

EPSON®
EXCEED YOUR VISION

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EPSON

G-Series

The next generation SCARA Robots

The Power of Choice

The Best Just Got Better

EPSON G-Series SCARA Robots

- **High Speed** – Improvements of up to 20% vs. our already fast E2 Series
- **Heavy Payloads** – Increased payload capacities up to 20%
- **Wide Variety** – 200+ different G-Series models available from 175 - 1,000mm
- **Large Work Envelopes** – Expanded motion range up to 23%
- **Extended Z Axis** - Available for applications (like packaging) requiring longer strokes
- **High Precision** – Repeatabilities down to 15 microns
- **Washdown models** – IP65 and IP54 models available in most sizes and configurations
- **Cleanroom Models** – ISO 3 Clean & ESD models available in all sizes and configurations
- **Ease of Use** – Industry leading EPSON RC+ significantly reduces development time vs. competitive products
- **Low Cost** – G-Series robots run on the low cost EPSON Micro PowerDrive RC180
- **Fully Integrated Options** – Vision Guidance, .NET Connectivity, DeviceNet, EtherNet/IP, Profibus, Expansion I/O and more...

200+ G-Series Models

Look no further for your next SCARA robot as EPSON Robots give you more Power of Choice than ever before. With 200+ models available in sizes from 175 – 1,000mm in reach and payloads of up to 20kg, chances are that EPSON has the model and configuration you need for your next application.

EPSON G-Series robots feature **Max-R**, a **new high rigidity arm design** that achieves **ultra-high speed**, **ultra-high precision** and **low vibration**. This puts EPSON G-Series robots in the top of their class. With speeds and payload improvements of up to 20% vs. our already fast E2 Series SCARA models, **THE BEST JUST GOT BETTER!**

EPSON G-Series SCARA robots are ideally suited for the Medical, Automotive, Electronics, Consumer, Food, Lab Automation, Semiconductor, Plastics, Appliance, Aerospace industries and many more. They can be used for a wide variety of applications ranging from pace maker assembly to DNA testing or from chain saw to hard drive assembly. There are tens of thousands of different applications that our robots can handle. Let us help you with yours.

EPSON G-Series Configurations

	G1	G3	G6	G10	G20
Payload (Max./Rated)	1/0.5kg	3/1kg	6/3kg	10/5kg	20/10kg
Reach (Axis 1 + Axis 2)					
175mm	●	–	–	–	–
225mm	●	–	–	–	–
250mm	–	●	–	–	–
300mm	–	●	–	–	–
350mm	–	●	–	–	–
450mm	–	–	●	–	–
550mm	–	–	●	–	–
650mm	–	–	●	●	–
850mm	–	–	–	●	●
1,000mm	–	–	–	–	●
Z-axis length *1					
100mm	●	–	–	–	–
150mm	–	●	–	–	–
180mm	–	–	●	●	●
330mm	–	–	●	–	–
420mm	–	–	–	●	●
Configurations					
Standard	●	●	●	●	●
Wall/Ceiling mount	–	●	●	●	●
Cleanroom/ESD	●	●	●	●	●
IP54/IP65	–	–	●	●	●

*1 The usable Z-axis length is shortened by 20-30mm for cleanroom and IP54 / IP65 machines.



200+ models available

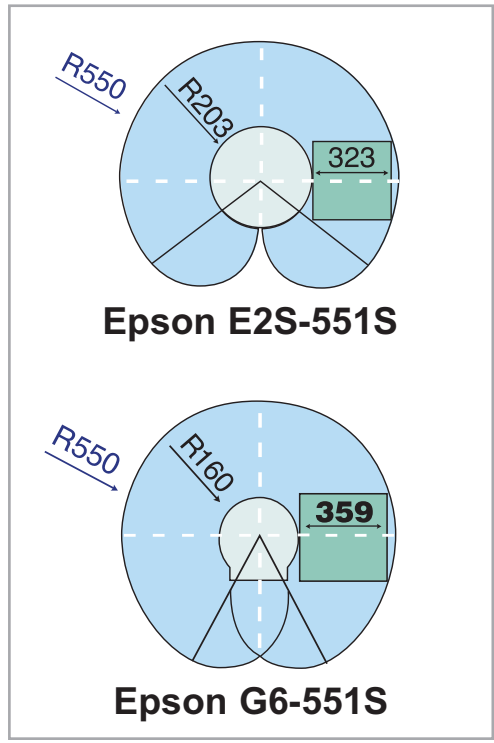
The Power of Choice

Mounting Configurations



All EPSON G-Series robots are available in wall, ceiling or table top mounting configurations to help maximize available workspace. While table top models are the most commonly used, EPSON Robot users love the ceiling and wall mount configurations to run conveyors underneath. With such a wide range of product and mounting configurations, chances are that EPSON has the right robot for your next application.

G6 Design Increases Working Range



Comparison of the working ranges

While it may seem impossible, our G6 550mm robots can handle many applications with large working range requirements that other robots need 600mm of reach to handle. With up to a 23% larger working range vs. previous and competitive models, **EPSON G-Series robots lead the industry in footprint to workspace ratios.** Just look at the advantages of the G-Series:

- Smaller workcells help save valuable factory space
- Increased range of motion (G-Series reaches far behind itself)
- Larger working quadrangle allows use of larger pallets (see figure at left)

Protected Models – IP54 and IP65



EPSON G-Series Protected Models are available for those applications that require an extra level of dust or water resistance. Our G-Series **washdown** and **dustproof robots** are perfect for applications such as food handling, industrial applications, etc. A large selection of G-Series models are available in either IP54 or IP65 configurations.

- IP54 (Dust)** - Dust shall not ingress in a quantity to interfere with satisfactory operation of the robot
- IP54 (Water)** - Water splashing against the enclosure from any direction shall have no harmful effect
- IP65 (Dust)** - No ingress of dust
- IP65 (Water)** - Water projected by a nozzle against enclosure from any direction shall have no harmful effects

ISO 3 Clean & ESD

Cleanroom G-Series models include additional features such as special Z-Axis bellows, special covers, cover seals, etc. to reduce particulates emitted by the robot to enable use in cleanroom environments. EPSON ISO 3 Clean & ESD robots are widely used in the Hard Drive and Semiconductor industries due to their reliability, outstanding performance and ease of use while also maintaining high cleanroom and ESD compliance. Some of the additional key features for EPSON Cleanroom/ESD models are shown below:

- All EPSON G-Series models and sizes are available in ISO 3 Clean configurations
- All EPSON cleanroom robots are also ESD compliant.*1 This makes them ideal for ESD sensitive applications where electro-static discharge can create defective parts such as the hard drive industry.
- Internal vacuum lines are included to draw air from the base and arm cover interiors

*1 EPSON Robots was the first major assembly robot vendor to introduce ESD compliant robots which are now widely used in the hard drive and electronics industries.



G1 SCARA Robots

- Arm Lengths from 175 to 225mm
- Industry Leading Precision Assembly
- Best in Class Cycle Rates
- Maximum Work Envelope Usage
- Ultra Compact yet Extremely Powerful
- High Rigidity Arm = Ultra High Speed
- Robust Design for Excellent Durability
- ISO 3 Clean & ESD Compliant Models
- Fully Integrated Options including:
Vision Guidance, .Net Connectivity, EtherNet/IP,
DeviceNet, Profibus, Expansion I/O and more



Industry Leading Mini SCARA

EPSON G1 robots are the low cost, high performance leader for mini SCARA Robots. With best in class cycle rates and motion range, G1 robots are the most powerful and compact mini SCARAs available in the market today.

G1 Mini SCARAs provide everything you've come to expect from EPSON Robots except they are smaller. Our 225mm robot arms can handle many applications with large working range requirements that other robots need 250mm of reach to handle. G1 robots lead the industry in footprint to workspace ratios. Imagine now being able to use a 225mm arm for applications that used to require a much larger 250mm SCARA arm - What a great saving of valuable floor space.

High rigidity construction combined with superior controls enable G1 arms to achieve industry leading speed and precision. 3-axis models allow for superior performance for press fit screw tightening and linear dispensing applications.

G1 robots are ideally suited for applications and industries which require high precision assembly of small components, demanding cycle times and compact production lines.

3 Axis Models Available

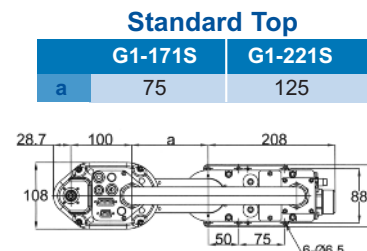
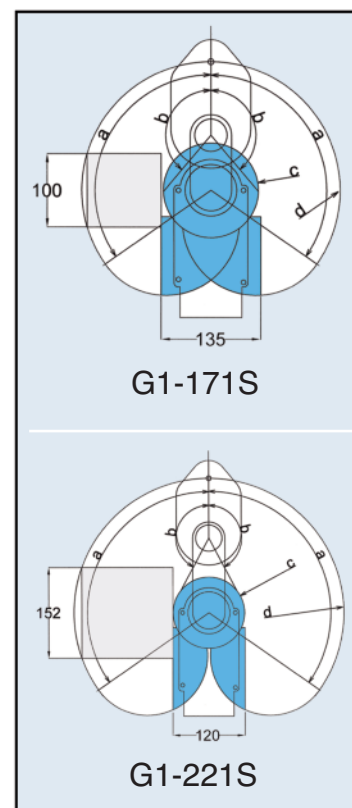


