mount lens can be used to customize Field of View and Working Distance

Why Upgrade to an Iris GTX Over FS/VS?

- Wide range of camera resolutions from 2MP to 16MP
- Access to Design Assistant Tool Sets
- Vision Guided Robotics and Deep Learning Applications
- VGA Operator Interface

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3D VISION

Pickit
ROBOT VISION MADE EASY

- 3D vision for bin picking applications (indoors only).
- Use for parts larger than 10mm x 10mm x 5mm.
- Chrome, clear and glossy parts are not recommended.




	Pickit SD2	Pickit M-HD2	Pickit L-HD2	Pickit XL-HD2
3D Measurement Method	Active Stereo	Structured Light	Structured Light	Laser Triangulation
3D Image Capturing Time	From 400 ms	From 200 ms	From 200 ms	From 400 ms
3D Camera Resolution	1280 x 960	1944 x 1200	2448 x 2048	2448 x 2064
3D Camera Accuracy (mm)	4 - 10 mm	1 - 2 mm	2 - 6 mm	2 - 4 mm
Est. Picking Accuracy	1.5 - 2x	1.5x	1.5x	1.5x
Optimal Working Distance	800 - 2000 mm	500 - 1100 mm	800 - 2700 mm	2040 - 3240 mm
Field of View (Side x Front)	850-2127 x 710-1781 mm	320-703 x 514-1134 mm	406-1365 x 481-1646 mm	1600 x 1300 mm
3D Camera Weight	620 g	880 g	1 kg	6.3 kg
3D Camera Connection to PC	M12-8 (Ethernet)	M12-8 (Ethernet)	M12-8 (Ethernet)	M12-8 (Ethernet)
Power Supply	IEEE802.3at PoE	M12-5 24VDC	M12-5 24VDC	24V CC 2A Max
Temperature	-10°C to 50°C	0°C to 40°C	0°C to 40°C	0°C to 50°C
Protection	IP65	IP65	IP65	IP65
Vibrations	15G Sinusoidal Sweep	5G Random, 15G Shock	5G Random, 15G Shock	-
Conforms To	CE, FCC and RoHS	CE, CB, EN62368, FCC Class B	CE, CB, EN62368, FCC Class B	CE, FCC and RoHS
Robot Compatibility	ABB, Fanuc, Yaskawa, Kuka, Stäubli, Kawasaki, Universal Robots, Franka Emika, AUBO, Hanwha, Hyundai, Nachi, Omron, SIEMENS, EPSON, Neuromeka, Doosan, Comau, Kossow Robots, ROS			

4D VISION

APERA

- 4D vision for bin picking and positioning applications (indoors & outdoors).
- High speed and can aid robot pathing and guidance.
- Can import gripper geometry to assist in robot pathing/collision avoidance.
- Can detect all finishes including shiny, reflective, clear or translucent objects.
- Digital Twin capabilities to simulate performance of the robot, gripper, bin and objects before purchasing hardware.
- Operates under ambient light without affecting performance.

	Apera System
Cameras	At least two 2D cameras with 12MP+ resolution and up to six cameras on one controller.
Field of View	Customizable from 20 x 30 cm to 180 x 120 cm or larger
Speed	• Industry-leading total vision cycle time as low as 0.3s • Total robot cycle time as low as 1.8s
Range	80 - 300 cm or more
Robot Compatibility	ABB, DENSO, Fanuc, Epson, Doosan, Kawasaki, Stäubli, Mitsubishi, Yaskawa, Universal Robots

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