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Shenzhen Inovance Technology Co., Ltd.
Suzhou Inovance Technology Co. Ltd.

Tel: 4000-300124
Business: info@inovance.com
Service: service@inovance.com

South Korea-Seoul
Tel: +82 (0) 10 7428 5732 | info@inovance.eu

India
Head Office Chennai | Tel: +91 (0) 44 4380 0201
Ahmedabad | Tel: +91 794003 4272
Mumbai | Tel: +91 22 4971 5883
New Delhi | Tel: +91 11 4165 4524
Sales Network
in Kolkata, Bengaluru, Pune, Coimbatore,
Hyderabad, Vadodara, Jaipur
Email: info@inovance.ind.in

Hong Kong SAR
International Export Office

Tel: +852 2751 6080
Business: info@inovance.eu

Germany-Stuttgart
Tel: +49 (0) 7144 8990 | sales.de@inovance.eu

Italy-Milano
Tel: +39 (0) 2268 22318 | sales.it@inovance.eu

France-Bordeaux
Tel: +33 (0) 5594 01050 | sales.fr@inovance.eu

Turkey-Istanbul
Tel: +90 (216) 706 17 89 | info@inovance.eu

Spain-Barcelona
Tel: +34 93 504 94 48 | sales.es@inovance.eu

INOVANCE

Inovance Robot Selection Guide



FORWARD, ALWAYS PROGRESSING

Robot Product Family

6-Axis Robot

IR-R4 Series P 3



Load	4 Kg
Arm length	560.6 mm
Model	IR-R4-56S5-INT

IR-R4H (hollow wrist) Series P 5



Load	4 Kg
Arm length	545.7 mm
Model	R-R4H-54S5-INT

IRS311-7 Series P 7



Load	7 Kg
Arm length	717 mm / 911 mm
Model	IRS311-7-70TS5-INT IRS311-7-90TS5-INT

IR-R11 Series P 9



Load	10 Kg / 11.3 Kg
Arm length	1101.6 mm / 901.9 mm
Model	IR-R10-110S5-INT IR-R11-90S5-INT

IR-R10 Series P 11



Load	10 Kg
Arm length	1422 mm
Model	IR-R10-140S5-INT

IR-R20 Series P 13



Load	20 Kg / 10 Kg
Arm length	1723 mm / 2045 mm
Model	IR-R20-170S5-INT IR-R10-200S5-INT

SCARA Robot

IR-S4 Series P 15



Load	4 Kg
Arm length	400 mm
Model	IR-S4-40Z15S3-INT

IR-S7 Series P 17



Load	7 Kg
Arm length	500 mm / 600 mm / 700 mm
Model	IR-S7-50Z20S3-INT IR-S7-60Z20S3-INT IR-S7-70Z20S3-INT

IR-S10 Series P 19



Load	10 Kg
Arm length	600 mm / 700 mm / 800 mm
Model	IR-S10-60Z20S3-INT IR-S10-70Z20S3-INT IR-S10-80Z20S3-INT

IR-S20 Series P 21



Load	20 Kg
Arm length	800 mm / 1000 mm
Model	IR-S20-80Z42S5-INT IR-S20-100Z42S5-INT

IR-GS20 Series P 23



Load	20 Kg
Arm length	800 mm / 1000 mm
Model	IR-GS20-80Z42S5-INT IR-GS20-100Z42S5-INT

IR-S50 Series P 25



Load	50 Kg
Arm length	1200 mm
Model	IR-S50-120Z40S5-INT

IR-TS4 Series P 27



Load	4 Kg
Arm length	350 mm
Model	IR-TS4-35Z15S3-INT

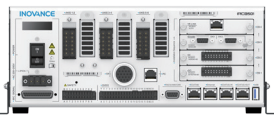
IR-TS5 Series P 29



Load	5 Kg
Arm length	550 mm
Model	IR-TS5-55Z15S3-INT

Robot Controller

IRCB501 Series P 31



IRCB501 High protection Series P 33



6-Axis Robot

IR-R4H (Hollow wrist)

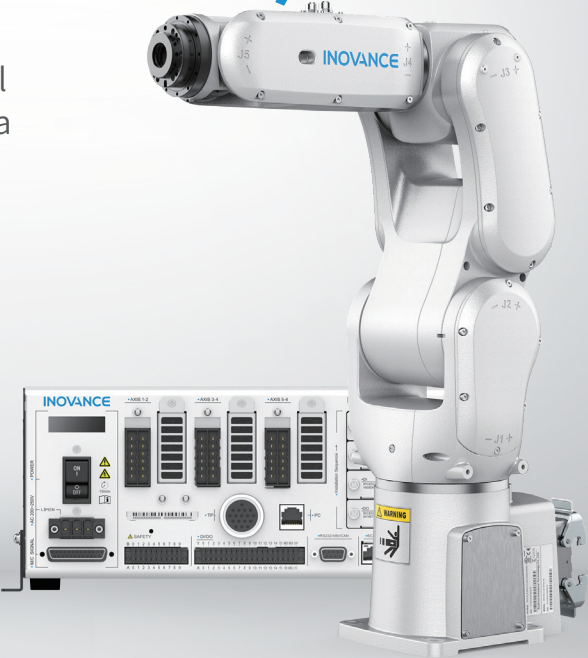
Robots featuring compact structure, with overall height and structural height reaching a new level in the industry, and short cycle time to adapt to a range of application scenarios.

Scope of Application

Handling and loading/unloading in 3C industry; handling in the photovoltaic industry; and assembly and dispensing.

Features

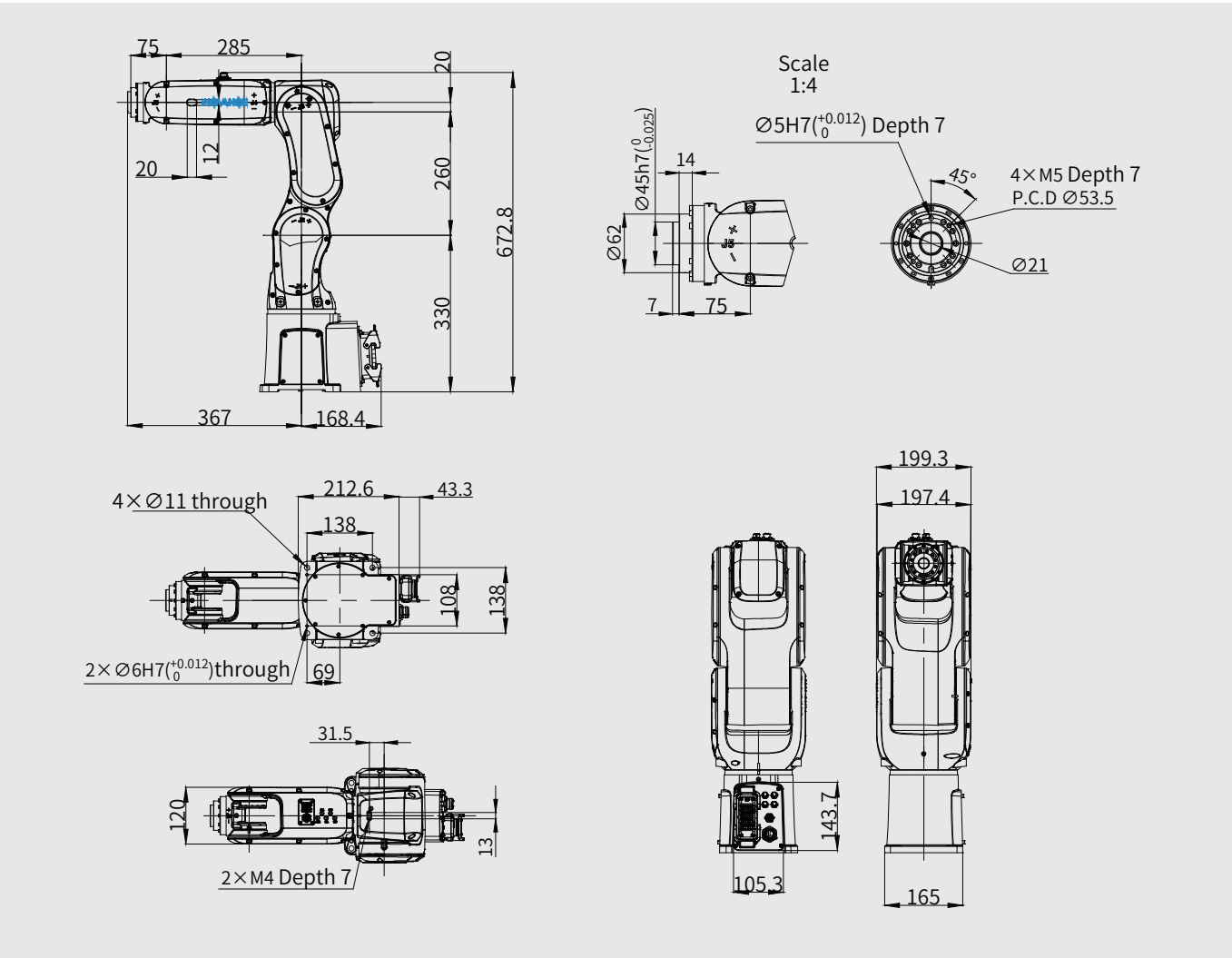
Load	4 Kg
Arm length	545.7 mm
Repeatability	±0.02 mm
IP rating	IP40 (IP67 optional)