G1 Specifications

		4-axis		3-axis		
		G1-171	G1-221	G1-171	G1-221	
Arm Length (mm)	Horiz. (J1 + J2)	75 + 100 = 175	125 + 100 = 225	75 + 100 = 175	125 + 100 = 225	
Payload (kg)	Max. / Rated	1 / 0.5		1 / 0.5		
Repeatability	mm	J1 + J2	+/-0.005	+/-0.008	+/-0.005	
	deg	J3	+/-0.010			
		J4	+/-0.01			
Cycle Time ^{*1}		0.29	0.30	0.29	0.30	
Max. Operating Speed	mm/sec	J1 + J2	2,630	3,000	2,630	3,000
	deg/sec	J3	1,200			
		J4	3,000			
Motor Wattage (W)		50 / 50 / 50 / 50		50 / 50 / 50		
Insertion Force		50N (5.1 kgf)				
U inertia	kg-m ²	Max. / Rated	0.004 / 0.0003		-	
Axis Motion Range	J1 (deg)	+/-125		+/-125		
	J2 (deg)	+/-140 ^{*2} (+/-140) ^{*3}	+/-152 ^{*2} (+/-149) ^{*3}	+/-135 ^{*2} (+/-123) ^{*3}	+/-135 ^{*2} (+/-132) ^{*3}	
	J3 (mm)	100 ^{*2} (80) ^{*3}				
	J4 (deg)	+/-360				
User Lines	Electric	24 lines (15pin, 9pin)				
	Air	Ø4 x 1, Ø6 x 2				
Z Axis Diameter (mm)		Ø8				
Mounting Hole Footprint (mm)		125 x 88 (4-M6)				
Weight (kg)		8				
Environmental	Temperature	5 - 40 deg C				
	Humidity	10 - 80% (non condensing)				
Optional Arm Configurations	Mounting Type	Tabletop				
	Clean & ESD	ISO 3 Clean & ESD				
Robot Cables (Meters)		3M (standard) / 5M (optional) / 10M (optional)				
Available Controllers		Micro PowerDrive RC180 PC Based Controller RC620+				

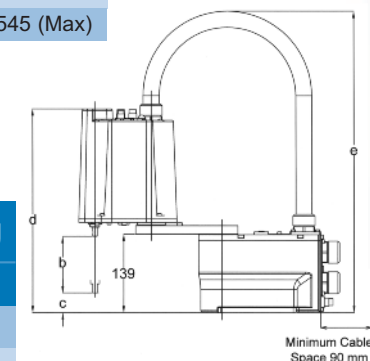
*1: Cycle time based on 0.5kg payload *2: Standard configuration *3: Clean & ESD configuration

G1 Dimensional Drawings for Work Envelope and Installation



Standard Side	
	G1-171S G1-221S
b	100
c	35
d	360
e	515 (Max) 545 (Max)

Installation Dimension	Table-Top mounting	
Model	G1-171S	G1-221S
a-Motion range of Joint #1 (deg)	+/-125	
b-Motion range of Joint #2 (deg)	+/-140	+/-152
c-Inner working radius (mm)	64	60
d-Reach (mm)	175	225
Largest working quadrangle (mm ²)	100	152



Maximum motion range varies for cleanroom models. Contact Epson for detailed information.

G3 SCARA Robots

- Arm Lengths from 250 to 350mm
- Leader in its Class for both Cycle Time and Precision
- Best in Class Motion Range
- Small yet Extremely Powerful
- Robust Design for Excellent Durability
- ISO 3 Clean & ESD Compliant Models
- Fully Integrated Options including: Vision Guidance, .Net Connectivity, EtherNet/IP, DeviceNet, Profibus, Expansion I/O and more



G3 Specifications

			G3-251	G3-301	G3-351
Arm Length (mm)		Horiz. (J1 + J2)	120 + 130 = 250	170 + 130 = 300	220 + 130 = 350
Payload (kg)		Max. / Rated		3 / 1	
Repeatability	mm	J1 + J2	+/-0.008		+/-0.010
	deg	J3 J4		+/-0.010 +/-0.005	
Cycle Time ^{*1}			0.36	0.37	0.37
Max. Operating Speed	mm/sec	J1 + J2	3,550	3,950	4,350
	deg/sec	J3 J4		1,100 3,000	
Motor Wattage (W)			200 / 150 / 150 / 150		
Insertion Force			150N (15.3 kgf)		
U inertia	kg·m ²	Max. / Rated		0.05 / 0.005	
Axis Motion Range	J1 (deg)	Table Top Mount: Straight Arm		+/-140	
		Curved Right	-	-125 to +150	-110 to +165
		Curved Left	-	-150 to +125	-165 to +110
		Multimount (Ceiling Wall): Straight Arm	-	+/-115	+/-120
		Curved Right	-	-	-105 to +130
		Curved Left	-	-	-130 to +105
	J2 (deg)	Table Top Mount: Straight Arm	+/-141 ^{*2} (+/-137) ^{*3}	+/-142 ^{*2} (+/-141) ^{*3}	+/-142 ^{*2} (+/-142) ^{*3}
		Curved Right	-	-135 to +150 ^{*2} (-135 to +145) ^{*3}	-120 to +165 ^{*2} (-120 to +160) ^{*3}
		Curved Left	-	-150 to +135 ^{*2} (-145 to +135) ^{*3}	-165 to +120 ^{*2} (-160 to +120) ^{*3}
		Multimount (Ceiling Wall): Straight Arm	-	+/-135	+/-142
		Curved Right	-	-	-120 to +160 ^{*2} (-120 to +150) ^{*3}
		Curved Left	-	-	-160 to +120 ^{*2} (-150 to +120) ^{*3}
J3 (mm)	Standard		+150 ^{*2} (120) ^{*3}		
J4 (deg)	All		+/-360		
User Lines	Electric		15 lines (15pin)		
	Air		Ø4 x 1, Ø6 x 2		
Z Axis Diameter (mm)			Ø16		
Mounting Hole Footprint (mm)			120 x 120 (4-M8)		
Weight (kg)	Table Top Mount		14		
	Multimount (Ceiling/Wall):	N/A		14	
Environmental	Temperature		5 - 40 deg C		
	Humidity		10 - 80% (non condensing)		
Optional Arm Configurations	Mounting Type	N/A		Multimount	
	Clean & ESD			ISO 3 Clean & ESD	
Robot Cables (Meters)			3M (standard) / 5M (optional) / 10M (optional)		
Available Controllers			Micro PowerDrive RC180 PC Based Controller RC620+		

*1: Cycle time based on 1kg payload *2: Standard configuration *3: Clean & ESD configuration

Compact, Ultra Powerful and Low Cost

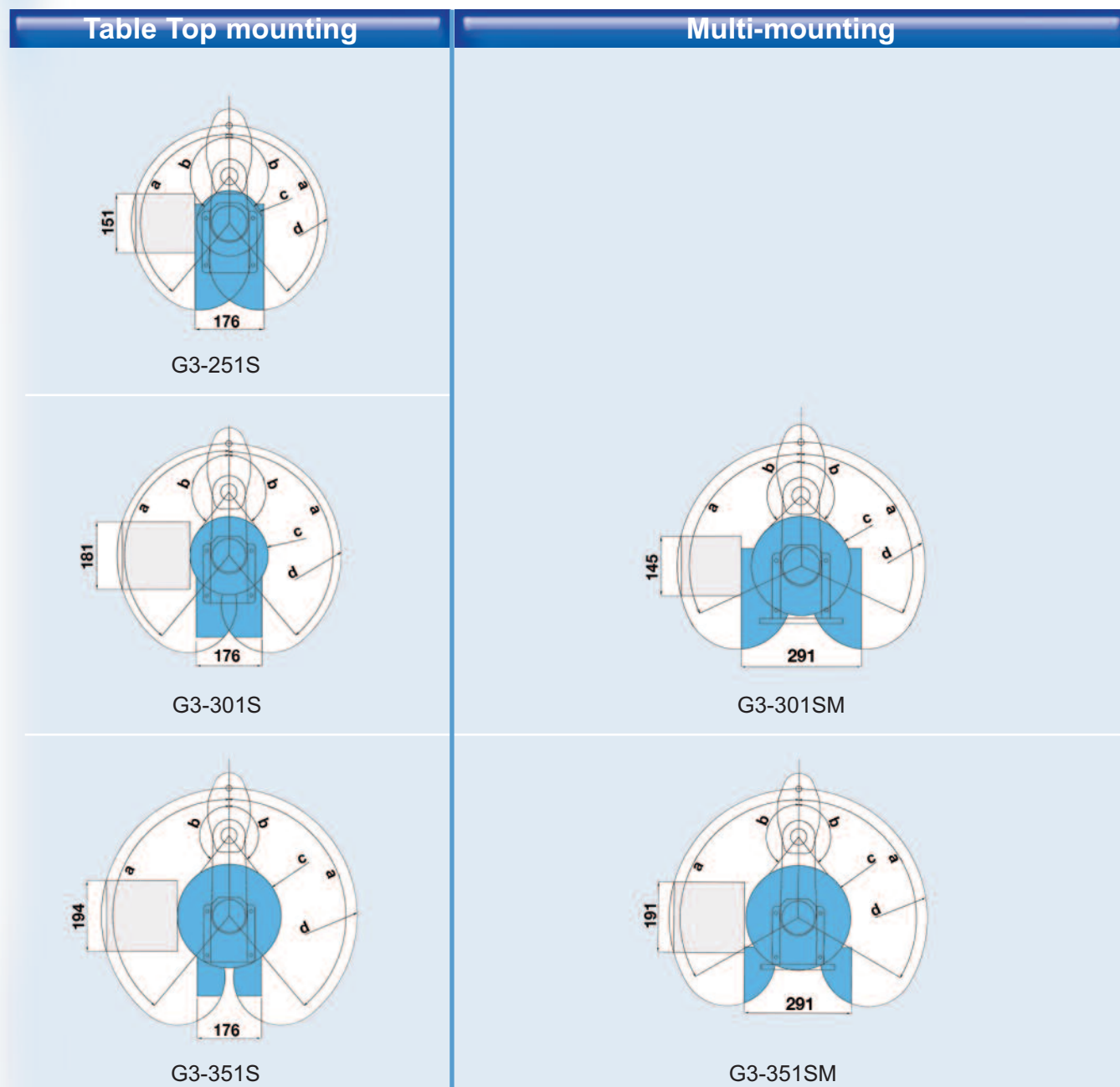
EPSON G3 robots lead the industry with best in class cycle time, precision and motion range. Simply put, they are the low cost, high performance leader for small SCARA Robots. With over 30 models available in sizes from 250 - 350mm, G3 robots are able to meet the demanding space requirements of factories with limited workspace areas.

Unique to the G3 is our new curved arm option to maximize work envelope usage. Our 350mm curved arm model is able to match the motion range of larger 400mm class SCARA robots, thus saving our customers valuable floor space.

