

IR-820 High Performance SCARA* Robot

The IR-820 series SCARA robots uniquely combine innovative mechanical design with user friendly, proprietary motion control software, to bring you the next generation of material handling robots. Four independently driven axes provide adaptability and flexibility not possible with 3-axis, R-Theta robot designs. Each of the three individual Theta axes rotates +/- 320°, eliminating “dead zones” common with R-Theta robots.

Blended Motion Trajectory Optimization

- Provides Higher Throughput

ISO Class 1 certified

- Assures Higher Product Yields

No Preventative Maintenance needed

- Lowest Cost of Ownership in market

4 Independent Axes

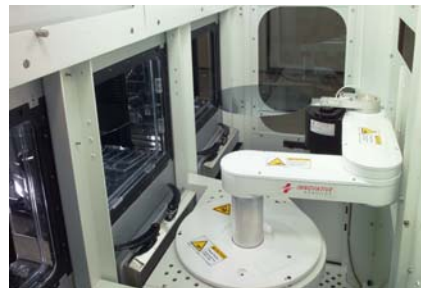
- Trackless for 3-FOUP EFEM/Sorter



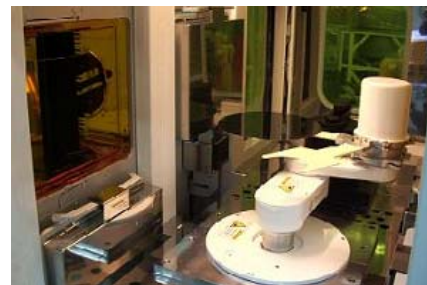
IR-825 independent dual wrist for fast swap times



IR-822 SCARA* with 5th-Axis Flipper Selectively Compliant Articulated Robot Arm*



IR-820 reaching 3-FOUP EFEM without a track



IR-825 allows batch-pick/place and single-pick/place



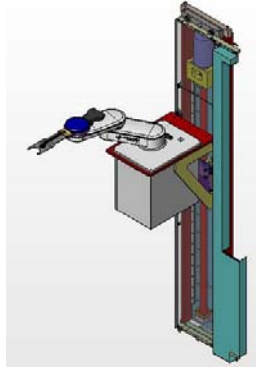


IR-820 Robot

	IR-820 Single Wrist	IR-822 with Flipper	IR-825 Dual Wrist	IR-920ZLR Z-less
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General:

Payload @ Wrist	2.2kg / 5lb	0.6kg/1.5lb	0.2kg/ 0.5lb x2	2.2kg/ 5 lb
Robot Weight	35kg / 76lb	36kg / 79lb	37kg / 82lb	18kg/ 40lb
Vacuum	85 kPa / 25 in of Hg			
Wafer Swap Time	6 seconds	6 seconds	3 seconds	6 seconds
Cleanliness	ISO Class 1			
Position	Absolute positioning			
Encoding				
Motors	AC Servo			
Cassette Mapping	Reflected or Through Beam laser beam			
Shoulder Joint	± 320°			
Elbow Joint	± 320°			
Wrist Joint 1	± 320°			
Wrist Joint 2	N/A		± 170°	N/A



IR-920ZLR
Z-less model,
with optional
vertical track

Repeatability:

X-Y	± 50µm (0.002 in)
Z-Axis	± 50µm (0.002 in)

Speed:

Z-axis full stop	328 mm (12.9 in) in 1.5 sec	Customizable
Z-axis maximum	285 mm/s (11 in/sec)	Customizable
Joint Angular Speed in X-Y	180°/sec	
Max Joint Velocity	320°/sec 7.3" arm 300°/sec 10.7" arm and dual wrist	

Reliability:

MTBF (hours/cycles)	28,000 hours, 17,000,000 cycles
MTTR	Less than 2 hours

IR-820C Motion Controller

CPU	1 GHz Celeron
Standard I/O	8 input, 8 output + dedicated I/O
Communication	Ethernet or RS-232 Serial
Dimensions	W 380mm x D 280mm x H 153mm
Power Requirements	90 - 122 VAC, 47 - 63 Hz, 8 Amps max 188 - 240 VAC, 47 - 63 Hz, 4 Amps max
Compliance	CE, SEMI S2

Z Axis Option

Z Travel/ Base Height	0 / 326 mm (12.85 in)
	234 mm (9.22 in)/ 562 mm (22.13 in)
	328 mm (12.91 in)/ 651 mm (25.63 in)
	438 mm (17.24 in)/ 761 mm (29.98 in)

Arm Option

Arm Length/ Max Reach	187 mm (7.39 in)/ 372mm(14.65 in)
	274 mm (10.79 in)/ 543mm(21.40 in)

End Effector and Mapper Option

Wafer Size	125mm 150mm 200mm 300mm
Blade Type	U-shape Edge Gripper Blade Edge Gripper Vacuum (1-sided or 2-sided) Bridge Vacuum
Material	Titanium PEEK
Thickness	Normal Ultra-thin
Mapper	Reflective Mapper Through-beam Mapper