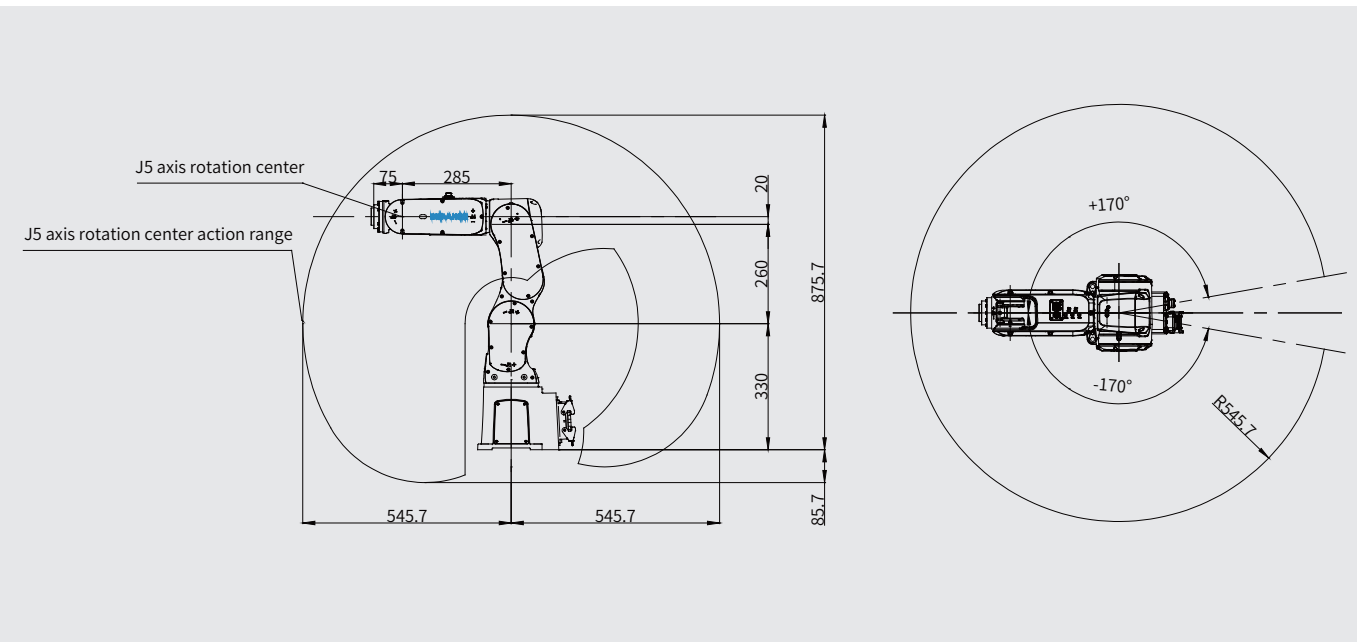
Technical Data

Model		IR-R4H-54S5-INT
Structural style		Vertical axis cascading structure
Number of Axes		6 axes
Maximum reach		545.7 mm
Repeatability		±0.02 mm
Maximum load		4 Kg
IP rating		IP40 (IP67 optional)
Maximum Axis Motion Velocity	J1	450° /s
	J2	460° /s
	J3	520° /s
	J4	560° /s
	J5	560° /s
	J6	900° /s
Axis Motion Range	J1	±170°
	J2	-120° to +110°
	J3	-65° to +195°
	J4	±190°
	J5	±120°
	J6	±360°
Allowed wrist torque	J4	8.86 Nm
	J5	8.86 Nm
	J6	4.9 Nm
Allowed wrist inertia	J4	0.2 Kg·m ²
	J5	0.2 Kg·m ²
	J6	0.067 Kg·m ²
Customer Connections	Wiring	12 Signal lines 30V 0.5A; 8 signal lines 30V 0.2A
	Air	Φ4mm×4,0.59 Mpa
Operating Conditions	Operating Ambient Temperature	0~45° C
	Ambient Humidity	5%~95%(Non-condensing)
	Maximum Temperature Gradient	1.5° C/min
Weight		24.5Kg
Matching Controller		IRCB501 Drive-control integrated controller
Mounting Mode		Floor mounted
Certification		CE,cSGSUS,KCs,Kc

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IRS311-7 Series

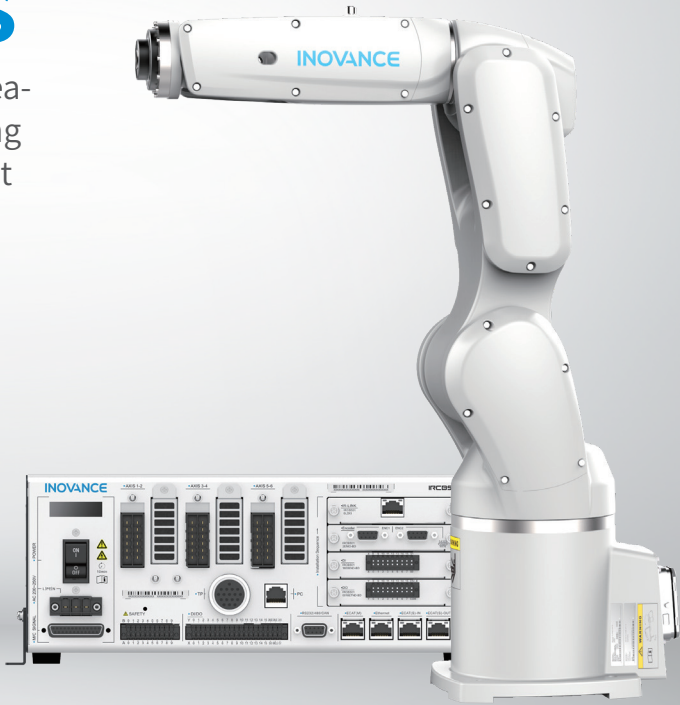
Highly compact, rigid, flexible and agile robots featuring hollow wrist structure to simplify the wiring process and prevent the production environment from being affected by abrasion of wiring pipes.

Scope of Application

Assembly, labeling, SMT, dispensing, material insertion, soldering, sorting, grinding, polishing, and more.

Features

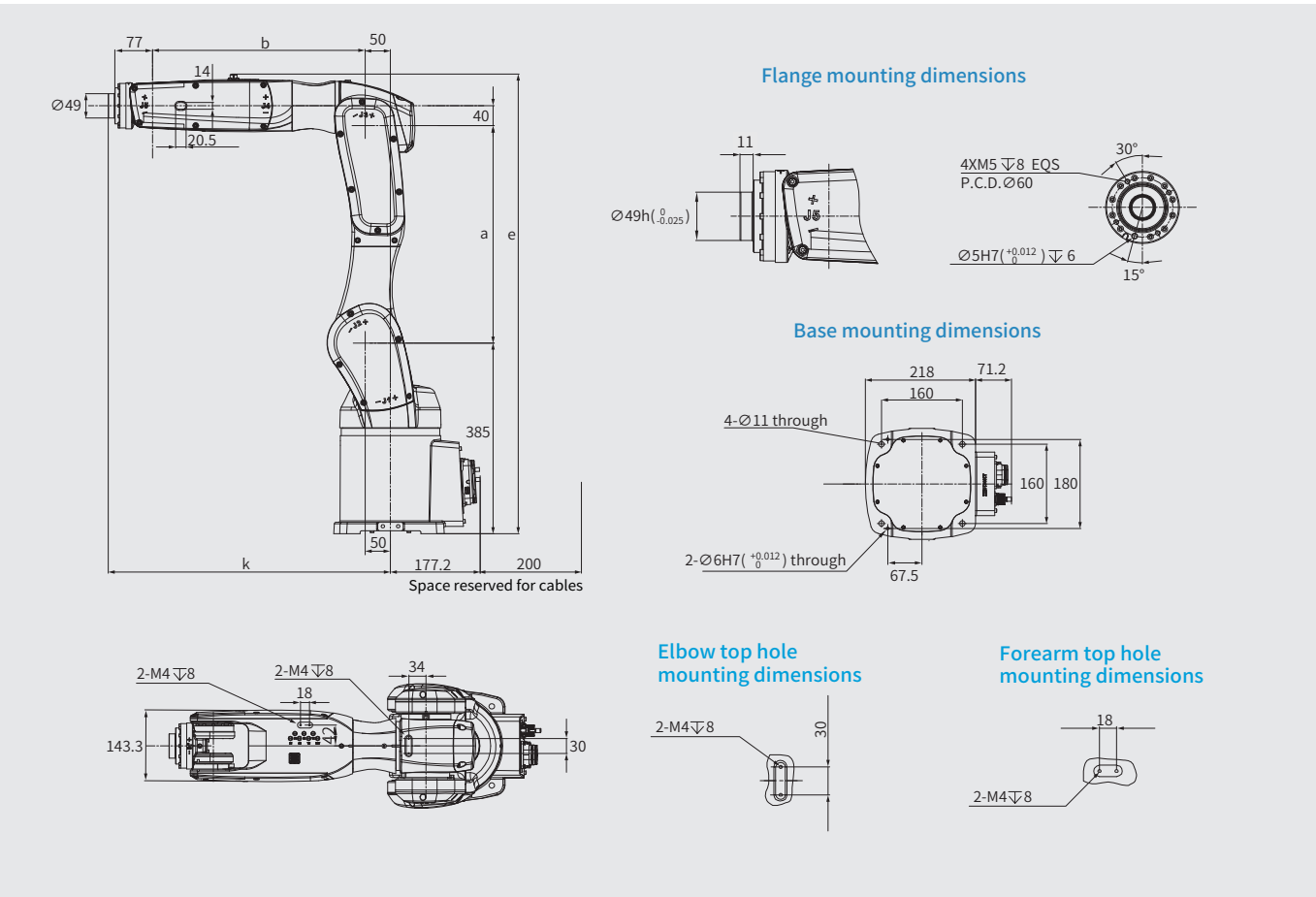
Load	7 Kg
Arm length	717 mm / 911 mm
Repeatability	±0.02 mm / ±0.03 mm
IP rating	IP65