A small footprint and high performance capabilities make EPSON G3 robots perfect for applications and industries requiring demanding cycle times, high precision and high reliability such as: hard disk assembly, lab automation, electronics, medical device assembly, photonics, semiconductor, telecommunications and many others.



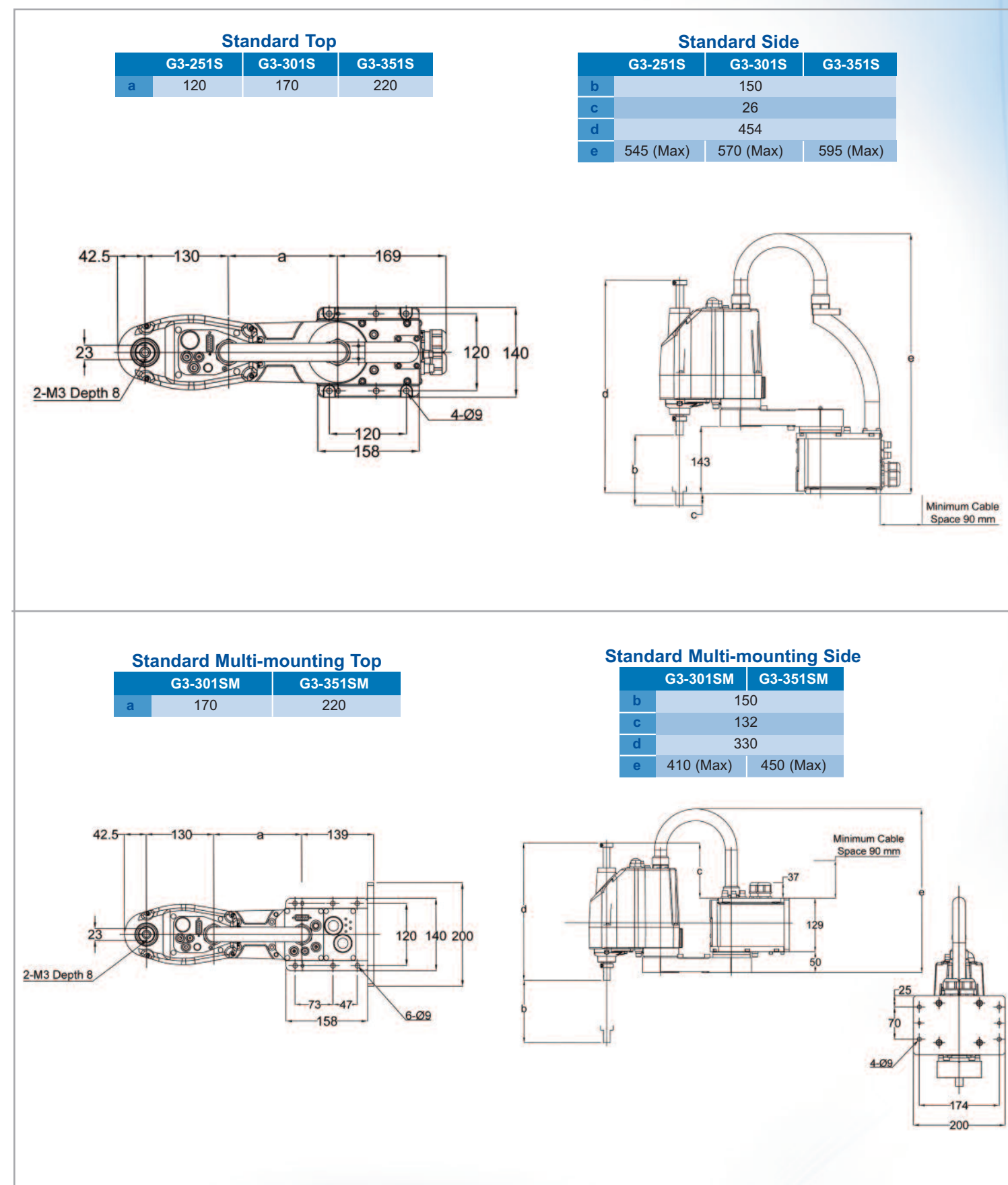
G3 Work Envelope Dimensions Straight Arm



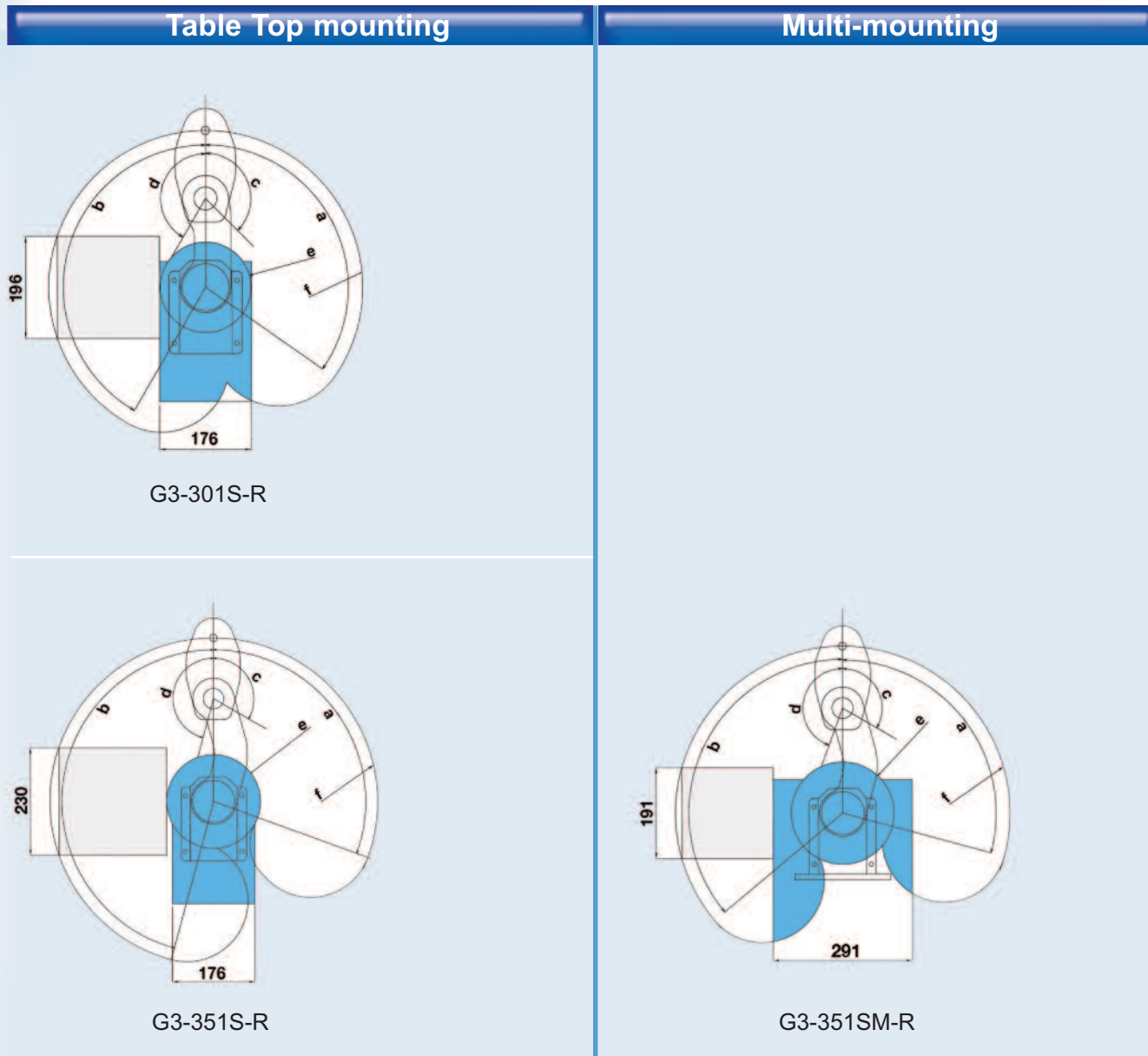
Installation Dimension	Table-Top mounting			Multi-mounting	
	G3-251S	G3-301S	G3-351S	G3-301SM	G3-351SM
a -Motion range of Joint #1 (deg)		140+/-		115+/-	120+/-
b -Motion range of Joint #2 (deg)	141+/-	142+/-		135+/-	142+/-
c -Inner working radius (mm)	84	105	142	121	142
d -Reach (mm)	250	300	350	300	350
Largest working quadrangle (mm ²)	151	181	194	145	191

Maximum motion range varies for cleanroom, protected models. Contact Epson for detailed information.

G3 Dimensional Drawings for Installation Straight Arm



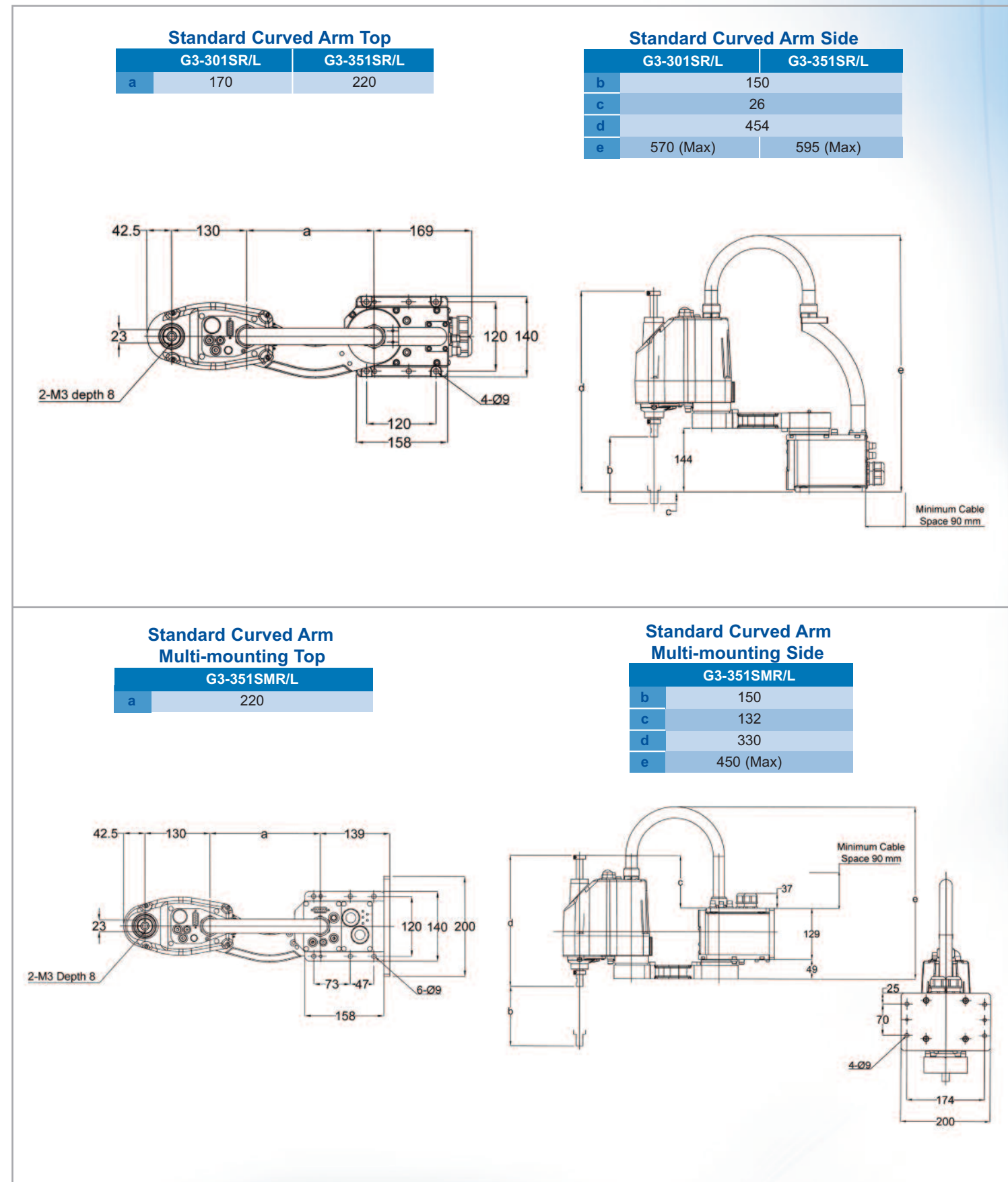
G3 Work Envelope Dimensions Curved Arm



Installation Dimension	Table-Top mounting				Multi-mounting	
	G3-301SR	G3-301SL	G3-351SR	G3-351SL	G3-351SMR	G3-351SML
a -Motion range of Joint #1 (deg)	125	150	110	165	105	130
b -Motion range of Joint #1 (deg)	150	125	165	110	130	105
c -Motion range of Joint #2 (deg)	135	150	120	165	120	160
d -Motion range of Joint #2 (deg)	150	135	165	120	160	120
e -Inner working radius (mm)	87		100		108	
f -Reach (mm)	300		350			
Largest working quadrangle (mm ²)	196		230		191	

Maximum motion range varies for cleanroom, protected models. Contact Epson for detailed information.

G3 Dimensional Drawings for Installation Curved Arm



G6 SCARA Robots

- Arm lengths from 450 to 650mm
- High Rigidity Arm = Ultra High Speed
- Best in Class Motion Range
- Increased Payloads by 20%
- Tabletop, Ceiling and Wall Mount models
- IP54 and IP65 Washdown / Dustproof models
- ISO 3 Clean & ESD compliant models
- Fully integrated Options including: Vision Guidance, .Net Connectivity, EtherNet/IP, DeviceNet, Profibus, Expansion I/O and more
- Extended Z-Axis option for applications requiring longer strokes



All G6 robots are available in table top, ceiling or wall mount configurations. Each of the G6 robots is available in Clean/ESD, IP65 or IP54 configurations for cleanroom, static sensitive assembly processes, and food or material handling applications where washdown capabilities are required.

With **best in class working range**, EPSON G6 robots are the compact footprint champion. But don't forget that EPSON G6 robots have ultra fast cycles, high repeatabilities and of course our famous EPSON **reliability that is 2nd to none**. In addition, our high performance controllers and EPSON RC+ development environment add the power, high servo performance and **industry leading ease of use** that make EPSON G6 SCARA robots the best choice for your next automation project.

G6 Specifications

		G6-45x	G6-55x	G6-65x
Arm Length (mm)	Horiz. (J1 + J2)	200 + 250 = 450	300 + 250 = 550	400 + 250 = 650
Payload (kg)	Max. / Rated		6 / 3	
Repeatability	J1 + J2		+/-0.015 mm	
	J3		+/-0.010 mm	
	J4		+/-0.005 deg	
Cycle Time ^{*1}		0.33	0.36	0.38
Max. Operating Speed	J1 + J2	6,440 mm/sec	7,170 mm/sec	7,900 mm/sec
	J3 (180 / 330)		1,100 / 2,350 mm/sec	
	J4		2400 deg/sec	
Motor Wattage (W)			400 / 400 / 200 / 100	
Insertion Force			150N (15.3 kgf)	
U inertia	Max. / Rated		0.12 / 0.01 kg·m ²	
User Lines	Electric		24 lines (15pin, 9pin)	
	Air		Ø6 x 2, Ø4 x 2	
Z Axis Diameter (mm)			Ø20	
Mounting Hole Footprint (mm)			150 x 150 (4-M8)	
Weight (kg)	Floor Mount		27	28
	Ceiling Mount		27	28
	Wall Mount		29	29.5
Environmental	Temperature		5 - 40 deg C	
	Humidity		10 - 80% (non condensing)	
Optional Arm Configurations	Mounting Type		Tabletop, Ceiling, Wall	
	Clean & ESD		ISO 3 Clean & ESD	
	IP Rating		IP54, IP65	
Available Controllers			Micro PowerDrive RC180 PC Based Controller RC620+	

*1: Cycle time based on 1kg payload

Compact, High Speed and Powerful

EPSON G6 robots are part of our new G-Series line-up of next generation SCARA Robots. They are perfect for applications requiring **high speed and high precision** such as mechanical and electrical assembly, pick and place, kitting, dispensing and many others. Unique to the G6 is our new **Max-E design** which provides the maximum work envelope possible with an extremely compact footprint. Imagine doing jobs with a 550mm arm that previously required 600mm of reach. It's now possible with the EPSON G6 with Max-E.



Extended Z-Axis

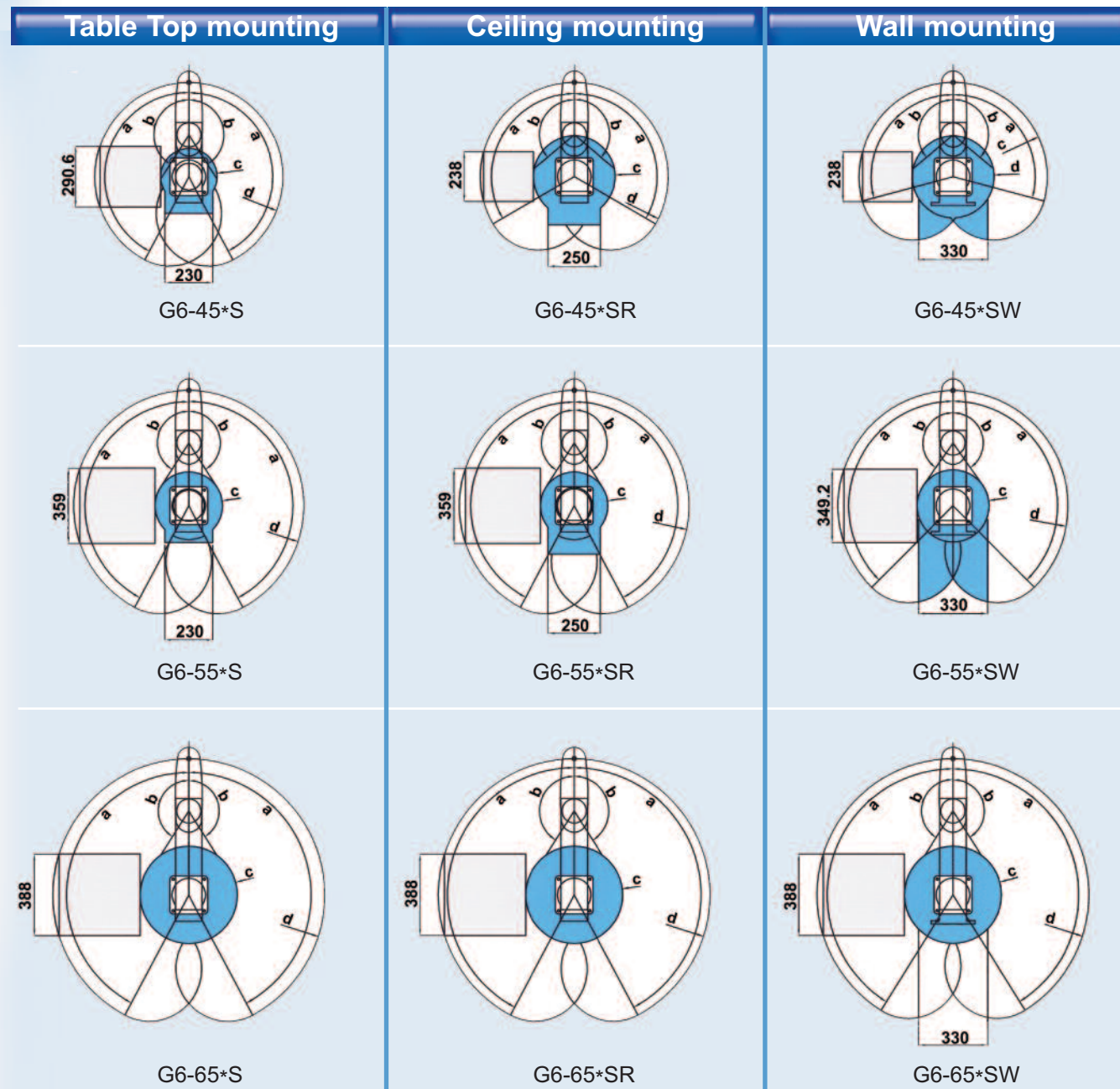
G6 robots come with either 180mm or 330mm Z axis stroke lengths (150mm or 300mm for Cleanroom/ESD and IP54/IP65 washdown models).