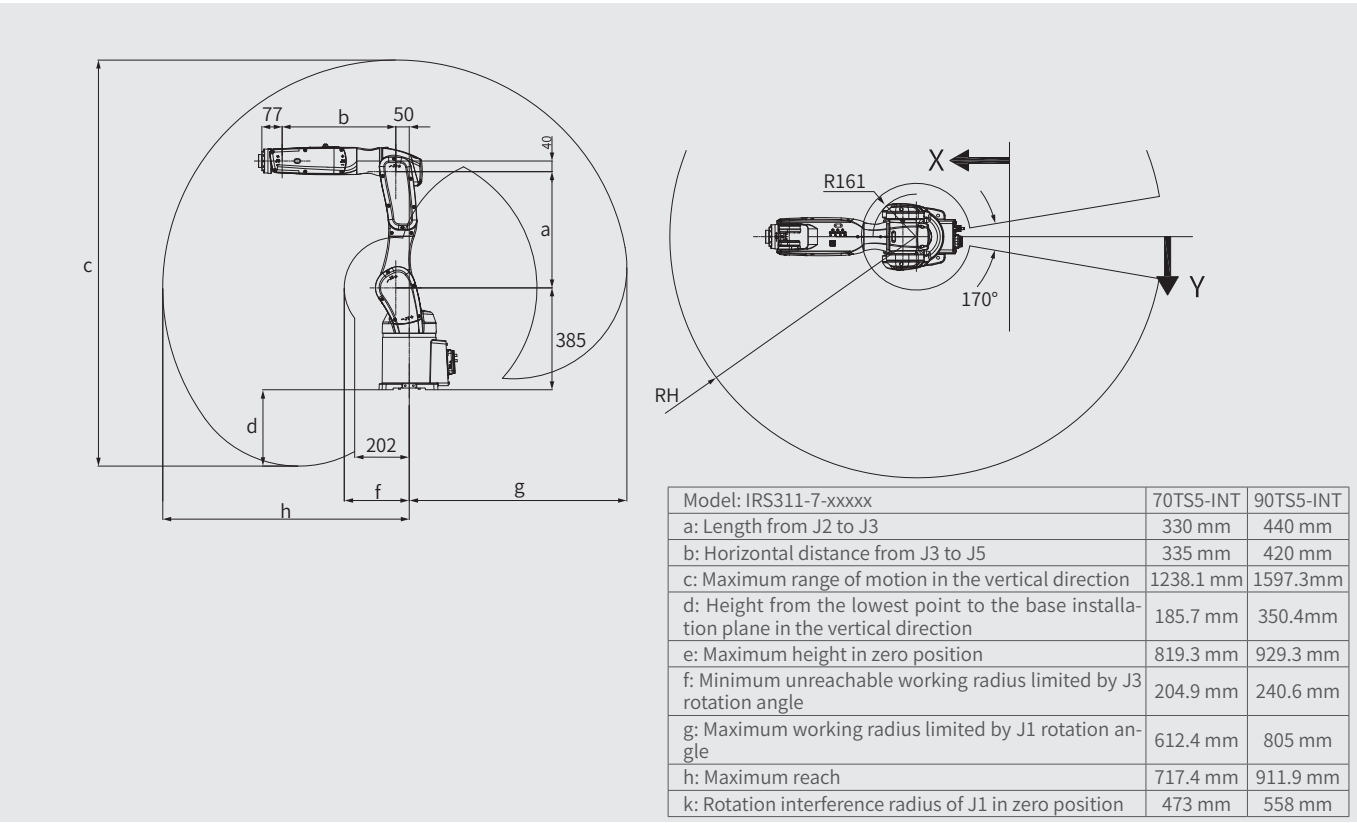
Technical Data

Model		IRS311-7-70TS5-INT	IRS311-7-90TS5-INT
Structural style		Vertical axis cascading structure	Vertical axis cascading structure
Number of Axes		6 axes	6 axes
Maximum reach		717mm	911mm
Repeatability		±0.02mm	±0.03mm
Maximum load		7Kg	7Kg
IP rating		IP65	IP65
Maximum Axis Motion Velocity	J1	450° /s	300° /s
	J2	380° /s	280° /s
	J3	520° /s	360° /s
	J4	550° /s	550° /s
	J5	550° /s	550° /s
	J6	1000° /s	620° /s
Axis Motion Range	J1	±170°	±170°
	J2	-135° ~+80°	-125° ~+80°
	J3	-70° ~+190°	-70° ~+190°
	J4	±190°	±190°
	J5	±120°	±120°
	J6	±360°	±360°
Allowed wrist torque	J4	16.6Nm	16.6Nm
	J5	16.6Nm	16.6Nm
	J6	9.4Nm	9.4Nm
Allowed wrist inertia	J4	0.47Kgm ²	0.47Kgm ²
	J5	0.47Kgm ²	0.47Kgm ²
	J6	0.15Kgm ²	0.15Kgm ²
Customer connections	Wiring	12 signal lines 30V 0.5A	12 signal lines 30V 0.5A
	Air	Φ4 mm x 2, 0.59 Mpa	Φ4 mm x 2, 0.59 Mpa
Operating conditions	Operating ambient temperature	0~45°C	0~45°C
	Ambient humidity	5%~95% (non-condensing)	5%~95% (non-condensing)
	Maximum Temperature Gradient	1.5°C /min	1.5°C /min
Weight		38Kg	40Kg
Matching controller		IRCB501 drive-control integrated controller	
Mounting mode		Floor mounted	
Certification		CE,cSGSUS,KCs,Kc	

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R11 Series

Robots featuring compact structure, with overall height and structural height reaching a new level in the industry, and short cycle time to adapt to a range of application scenarios.

Scope of Application

Handling and loading/unloading in 3C industry; handling in the photovoltaic industry; and assembly and dispensing.

Features

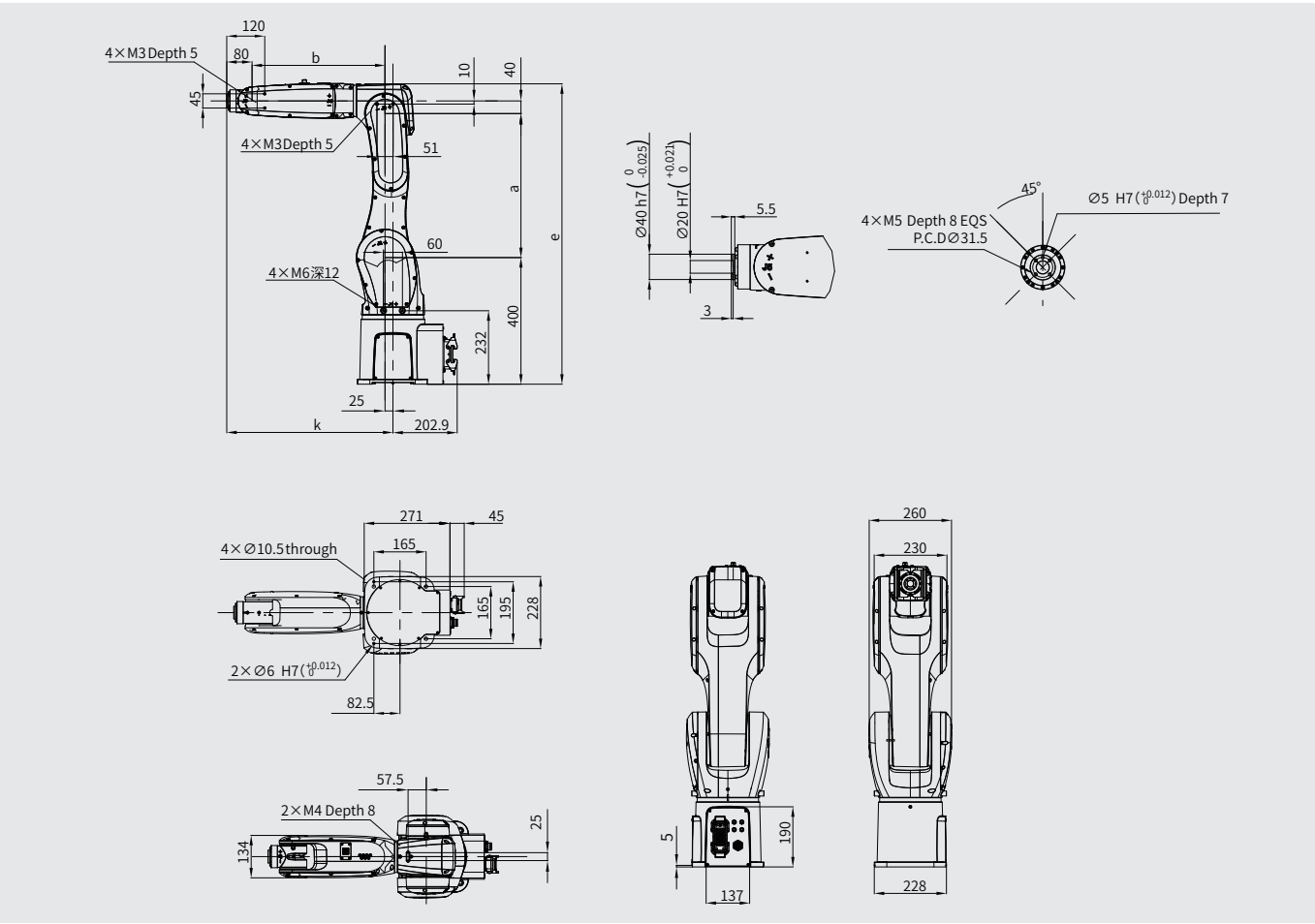
Load	10 Kg / 11 Kg
Arm length	1101.6 mm / 901.9 mm
Repeatability	±0.02 mm
IP rating	IP40 (IP67 optional)



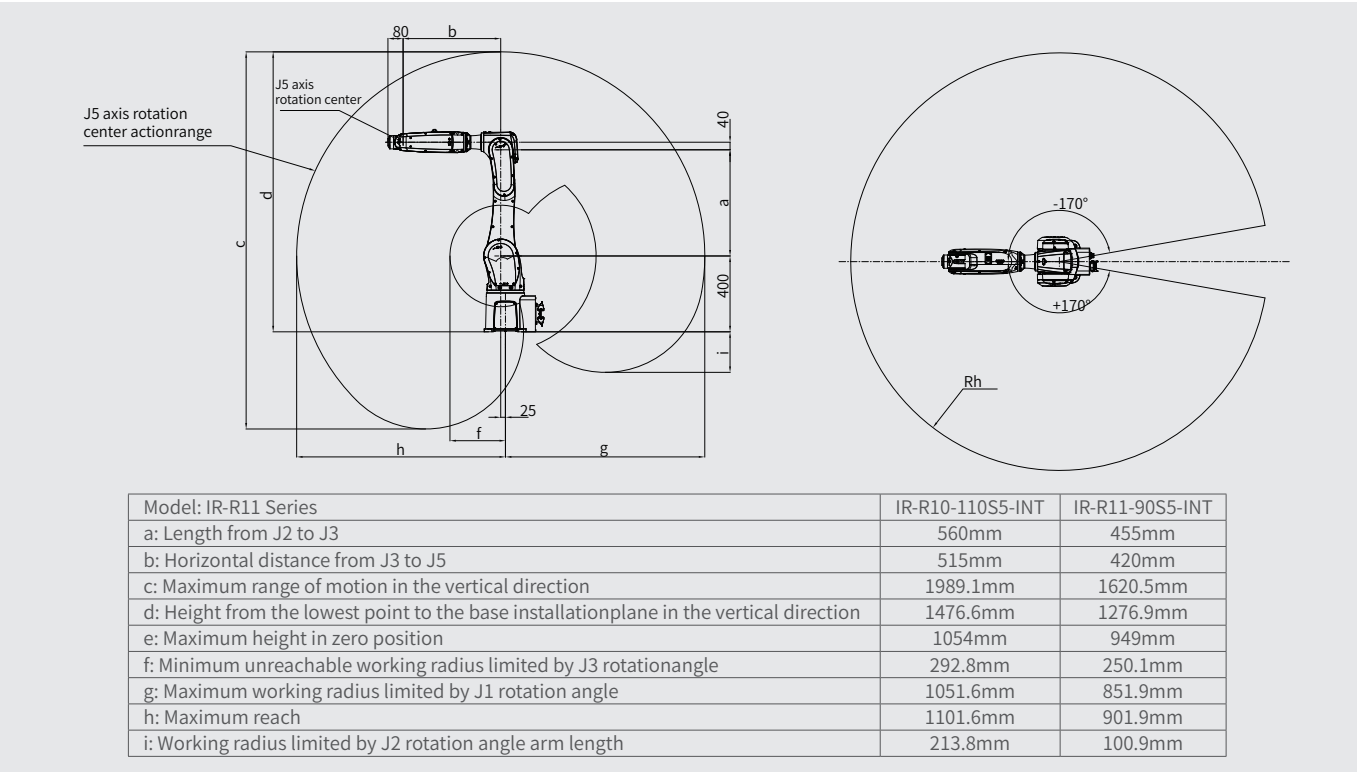
Technical Data

Model		IR-R10-110S5-INT	IR-R11-90S5-INT
Structural style		Vertical axis cascading structure	Vertical axis cascading structure
Number of Axes		6 axes	6 axes
Maximum reach		1101.6 mm	901.9 mm
Repeatability		±0.02 mm	±0.02 mm
Maximum load		10 Kg	11.3 Kg
IP rating		IP40 (IP67 optional)	IP40 (IP67 optional)
Maximum Axis Motion Velocity	J1	300° /s	300° /s
	J2	225° /s	225° /s
	J3	330° /s	330° /s
	J4	450° /s	450° /s
	J5	420° /s	420° /s
	J6	720° /s	720° /s
Axis Motion Range	J1	±170°	±170°
	J2	+100° to -135°	+100° to -135°
	J3	-66° to +210°	-66° to +210°
	J4	±190°	±190°
	J5	±125°	±125°
	J6	±360°	±360°
Allowed wrist torque	J4 Axis	18.59 Nm	20.45 Nm
	J5	18.59 Nm	20.45 Nm
	J6	9.8 Nm	10.8 Nm
Allowed wrist inertia	J4	0.6 Kg ^m ²	0.6 Kg ^m ²
	J5	0.6 Kg ^m ²	0.6 Kg ^m ²
	J6	0.2 Kg ^m ²	0.2 Kg ^m ²
Customer Connections	Wiring	12 Signal lines 30V 0.5A	12 Signal lines 30V 0.5A
	Air	Φ4mm×4,0.59 Mpa	Φ4mm×4,0.59 Mpa
Operating Conditions	Operationg Ambient Temperature	0~45° C	0~45° C
	Ambient Humidity	5%-95%(Non-condensing)	5%-95%(Non-condensing)
	Maximum Temperature Gradient	1.5° C/min	1.5° C/min
Weight		47Kg	45Kg
Matching Controller		IRCB501 Drive-control integrated controller	IRCB501 Drive-control integrated controller
Mounting Mode		Floor mounted	Floor mounted
Certification		CE,cSGS ^{us} ,KCs,Kc	

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R10 Series

Aesthetically designed robots with high motion speed and rigidity, together with dedicated motor and controller, providing customers with cost-effective solutions.

Scope of Application

Handling, machine loading/unloading, dispensing, deburring, grinding, polishing, welding, and more.

Features

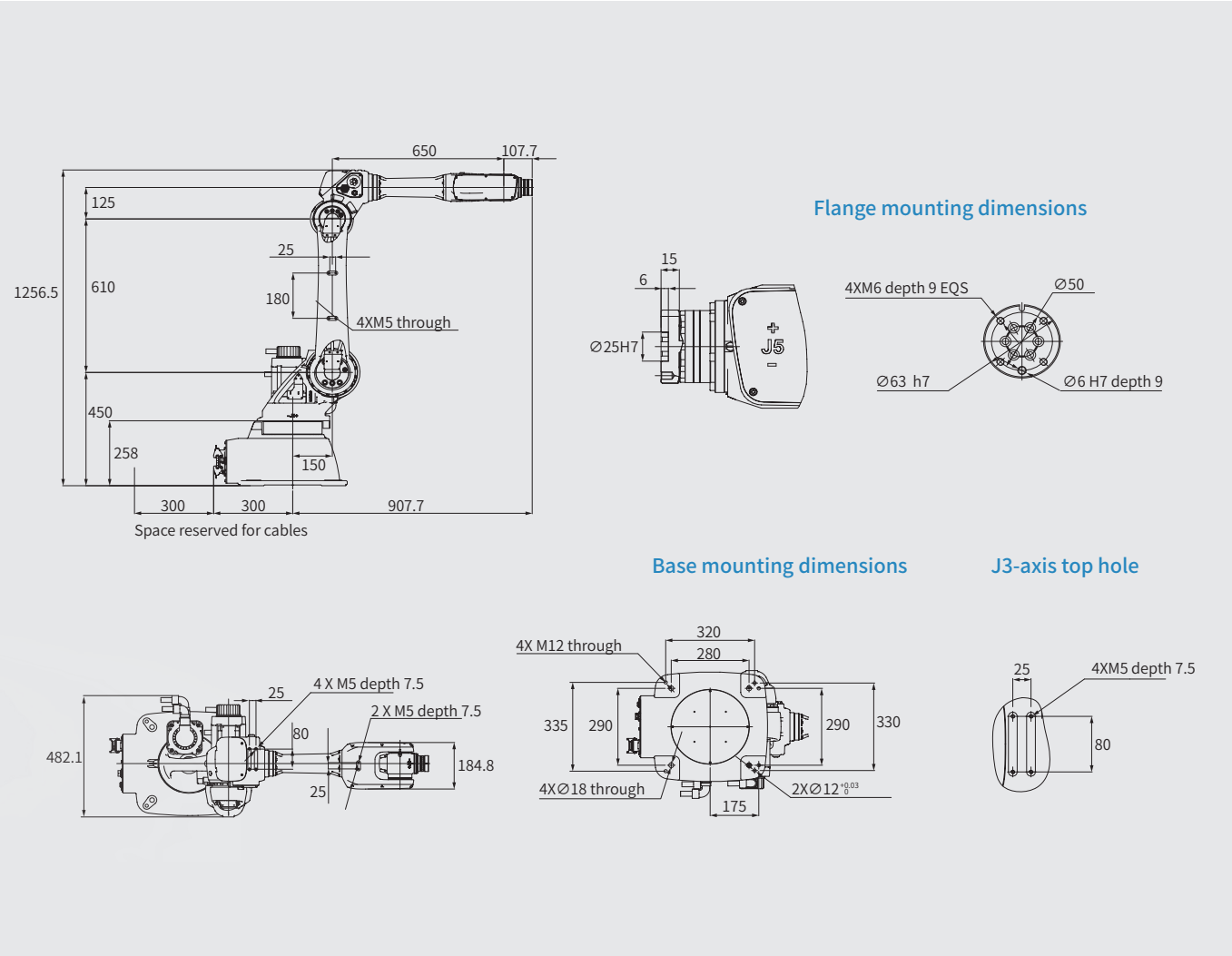
Load	10 Kg
Arm length	1422 mm
Repeatability	±0.05 mm
IP rating	IP65 (IP67 for wrist)



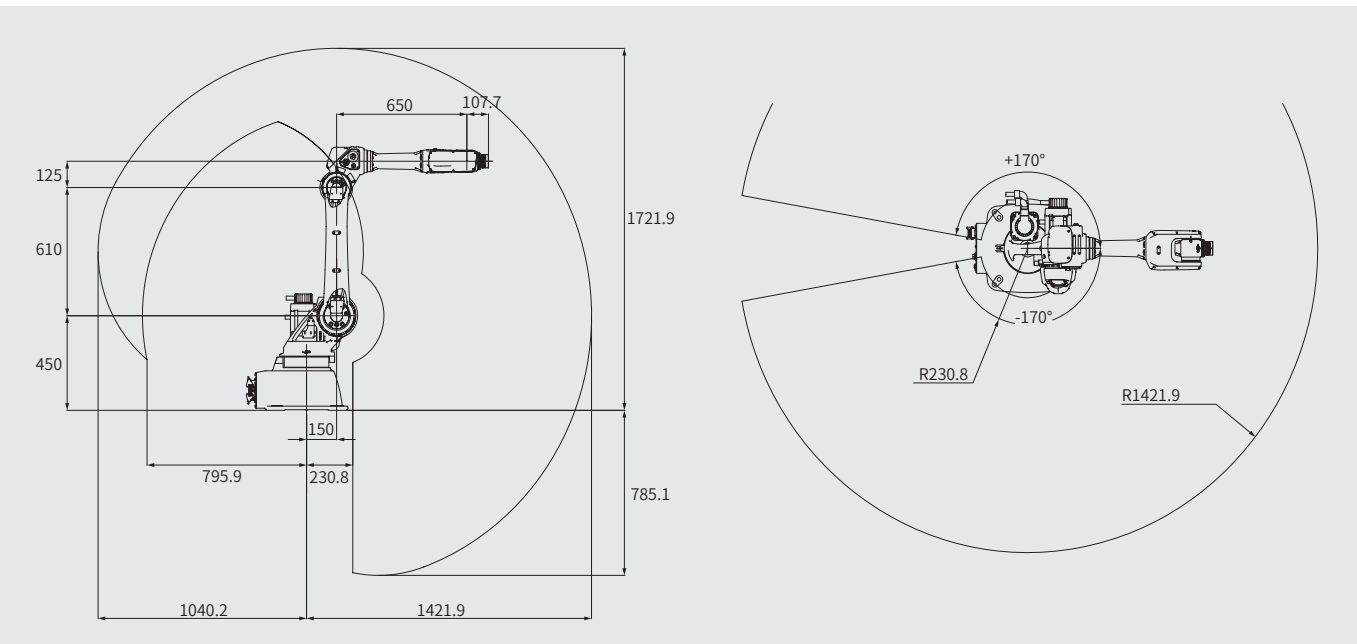
Technical Data

Model		IR-R10-140S5-INT
Structural style		Vertical axis cascading structure
Number of Axes		6 axes
Maximum reach		1422mm
Repeatability		±0.05mm
Maximum load		10Kg
IP rating		IP65 (IP67 for wrist)
Maximum Axis Motion Velocity	J1	200° /s
	J2	200° /s
	J3	200° /s
	J4	375° /s
	J5	375° /s
	J6	600° /s
Axis Motion Range	J1	±170°
	J2	-160° ~+60°
	J3	-80° ~+160°
	J4	±180°
	J5	±140°
	J6	±360°
Allowed wrist torque	J4	22Nm
	J5	22Nm
	J6	9.8Nm
Allowed wrist inertia	J4	0.63Kgm²
	J5	0.63Kgm²
	J6	0.2Kgm²
Customer connections	Wiring	18 signal lines 30V 0.5A
	Air	Φ8 mm x 1, 0.59 Mpa
Operating conditions	Operating ambient temperature	0~45°C
	Ambient humidity	10%~80% (non-condensing)
	Maximum Temperature Gradient	1.5°C /min
Weight		130Kg
Matching controller		IRCB501 high-protection drive-control integrated controller
Mounting mode		Floor mounted
Certification		CE,cSGSUS,KCs,Kc

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R20 Series

Easy-to-use and reliable robots featuring compact structure, high handling capacity and repeatability.

Scope of Application

Handling, loading/unloading, stamping, assembly, grinding, polishing, and more.