180mm Z axis →

330mm Z axis →



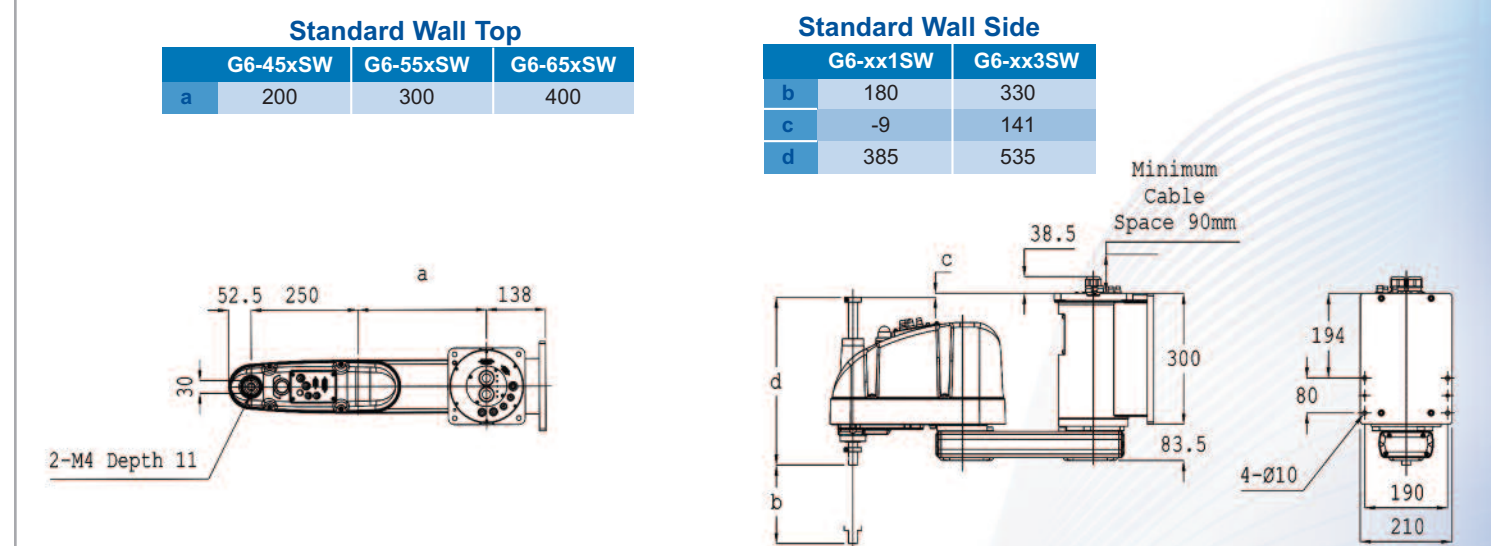
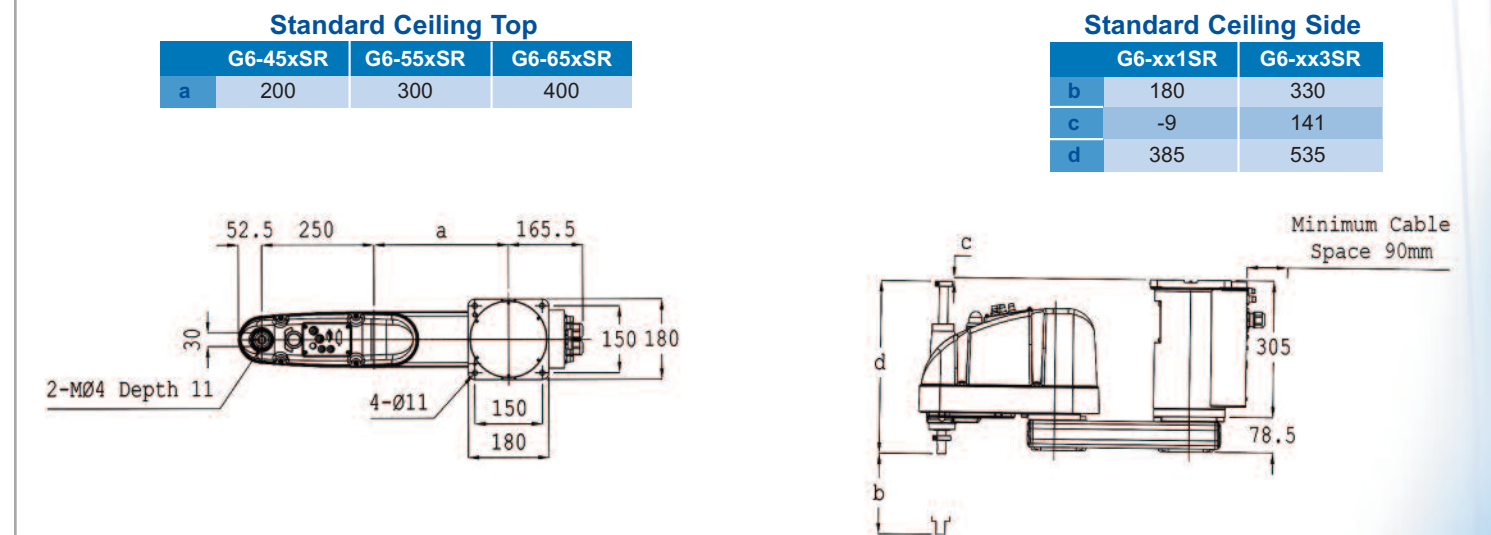
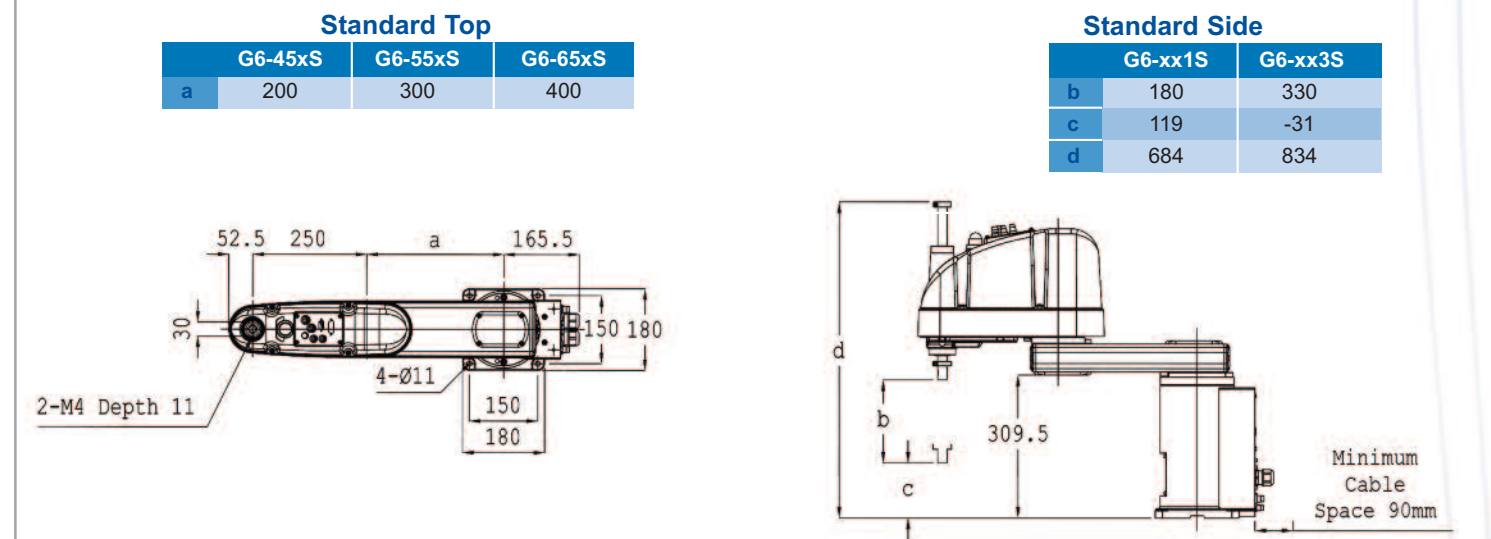
G6 Work Envelope Dimensions



Installation Dimension	Table-Top mounting			Ceiling mounting			Wall mounting		
	G6-45**	G6-55**	G6-65**	G6-45**R	G6-55**R	G6-65**R	G6-45**W	G6-55**W	G6-65**W
a -Motion range of Joint #1 (deg)	+/-152			+/-120	+/-152	+/-105	+/-135	+/-148	
b -Motion range of Joint #2 (deg)	+/-147.5			+/-130	+/-147.5	+/-130	+/-147.5		
c -Inner working radius (mm)	134.8	161.2	232	195.5	161.2	232	195.5	232	
d -Reach (mm)	450	550	650	450	550	650	450	550	650
Largest working quadrangle (mm ²)	290.6	359	388	238	359	388	238	349.2	388

Maximum motion range varies for cleanroom, protected models and Z position. Contact Epson for detailed information.

G6 Dimensional Drawings for Installation



G10 SCARA Robots

- Arm lengths from 650 to 850mm
- High Rigidity Arm = Ultra High Speed
- Increased Payload by 100% to 10 kg
- Reduced Residual Vibration for faster accel/decel rates
- Tabletop, Ceiling and Wall Mount models
- IP54 and IP65 Washdown/Dustproof models
- ISO 3 Clean & ESD compliant models
- Fully integrated Options including: Vision Guidance, .Net Connectivity, EtherNet/IP, DeviceNet, Profibus, Expansion I/O and more
- Extended Z-Axis available for applications requiring longer strokes



High Rigidity = Ultra High Speed + Heavy Payload

EPSON G10 robots are perfect for many different applications requiring **high speed AND high payloads**. G10 robots feature our **Max-R design** which gives a whole new meaning to **high rigidity**. G10 robots with Max-R are ultra high speed even with higher payloads. The rigid arm design combined with powerful EPSON controls make G10 robots ideal for handling applications such as heavy parts assembly, machine tending, material handling, packaging, dispensing and more.... All which require **high payloads and ultra high speed**. G10 robots also maximize part throughput for even the most demanding cycle time requirements. This means more parts per hour and higher profits.