Features

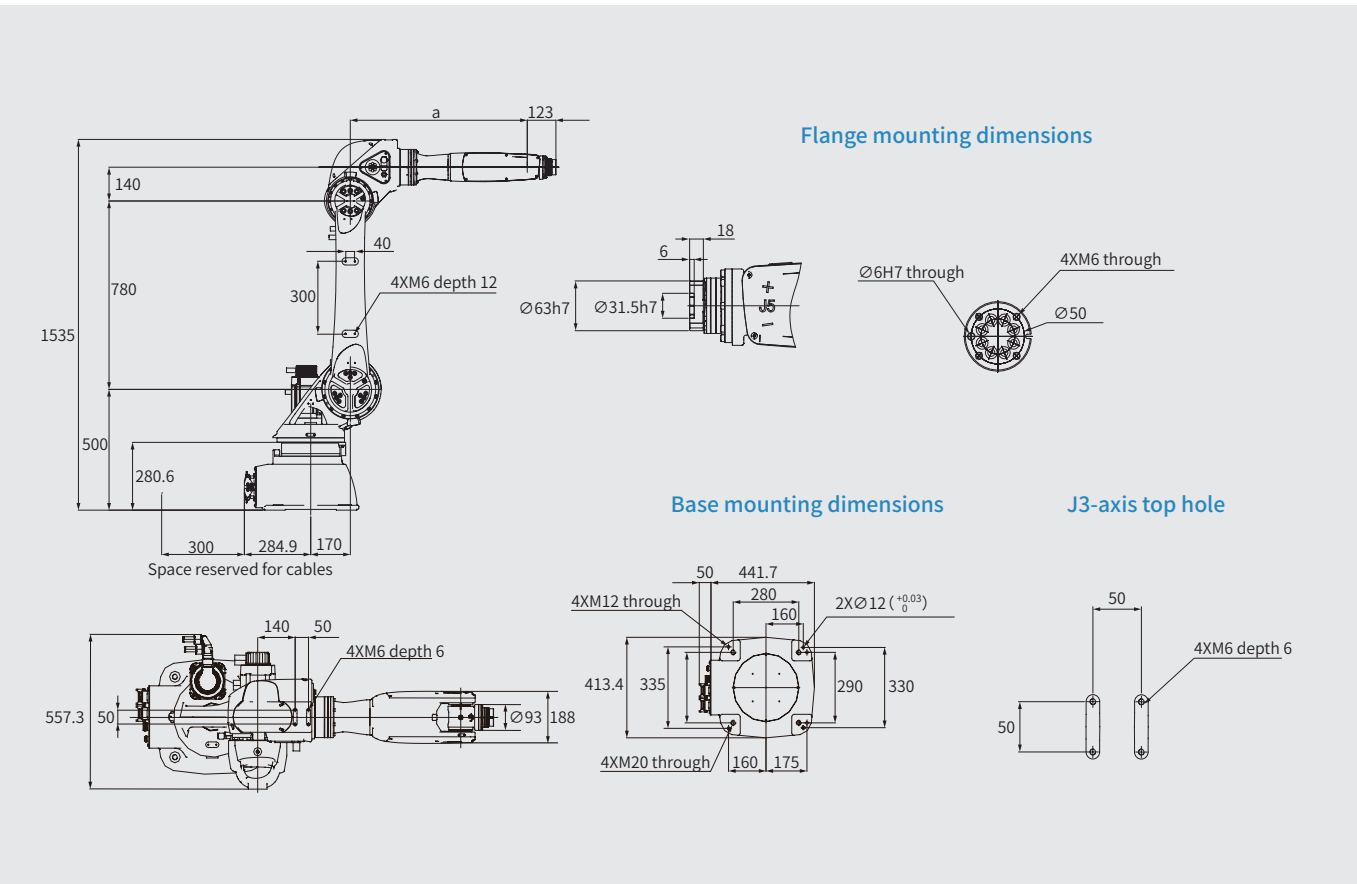
Load	20 Kg / 10 Kg
Arm length	1723 mm / 2045 mm
Repeatability	±0.05 mm
IP rating	IP65 (IP67 for wrist)



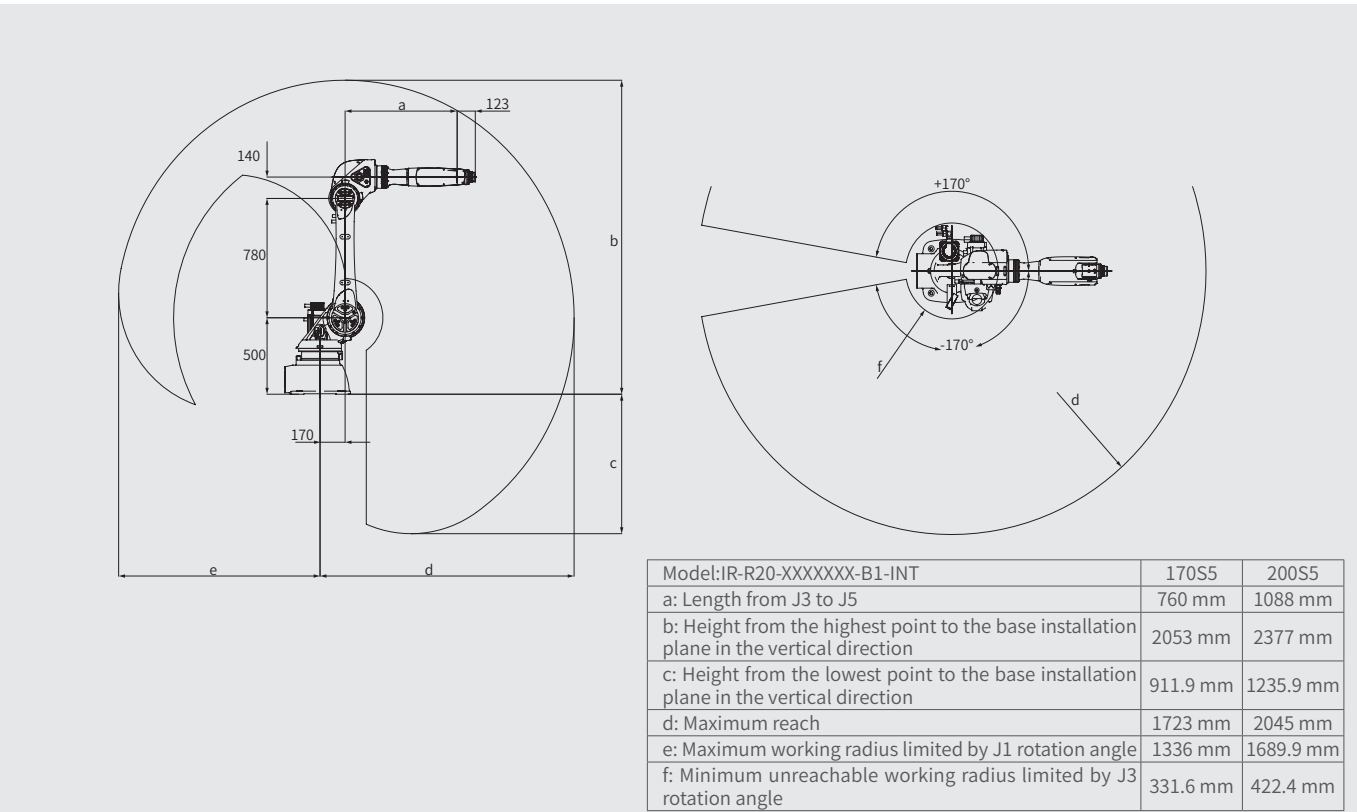
Technical Data

Model		IR-R20-170S5-INT	IR-R10-200S5-INT
Structural style		Vertical axis cascading structure	Vertical axis cascading structure
Number of Axes		6 axes	6 axes
Maximum reach		1723mm	2045mm
Repeatability		±0.05mm	±0.05mm
Maximum load		20Kg	10Kg
IP rating		IP65 (IP67 for wrist)	IP65 (IP67 for wrist)
Maximum Axis Motion Velocity	J1	190° /s	190° /s
	J2	175° /s	175° /s
	J3	200° /s	200° /s
	J4	400° /s	400° /s
	J5	360° /s	360° /s
	J6	610° /s	610° /s
Axis Motion Range	J1	±170°	±170°
	J2	-155° ~+80°	-155° ~+80°
	J3	-75° ~+160°	-75° ~+160°
	J4	±180°	±180°
	J5	±140°	±140°
	J6	±360°	±360°
Allowed wrist torque	J4	42Nm	22Nm
	J5	42Nm	22Nm
	J6	20Nm	10Nm
Allowed wrist inertia	J4	1.18Kg ^m ²	1Kg ^m ²
	J5	1.18Kg ^m ²	1Kg ^m ²
	J6	0.5Kg ^m ²	0.2Kg ^m ²
Customer connections	Wiring	18 signal lines 30V 0.5A	18 signal lines 30V 0.5A
	Air	Φ8 mm x 1, 0.59 Mpa	Φ8 mm x 1, 0.59 Mpa
Operating conditions	Operating ambient temperature	0~45°C	0~45°C
	Ambient humidity	10%~80%(non-condensing)	10%~80%(non-condensing)
	Maximum Temperature Gradient	1.5°C /min	1.5°C /min
Weight		240Kg	245Kg
Matching controller		IIRC501 high-protection drive-control integrated controller	
Mounting mode		Floor mounted	
Certification		CE,cSGSUS,KCs,Kc	

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-S4 Series

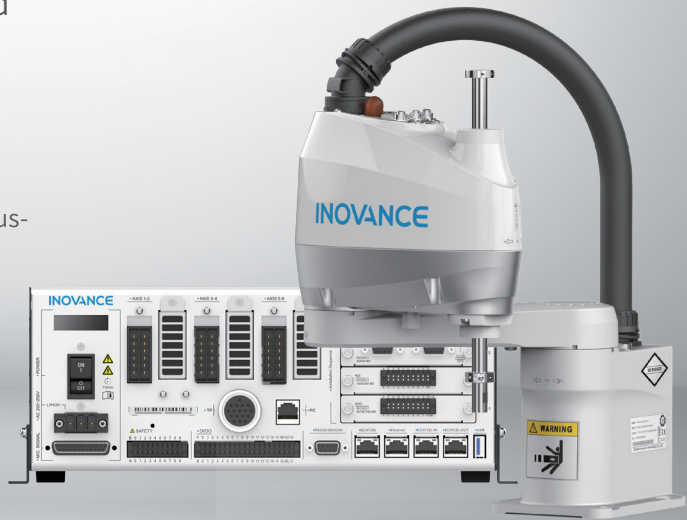
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	4 Kg
Arm length	400 mm
Efficiency	0.342s
Repeatability	±0.01 mm