As with all our G-Series SCARA robots, G10 robots are available in table top, ceiling or wall mount configurations to help maximize available workspace. G10 robots are also available in cleanroom configurations and as with all EPSON cleanroom SCARA robots are ESD compliant. This is critical for those sensitive applications where electro-static discharge can create defective parts. The protected robot models (IP54 and IP65) are suitable for applications where the robot is required to operate under adverse conditions with dust or oily mist. Washdown configured models are designed to operate in wet conditions from light mist of moisture exposure to jets of fluids spraying from any direction.

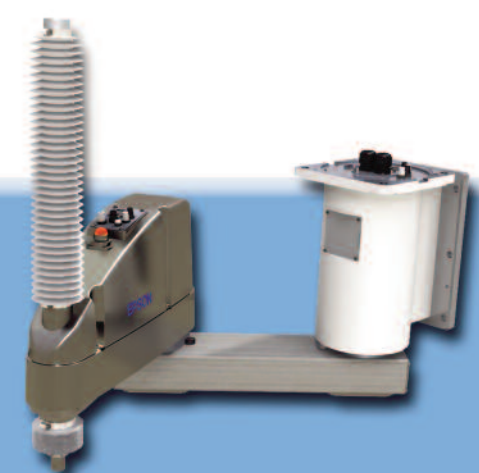
G10 Specifications

		G10-65x	G10-85x
Arm Length (mm)	Horiz. (J1 + J2)	250 + 400 = 650	450 + 400 = 850
Payload (kg)	Max. / Rated	10 / 5	
Repeatability	J1 + J2	+/-0.025 mm	
	J3	+/-0.010 mm	
	J4	+/-0.005 deg	
Cycle Time ^{*1}		0.34	0.37
Max. Operating Speed	J1 + J2	8,800 mm/sec	11,000 mm/sec
	J3 (180 / 420)	1,100 / 2,350 mm/sec	
	J4	2400 deg/sec	
Motor Wattage (W)		750 / 600 / 400 / 150	
Insertion Force		250N (25.5 kgf)	
U inertia	Max. / Rated	0.25 / 0.02 kg*m2	
User Lines	Electric	24 lines (15pin, 9pin)	
	Air	Ø6 x 2, Ø4 x 2	
Z Axis Diameter (mm)		Ø25	
Mounting Hole Footprint (mm)		200 x 200 (4-M12)	
Weight (kg)	Floor Mount	46	48
	Ceiling Mount	46	48
	Wall Mount	51	53
Environmental	Temperature	5 - 40 deg C	
	Humidity	10 - 80% (non condensing)	
Optional Arm Configurations	Mounting Type	Tabletop, Ceiling, Wall	
	Clean & ESD	ISO 3 Clean & ESD	
	IP Rating	IP54, IP65	
Available Controllers		Micro PowerDrive RC180	
		PC Based Controller RC620+	

*1: Cycle time based on 2kg payload

Extended Z-Axis

G10 robots come with either 180mm or 420mm Z axis stroke lengths (150mm or 390mm for Cleanroom/ESD and IP54/IP65 washdown models).

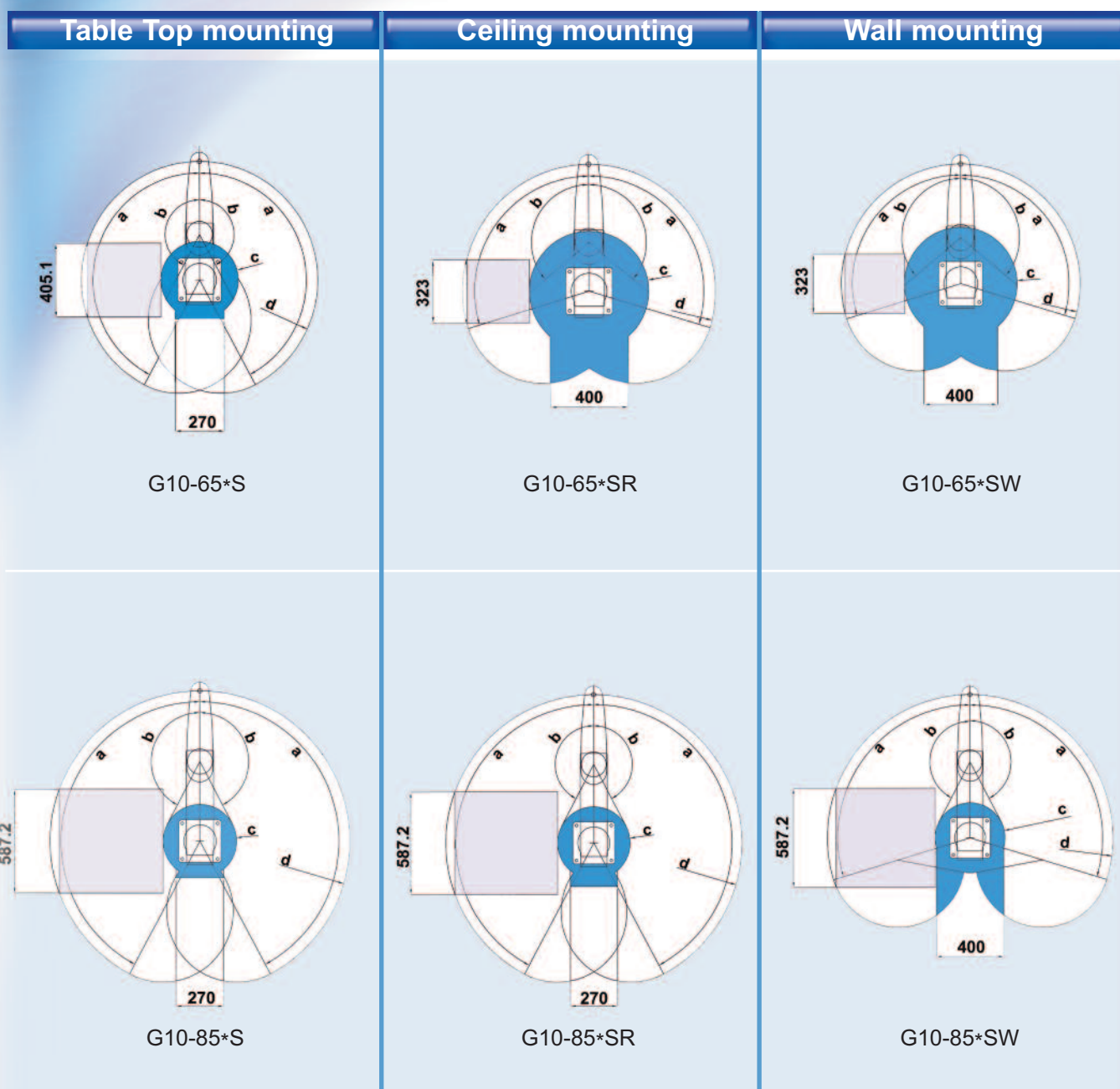


420mm Z axis →

180mm Z axis →



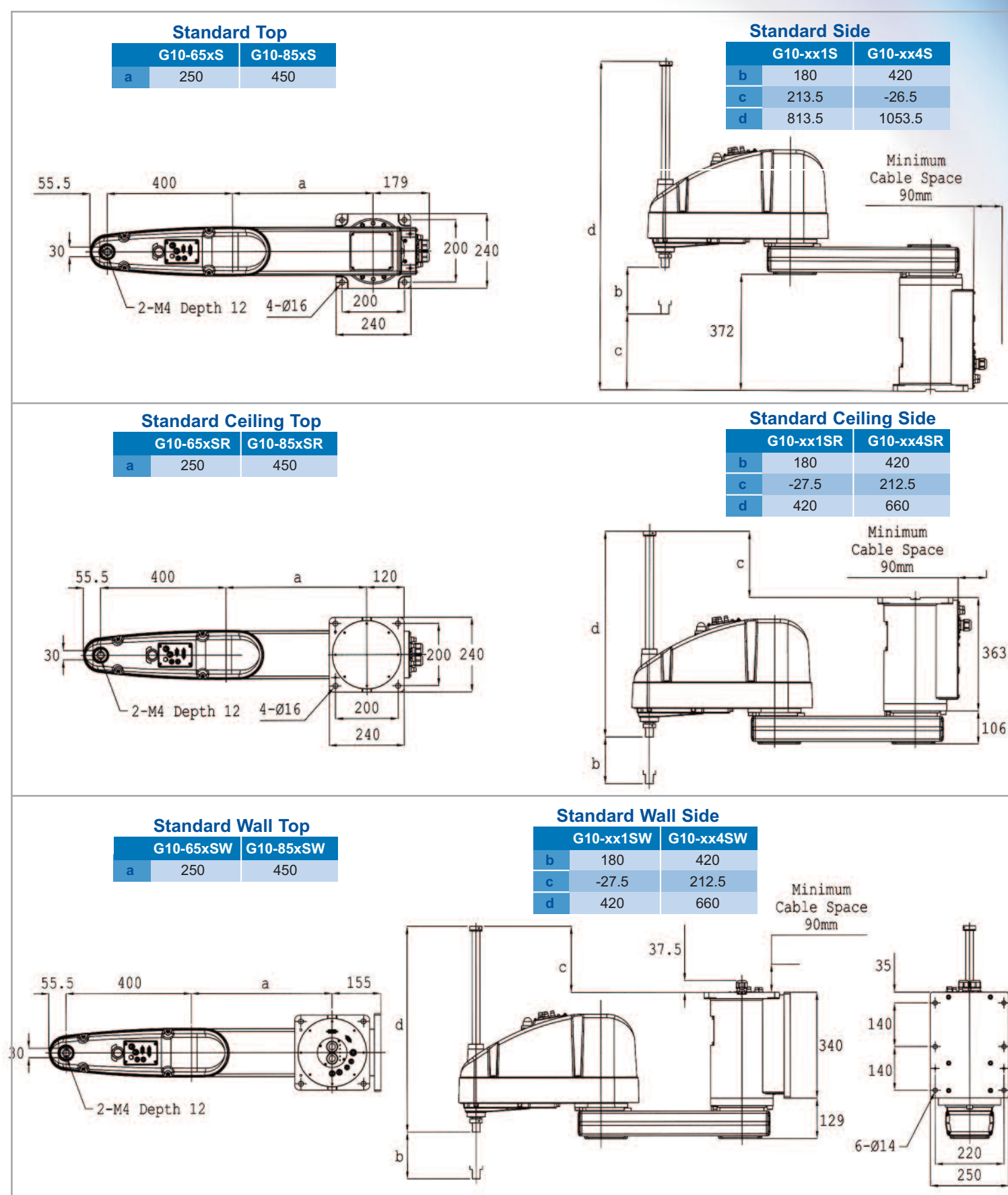
G10 Work Envelope Dimensions



Installation Dimension	Table-Top mounting		Ceiling mounting		Wall mounting	
	G10-65**	G10-85**	G10-65**R	G10-85**R	G10-65**W	G10-85**W
a - Motion range of Joint #1 (deg)	+/-152		+/-107	+/-152	+/-107	
b - Motion range of Joint #2 (deg)	+/-152.5		+/-130	+/-152.5	+/-130	+/-152.5
c - Inner working radius (mm)	212.4	207.8	306.5	207.8	306.5	207.8
d - Reach (mm)	650	850	650	850	650	850
Largest working quadrangle (mm ²)	405.1	587.2	323	587.2	323	587.2