Technical Data

Model		IR-S4-40Z15S3-INT
Arm length	Arm 1 + Arm 2	400 mm
	Arm 1	225 mm
	Arm 2	175 mm
Maximum speed	J1 + J2	7200 mm/s
	J3	1300 mm/s
	J4	2600° /s
Repeatability	J1 + J2	±0.01 mm
	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 Kg
	Maximum	4 Kg
Allowable inertia	Rated	0.005 Kg.m ²
moment of J4	Maximum	0.05 Kg.m ²
Mounting hole		120x120 mm (4-ø9 mm)
Weight (excluding cables)		12Kg
Press-in force of J3		100 N
Customer signal line		15 (15pin: D-sub)
		CAT5E
Customer air piping		Ø6 mm x 2, 0.59 Mpa
		Ø4 mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature ^[1]	5~40° C (no excessive temperature changes)
	Relative humidity	10~80%
Noise level ^[2]		Laeq=70 dB(A)
Maximum motion range	J1	±132°
	J2	±141°
	J3	150 mm
	J4	±360°
Cycle time ^[3]		0.342s
Certification		CE,cSGSus,KCs,Kc

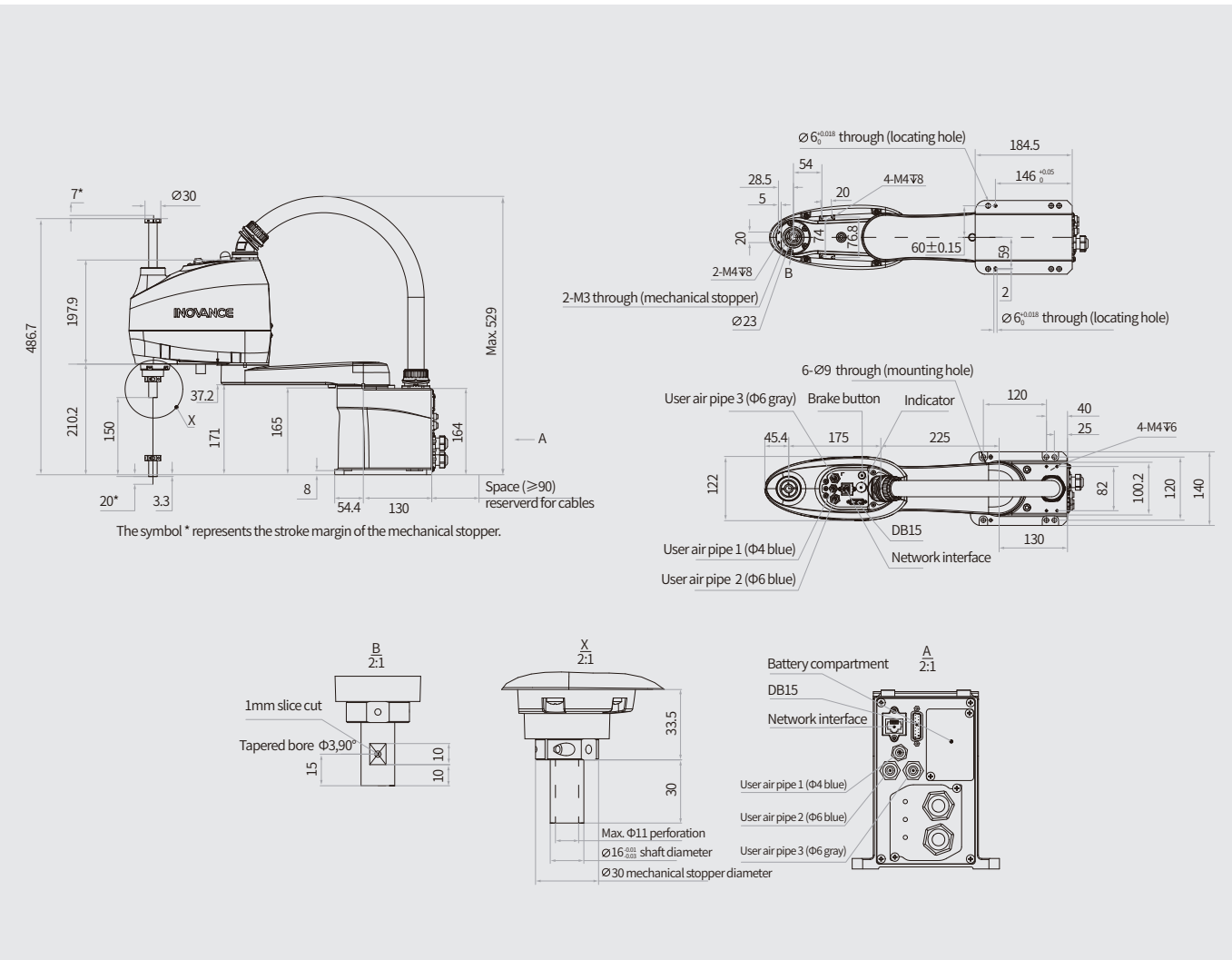
Note

[1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

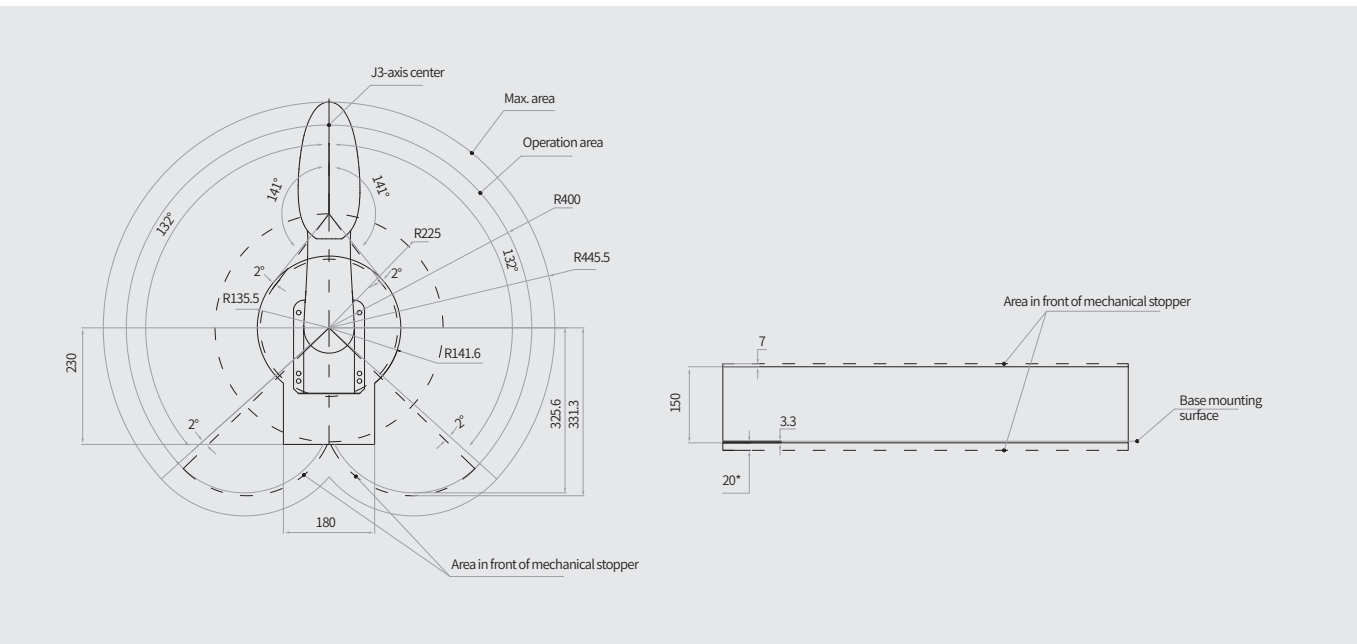
[2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3] Standard cycle time for 3Kg/4Kg SCARA: 1Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



IR-S7 Series

Scope of Application

Features

Model		IR-S7-50Z20S3-INT	IR-S7-60Z20S3-INT	IR-S7-70Z20S3-INT
Arm length	Arm 1 + Arm 2	500 mm	600 mm	700 mm
	Arm 1	225 mm	325 mm	425 mm
	Arm 2	275 mm	275 mm	275 mm
Maximum speed	J1 + J2	7120 mm/s	7850 mm/s	8590 mm/s
	J3	1600 mm/s	1600 mm/s	1600 mm/s
	J4	2000° /s	2000° /s	2000° /s
Repeatability	J1 + J2	±0.02 mm	±0.02 mm	±0.02 mm
	J3	±0.01 mm	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°	±0.01°
Handling capacity (load)	Rated	3 Kg	3 Kg	3 Kg
	Maximum	7 Kg	7 Kg	7 Kg
Allowable inertia moment of J4	Rated	0.01 Kg.m ²	0.01 Kg.m ²	0.01 Kg.m ²
	Maximum	0.12 Kg.m ²	0.12 Kg.m ²	0.12 Kg.m ²
Mounting hole		150x150 mm (4-ø9 mm)		
Weight (excluding cables)		17Kg	17.5Kg	19Kg
Press-in force of J3		150 N		
Customer signal line		15 (15pin: D-sub) CAT5E		
Customer air piping		Ø6 mm x 2, 0.59 Mpa Ø4 mm x 1, 0.59 Mpa		
Operating conditions	Ambient temperature ^[1]	5~40° C (no excessive temperature changes)		
	Relative humidity	10~80%		
Noise level ^[2]		Laeq=70 dB(A)		
Maximum motion range	J1	±132°		
	J2	±150°		
	J3	200 mm		
	J4	±360°		
Cycle time ^[3]		0.351s	0.36s	0.375s
Certification		CE,cSGSus,KCs,Kc		

[3] Time required for a 7 Kg/10 Kg SCARA robot to move a 2 Kg payload between two points 300 mm apart at a height of 25 mm.

Technical drawings of the IR-S7 series robot arm and its base. The top drawing shows the robot arm with dimensions for length, width, and height, and labels for various components like the motor, gears, and air pipes. The middle drawing shows the robot base with dimensions for width, height, and depth, and labels for the battery compartment, network interface, and air pipes. The bottom drawing shows a cross-section of the robot base with dimensions for the shaft diameter, mechanical stopper diameter, and air pipe diameter.

Top Drawing (Robot Arm):

- Dimensions: 207, 185^{+0.05}, 35.5, 6.5, 31, 8-M4 ∇ 10, 2-M4 ∇ 10, 2-M4 through (mechanical stopper), 20, 71, 143, 55 $\pm$ 0.05, 170, 140, 20, 4-M4 ∇ 6, 100, 124, 150, 170, 130.1, 52, 275, α , 150, 35, 100, 124, 150, 170.
- Labels: User air pipe 3 (Φ 6 gray), Indicator, Brake button, User air pipe 1 (Φ 4 blue), User air pipe 2 (Φ 6 blue), Network interface, DB15, 4- $\varnothing$ 9 through (locating hole), $\varnothing$ 124, $\varnothing$ 6 $\pm$ 0.018 through (locating hole), $\varnothing$ 6 $\pm$ 0.018 through (locating hole).