Maximum motion range varies for cleanroom, protected models and Z position. Contact Epson for detailed information

G10 Dimensional Drawings for Installation



The Power of Choice

G20 SCARA Robots

- Arm lengths from 850 to 1,000mm
- High Rigidity Arm = Ultra High Speed
- 20kg Payload
- Monocoque design provides for higher rigidity over longer lengths
- Tabletop, Ceiling and Wall Mount models
- IP54 and IP65 Washdown / Dustproof models
- ISO 3 Clean & ESD compliant models
- Fully integrated Options including: Vision Guidance, .Net Connectivity, EtherNet/IP, DeviceNet, Profibus, Expansion I/O and more
- Extended Z-Axis available for applications requiring longer strokes



Long Reach and Heavy Payload

G20 robots are ideal for applications involving transportation of heavy loads in large work areas, such as packaging, automotive, electrical, food, pharmaceutical, and medical as well as other industries - All which require **heavy payloads, long reach and first class performance**. G20 robots along with all G-Series robots, feature our **Max-R high rigidity arm design** which results in high speed performance AND heavy payloads along with higher duty cycles. G20 robots come with either our Micro PowerDrive RC180 controller or our industry leading PC Based RC620+ controller. Both controllers feature powerful servo systems to maximize arm performance. With up to 20kg payload capacity and 850 or 1000mm arm reach, the G20 is the perfect robot for your larger jobs.



G20 robots are perfect for load/unload applications such as machine tools because of the long reach arm, high payload and extended Z axis. With a very high U-Axis moment of inertia capability, heavy payloads can be moved quickly and reliably with no end of arm shake as found with competitive models. All G20 robots are available in table top, ceiling or wall mount configurations. Each of the G20 robots are available in Clean/ESD, IP65 or IP54 configurations for cleanroom, static sensitive assembly processes, and food or material handling applications where washdown or dustproof capabilities are required.

G20 Specifications

		G20-85x	G20-A0x
Arm Length (mm)	Horiz. (J1 + J2)	450 + 400 = 850	600 + 400 = 1000
Payload (kg)	Max. / Rated	20 / 10	
Repeatability	J1 + J2	+/-0.025 mm	
	J3	+/-0.010 mm	
	J4	+/-0.005 deg	
Cycle Time ^{*1}		0.37	0.42
Max. Operating Speed	J1 + J2	11,000 mm/sec	11,500 mm/sec
	J3 (180 / 420)	1,100 / 2,350 mm/sec	
	J4	1700 deg/sec	
Motor Wattage (W)		750 / 600 / 400 / 150	
Insertion Force		250N (25.5 kgf)	
U inertia	Max. / Rated	0.45 / 0.05 kg·m ²	
User Lines	Electric	24 lines (15pin, 9pin)	
	Air	Ø6 x 2, Ø4 x 2	
Z Axis Diameter (mm)		Ø25	
Mounting Hole Footprint (mm)		200 x 200 (4-M12)	
Weight (kg)	Floor Mount	48	50
	Ceiling Mount	48	50
	Wall Mount	53	55
Environmental	Temperature	5 - 40 deg C	
	Humidity	10 - 80% (non condensing)	
Optional Arm Configurations	Mounting Type	Tabletop, Ceiling, Wall	
	Clean & ESD	ISO 3 Clean & ESD	
	IP Rating	IP54, IP65	
Available Controllers		Micro PowerDrive RC180	
		PC Based Controller RC620+	

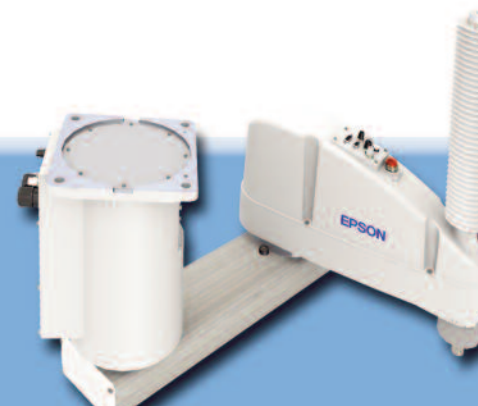
*1: Cycle time based on 2kg payload

Extended Z-Axis

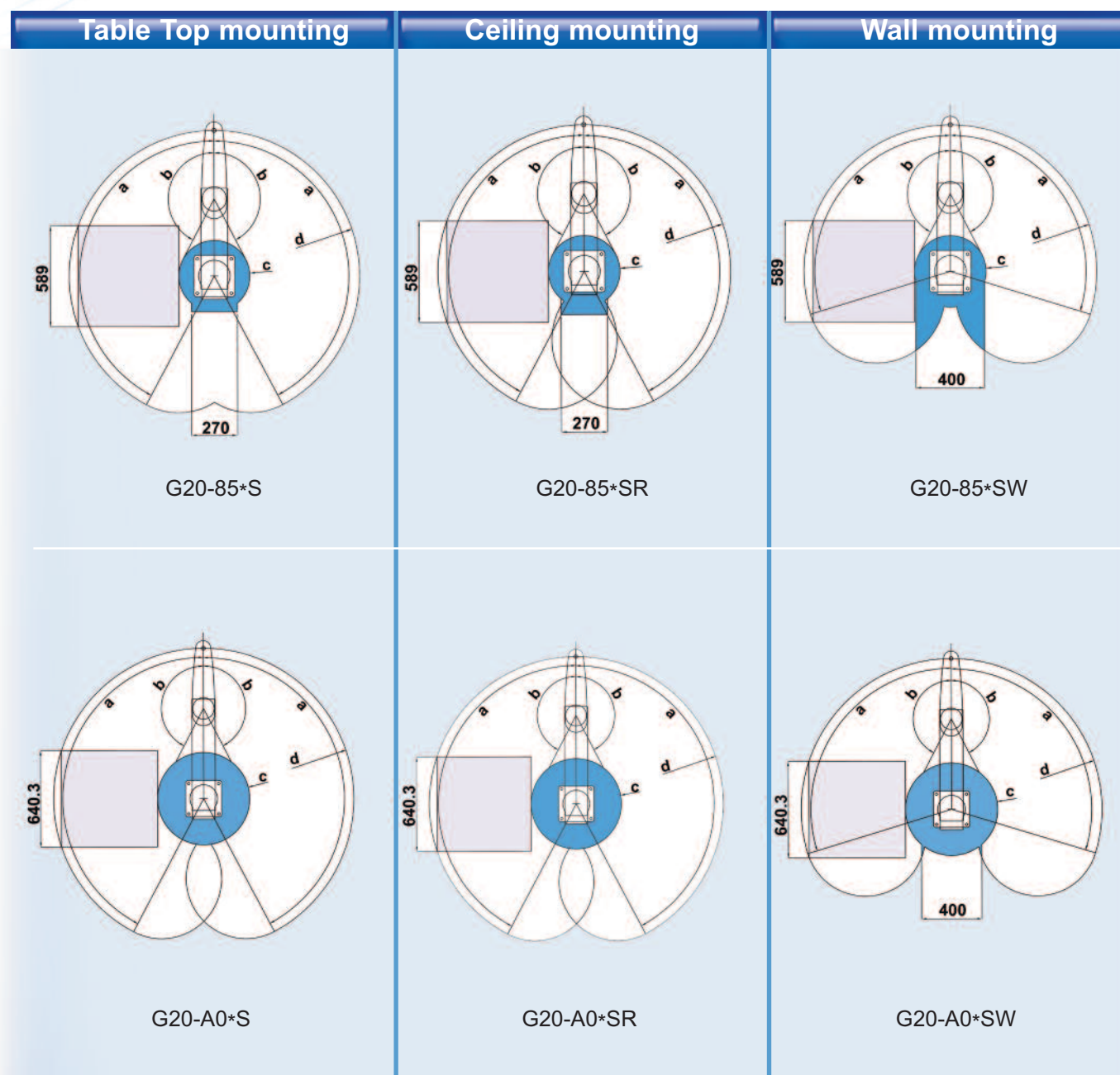
G20 robots come with either 180mm or 420mm Z axis stroke lengths (150mm or 390mm for Cleanroom/ESD and IP54/IP65 washdown models).