Middle Drawing (Robot Base):

- Dimensions: 555, 10", $\varnothing$ 40, 194, 228.5, 200, 45, 18", 224, 156.5, 172.5, 53, 167.5, 10, 67, 140, 166, max β , Space ($\geq$ 90) reserved for cables.
- Label: The symbol * represents the stroke margin of the mechanical stopper.

Bottom Drawing (Cross-section of Robot Base):

- Dimensions: 15, 3:1, 1mm slice cut, Tapered bore Φ 3, 90°, 43.5, 30, Max. Φ 14 perforation, $\varnothing$ 20 shaft diameter, $\varnothing$ 40 mechanical stopper diameter.
- Labels: Battery compartment, DB15, Network interface, User air pipe 1 (Φ 4 blue), User air pipe 2 (Φ 6 blue), User air pipe 3 (Φ 6 gray), A.

Motion range of IR-S7 series robots with different arm lengths

Model	IR-S7-50Z20S3-INT	IR-S7-60Z20S3-INT	IR-S7-70Z20S3-INT
a: Length of arm 1 + arm 2 (mm)	500	600	700
b: Length of arm 1 (mm)	225	325	425
c: Maximum motion range (mm)	552	652	752
d: Motion range of J1 (°)	132		
e: Motion range of J2 (°)	150		
f: Motion range (mm)	138.1	162.6	232
g: Rear motion range (mm)	425.6	492.5	559.4
h: Angle of mechanical stop position of J1 (°)	1		
i: Angle of mechanical stop position of J2 (°)	1	3	4
j: Range of mechanical stop position (mm)	134.2	148.3	214.8
k: Range of rear mechanical stop position (mm)	428.5	496.7	564.9
m: Motion range (mm)	240	220	220
n: Motion range (mm)	245		

Parameters of IR-S7 series robots with different arm lengths

Model	IR-S7-50Z20S3-INT	IR-S7-60Z20S3-INT	IR-S7-70Z20S3-INT
α	225	325	425
β	545	569	599

Technical drawing of a mechanical part, showing a top view and a side view.

Top View:

- Shows concentric circles and radial lines.
- Labels: *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*.
- Dimensions: *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*.
- Area in front of mechanical stopper (indicated by dashed lines).

Side View:

- Shows a rectangular cross-section.
- Labels: *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*.
- Dimensions: *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*.
- Area in front of mechanical stopper (indicated by dashed lines).
- Base mounting surface (indicated by a solid line).

SCARA Robot

IR-S10 Series

Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	10 Kg
Arm length	600 mm / 700 mm / 800 mm
Cycle time	0.361s/0.386s/0.416s
Repeatability	J1 and J2: ±0.02 mm to 0.025 mm J3: 0.01 mm; J4: ±0.01°



Technical Data

Model		IR-S10-60Z20S3-INT	IR-S10-70Z20S3-INT	IR-S10-80Z20S3-INT
Arm length	Arm 1 + Arm 2	600 mm	700 mm	800 mm
	Arm 1	225 mm	325 mm	425 mm
	Arm 2	375 mm	375 mm	375 mm
Maximum speed	J1 + J2	9100 mm/s	9800 mm/s	10500 mm/s
	J3	1600 mm/s	1600 mm/s	1600 mm/s
	J4	2700°/s	2700°/s	2700°/s
	J1 + J2	±0.02 mm	±0.02 mm	±0.025 mm
Repeatability	J3	±0.01 mm	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°	±0.01°
Handling capacity (load)	Rated	5 Kg	5 Kg	5 Kg
	Maximum	10 Kg	10 Kg	10 Kg
Allowable inertia moment of J4	Rated	0.02 Kg.m²	0.02 Kg.m²	0.02 Kg.m²
	Maximum	0.3 Kg.m²	0.3 Kg.m²	0.3 Kg.m²
Mounting hole		150x150 mm (4-ø9 mm)		
Weight (excluding cables)		18.5 Kg	19 Kg	20.5 Kg
Press-in force of J3		200 N	200 N	200 N
Customer signal line		15 (15pin: D-sub) CAT5E		
Customer air piping		ø6 mm x 2, 0.59 Mpa ø4 mm x 1, 0.59 Mpa		
Operating conditions	Ambient temperature ^[1]	5~40° C (no excessive temperature changes)		
	Relative humidity	10~80%		
Noise level ^[2]		Laeq=70 dB(A)		
Maximum motion range	J1	±132°		
	J2	±150°		
	J3	200 mm		
	J4	±360°		
Cycle time ^[3]		0.361s	0.386s	0.416s
Certification		CE,cSGSUS,KCs,Kc		

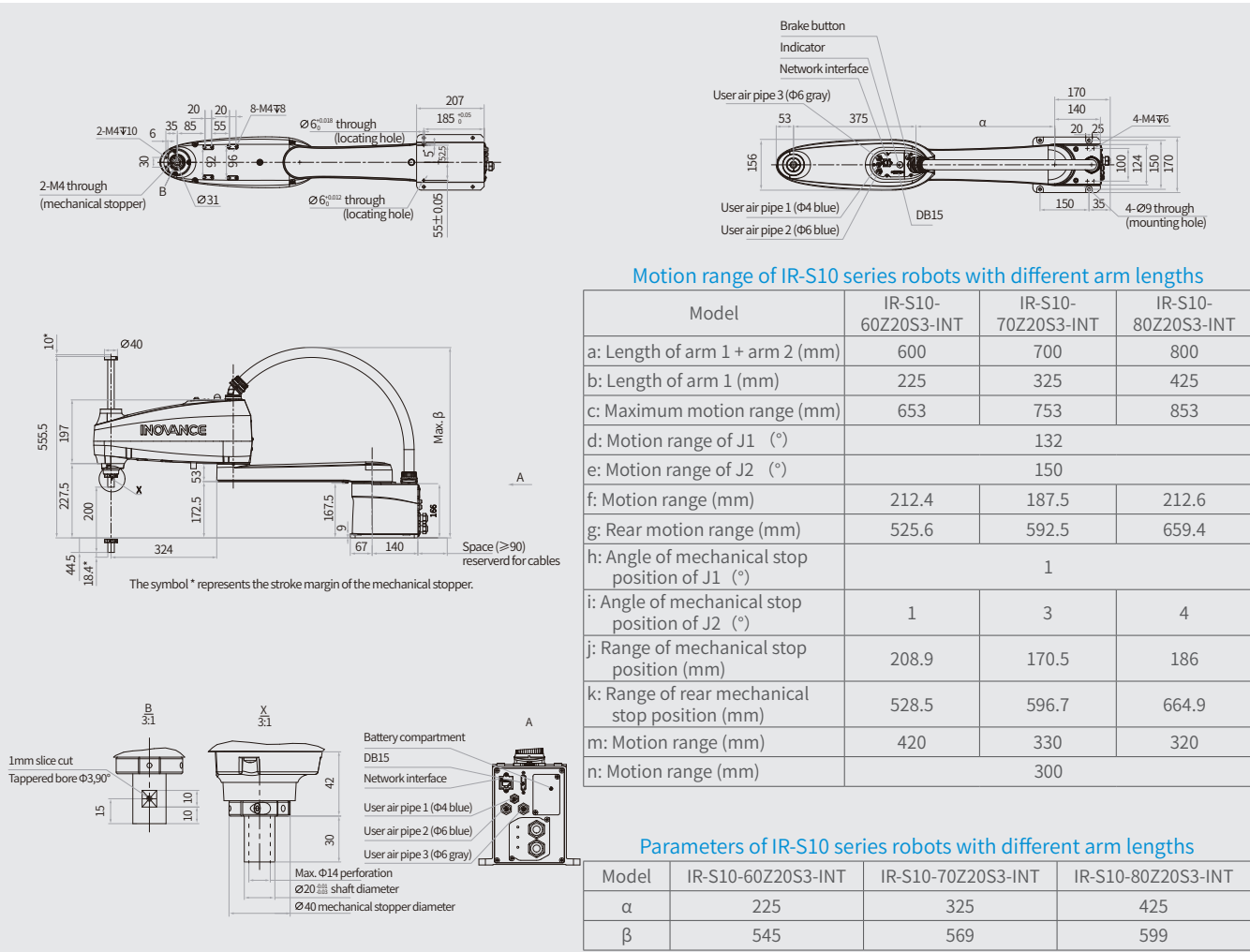
Note

【1】When used in a low-temperature environment approximating the lowest allowable temperature, or when idle for a longperiod of time due to holi-days and nighttime, it is recommended to warm up the product for 10 minhutes before operating it.

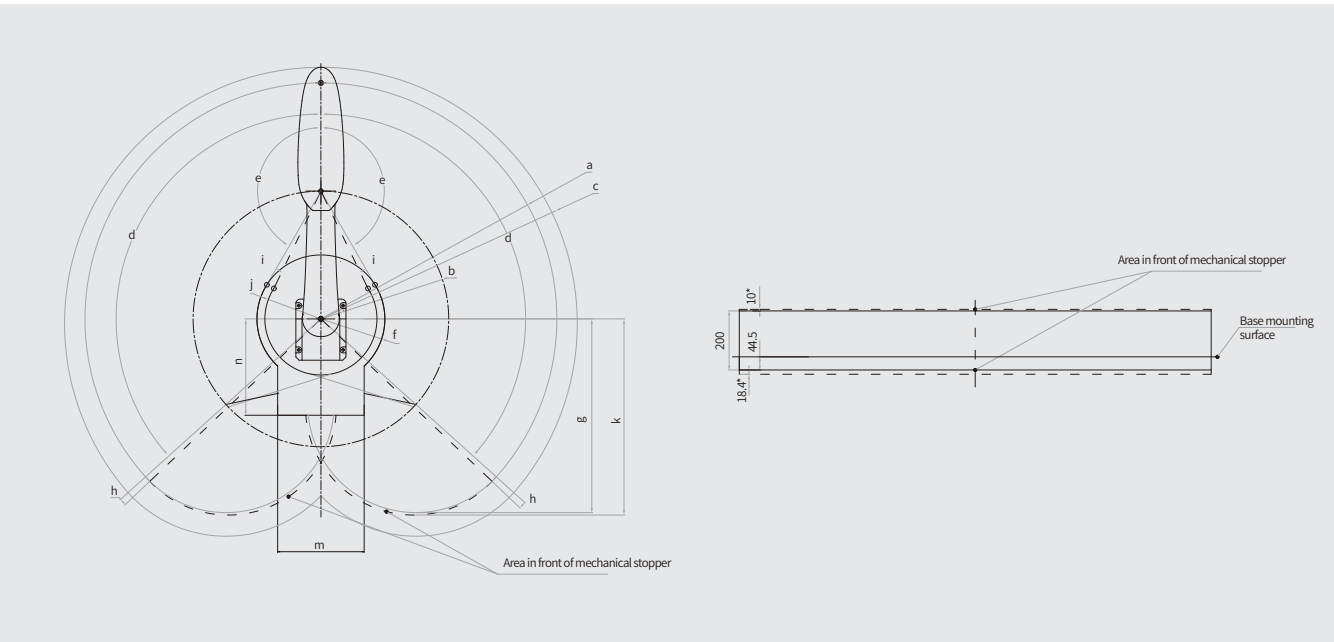
【2】 Measured in front of the robot at a distance of 1000 mm from its operating area and at least 50 mm above the base mounting surface with four joints operating at 100% speed and acceleration, with a duty cycle of 50%.