420mm Z axis →

180mm Z axis →



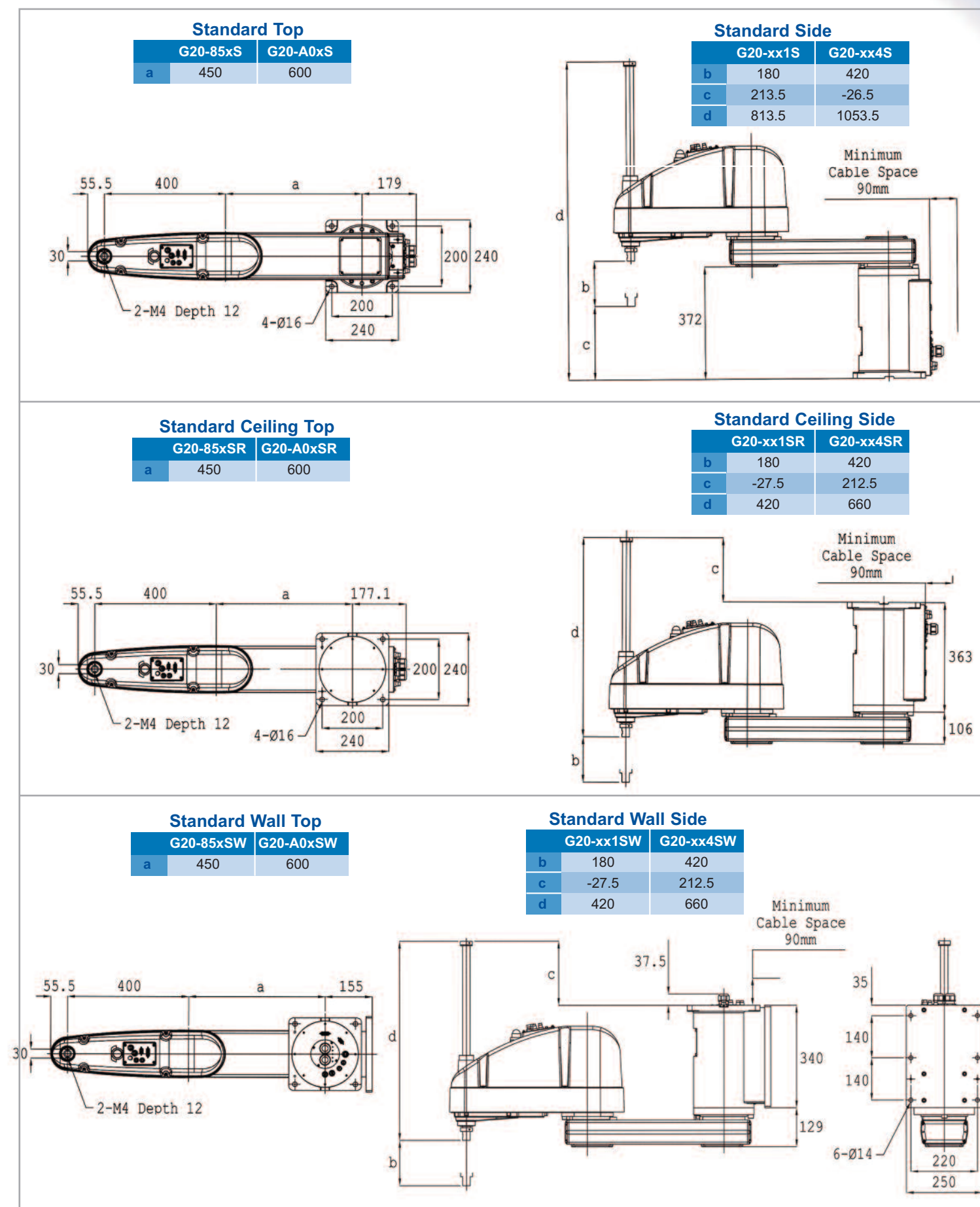
G20 Work Envelope Dimensions



Installation Dimension	Table-Top mounting		Ceiling mounting		Wall mounting	
	G20-85**	G20-A0**	G20-85**R	G20-A0**R	G20-85**W	G20-A0**W
a - Motion range of Joint #1 (deg)	+/-152				+/-107	
b - Motion range of Joint #2 (deg)	+/-152.5					
c - Inner working radius (mm)	207.8	307	207.8	307	207.8	307
d - Reach (mm)	850	1000	850	1000	850	1000
Largest working quadrangle (mm ²)	589	640.3	589	640.3	589	640.3

Maximum motion range varies for cleanroom, protected models and Z position. Contact Epson for detailed information

G20 Dimensional Drawings for Installation




EPSON G-Series Specifications

Robot Model		G1-171	G1-221	G3-251	G3-301	G3-351	G6-45x	G6-55x	G6-65x	G10-65x	G10-85x	G20-85x	G20-A0x	
Arm Length (mm)	Horiz. (J1 + J2)	75 + 100 = 175	125 + 100 = 225	120 + 130 = 250	170 + 130 + 300	220 + 130 = 350	200 + 250 = 450	300 + 250 = 550	400 + 250 = 650	250 + 400 = 650	450 + 400 = 850	450 + 400 = 850	600 + 400 = 1000	
Payload (kg)	Max. / Rated	1 / 0.5		3 / 1			6 / 3			10 / 5		20 / 10		
Repeatability	mm	J1 + J2	+/-0.005	+/-0.008	+/-0.008	+/-0.010		+/-0.015			+/-0.025		+/-0.025	
		J3	+/-0.010		+/-0.010			+/-0.010			+/-0.010		+/-0.010	
		J4	+/-0.010		+/-0.005			+/-0.005			+/-0.005		+/-0.005	
Cycle Time		0.29 ^{*1}	0.30 ^{*1}	0.36 ^{*2}	0.37 ^{*2}	0.37 ^{*2}	0.33 ^{*2}	0.36 ^{*2}	0.38 ^{*2}	0.34 ^{*3}	0.37 ^{*3}	0.37 ^{*3}	0.42 ^{*3}	
Max. Operating Speed	mm/sec	J1 + J2	2,630	3,000	3,550	3,950	4,350	6,440	7,170	7,900	8,800	11,000	11,000	11,500
		J3 (Std / Ext)	1,200		1,100			1,100 / 2,350			1,100 / 2,350		1,100 / 2,350	
		J4	3000		3000			2400			2400		1700	
deg/sec														
Motor Wattage (W)		50 / 50 / 50 / 50		200 / 150 / 150 / 150			400 / 400 / 200 / 100			750 / 600 / 400 / 150		750 / 600 / 400 / 150		
Insertion Force		50N (5.1 kgf)		150N (15.3 kgf)			150N (15.3 kgf)			250N (25.5 kgf)		250N (25.5 kgf)		
U inertia	kg.m ²	+/-0.004 / 0.0003		0.05 / 0.005			0.12 / 0.01			0.25 / 0.02		0.45 / 0.05		
Axis Motion Range	J1 (deg)	Floor Mount	+/-125		+/-140			+/-152			+/-152		+/-152	
		Ceiling Mount	-	-	-	+/-115	+/-120	+/-120	+/-152		+/-107	+/-152	+/-152	
		Wall Mount	-	-	-	+/-115	+/-120	+/-105	+/-135	+/-148	+/-107	+/-107	+/-107	
	J2 (deg)	Floor Mount	+/-140 ^{*5}	+/-152 ^{*5}	+/-141 ^{*5}	+/-142 ^{*5}		+/-141.5 ^{*4}	+/-147.5 ^{*4}		+/-152.5 ^{*4}		+/-152.5 ^{*4}	
		Ceiling Mount	-	-	-	+/-135	+/-142	+/-130	+/-147.5		+/-130	+/-152.5	+/-152.5	
		Wall Mount	-	-	-	+/-135	+/-142	+/-130	+/-147.5		+/-130	+/-152.5	+/-152.5	
	J3 (mm)	All	100 ^{*5} (80) ^{*6}		150 ^{*5} (120) ^{*6}			180 (330) ^{*5} / 150 (300) ^{*6}			180 (420) ^{*5} / 150 (390) ^{*6}		180 (420) ^{*5} / 150 (390) ^{*6}	
	J4 (deg)	All	+/- 360		+/- 360			+/- 360			+/- 360		+/- 360	
User Lines	Electric	24 lines (15pin, 9pin)		15 lines (15pin)			24 lines (15pin, 9pin)			24 lines (15pin, 9pin)		24 lines (15pin, 9pin)		
	Air	Ø4 x 1, Ø6 x 2		Ø4 x 1, Ø6 x 2			Ø6 x 2, Ø4 x 2			Ø6 x 2, Ø4 x 2		Ø6 x 2, Ø4 x 2		
Z Axis Diameter (mm)		Ø8		Ø16			Ø20			Ø25		Ø25		
Mounting Hole Footprint (mm)		125 x 88 (4-M6)		120 x 120 (4-M8)			150 x 150 (4-M8)			200 x 200 (4-M12)		200 x 200 (4-M12)		
Weight (kg)	Floor Mount	8		14			27		28	46	48	48	50	
	Ceiling Mount	-	-	-	14		27		28	46	48	48	50	
	Wall Mount	-	-	-	14		29		29.5	51	53	53	55	
Environmental	Temperature	5 - 40 deg C												
	Humidity	10 - 80% (non condensing)												
Optional Arm Configurations	Mounting Type	Tabletop		Tabletop			Tabletop, Ceiling, Wall							
	Clean & ESD	ISO 3 Clean & ESD												
	IP Rating	-	-	-	-	-	-	-	-	-	IP54, IP65			
Robot Cables (Meters)		3M (standard) / 5M (optional) / 10M (optional)												
Available Controllers		Micro PowerDrive RC180, PC Based Controller RC620+												

*1: Cycle time based on 0.5kg payload *2: Cycle time based on 1kg payload *3: Cycle time based on 2kg payload *4: Maximum motion range varies based on Z position *5: Standard Z Axis configuration *6: Clean/IP Z Axis configuration

The Power of Choice



Description of G-Series Model Codes

G-Series	
G1	... G1 Series
G3	... G3 Series
G6	... G6 Series
G10	... G10 Series
G20	... G20 Series

Arm Length	
17	... 175mm (G1)
22	... 225mm (G1)
25	... 250mm (G3)
30	... 300mm (G3)
35	... 350mm (G3)
45	... 450mm (G6)
55	... 550mm (G6)
65	... 650mm (G6, G10)
85	... 850mm (G10, G20)
A0	... 1,000mm (G20)

G6-553CR

Z Axis Length	
1	... Standard-model
3	... Long stroke (G6)
4	... Long stroke (G10, G20)

Environment	
S	... Standard-model
C	... Cleanroom-model
D	... Protected-model (IP54)
P	... Protected-model (IP65)

Mount Type	
-	(blank) Table Top mount
R	... Ceiling mount
W	... Wall mount
M	... Multi-mount



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