【3】 Time required for a 7 Kg/10 Kg SCARA robot to move a 2 Kg payload between two points 300 mm apart at a height of 25 mm.

Mounting Dimensions(mm)



Motion Range(mm)



IR-S20 Series

SCARA robots with harmonic drive for the fourth joint, featuring high inertia, high rigidity and high repeatability.

Applications in lithium battery industry.

Load	20 Kg
Arm length	800 mm / 1000 mm
Cycle time	0.36s/0.38s
Repeatability	J1,J2:±0.025mm, J3:±0.01mm,J4:±0.01°



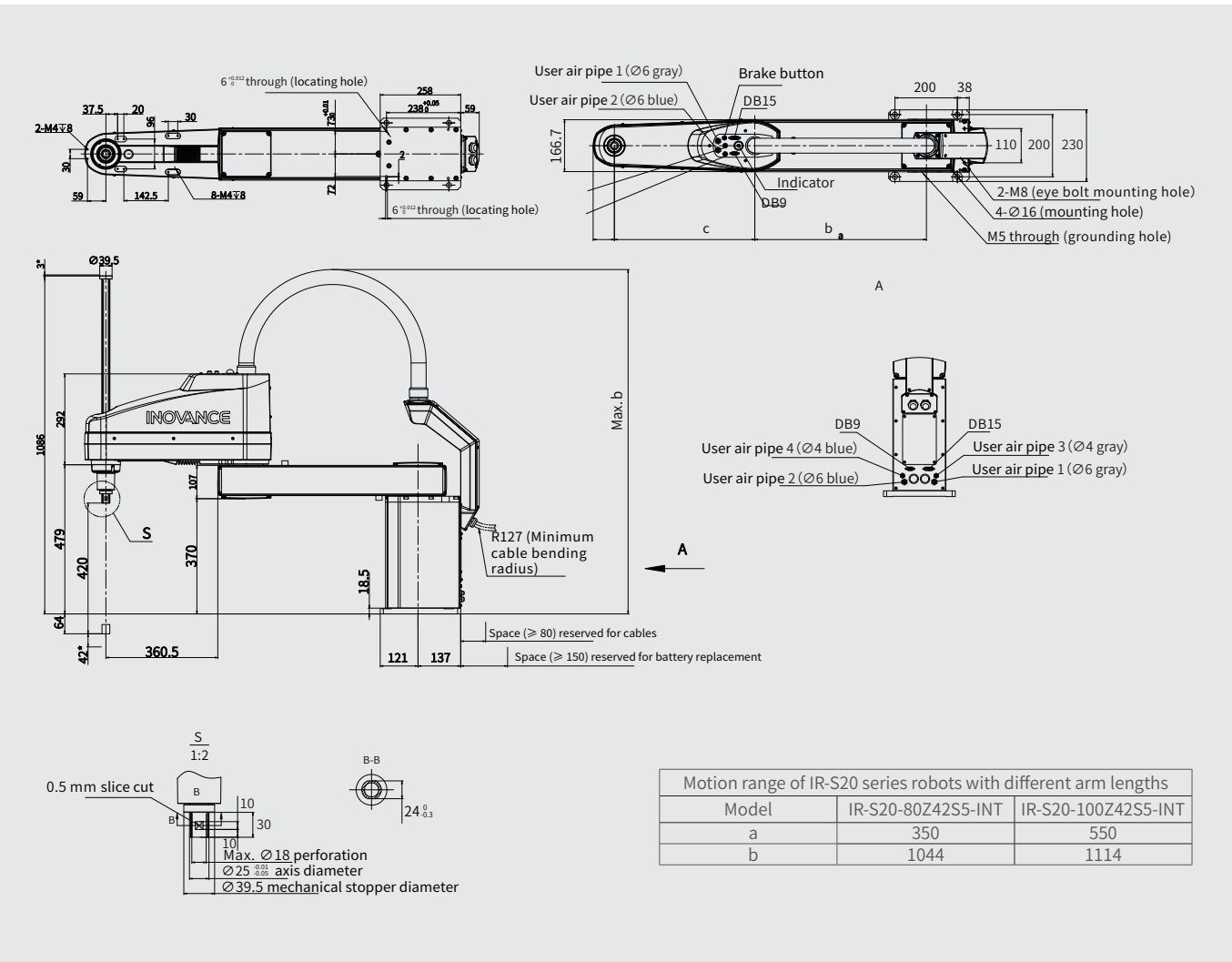
Model		IR-S20-80Z42S5-INT	IR-S20-100Z42S5-INT
Arm length	Arm 1 + Arm 2	800mm	1000mm
	Arm 1	350mm	550mm
	Arm 2	450mm	450mm
Maximum speed	J1 + J2	9550mm/s	10800mm/s
	J3	1010mm/s	1010mm/s
	J4	705° /s	705° /s
Repeatability	J1 + J2	±0.025mm	±0.025mm
	J3	±0.01mm	±0.01mm
	J4	±0.01°	±0.01°
Handling capacity(load)	Rated	10Kg	10Kg
	Maximum	20Kg	20Kg
Allowable inertia moment of J4	Rated	0.5Kg.m ²	0.5Kg.m ²
	Maximum	1.0Kg.m ²	1.0Kg.m ²
Mounting hole		200mmx200mm(4-ø16mm)	
Weight (excluding cables)		53Kg	56Kg
Press-in force of J3		250N	250N
Customer signal line		9(9 pin: D-sub),15(15 pin: D-sub)	
Customer air piping		Φ6 mm x 2, 0.59 Mpa (6 Kgf/cm2:86 psi)	
		Φ4 mm x 2, 0.59 Mpa (6 Kgf/cm2:86 psi)	
Operating condition	Ambient temperature ^[1]	5~40° C(no excessive temperature changes)	
	Relative humidity	10~80%	
Noise level ^[2]		Laeq=75dB(A)	
Maximum motion range	J1	±132°	
	J2	±152°	
	J3	420mm	
	J4	±360°	
Cycle time ^[3]		0.36s	0.38s
Certification		CE,cSGSUs,KCs,Kc	

1) If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

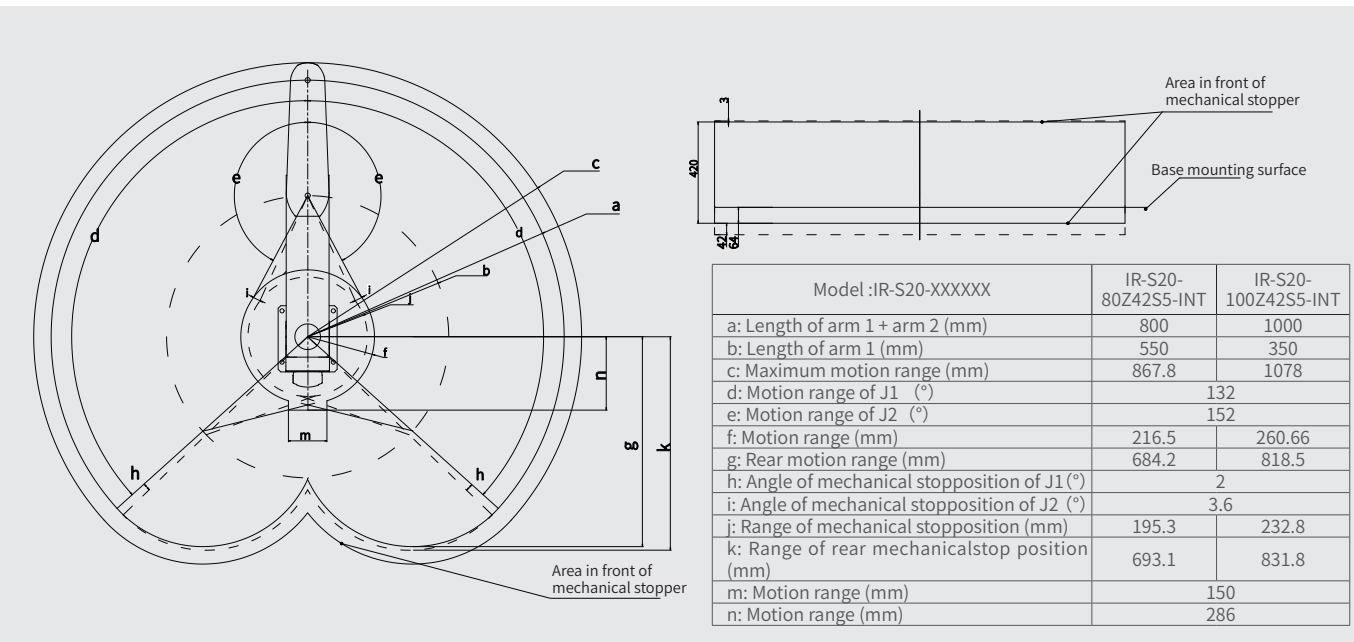
2) Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

3) Standard cycle time for 20Kg SCARA : 2Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 5 mm vertically)

Mounting Dimensions_(mm)



Motion Range_(mm)



IR-GS20 Series

SCARA robots with harmonic drive for the fourth joint, together with an plain shaft to increase the rigidity in the overturning direction, featuring high inertia, high rigidity and high repeatability.

Applications in lithium battery industry.



Model		IR-GS20-80Z42S5-INT	IR-GS20-100Z42S5-INT
Arm length	Arm 1 + Arm 2	800mm	1000mm
	Arm 1	350mm	550mm
	Arm 2	450mm	450mm
Maximum speed	J1 + J2	9550mm/s	10800mm/s
	J3	1010mm/s	1010mm/s
	J4	705° /s	705° /s
Repeatability	J1 + J2	±0.025mm	±0.025mm
	J3	±0.01mm	±0.01mm
	J4	±0.01°	±0.01°
Handling capacity(load)	Rated	10Kg	10Kg
	Maximum	20Kg	20Kg
Allowable inertia moment of J4	Rated	0.5Kg.m ²	0.5Kg.m ²
	Maximum	1.0Kg.m ²	1.0Kg.m ²
Mounting hole		200mmx200mm(4-ø16mm)	
Weight (excluding cables)		54Kg	57Kg
Press-in force of J3		250N	250N
Customer signal line		9 (9 pin: D-sub) 、15 (15 pin: D-sub)	
Customer air piping		Φ6 mm x 2, 0.59 Mpa	
		Φ4 mm x 2, 0.59 Mpa	
Operating condition	Ambient temperature ^[1]	5~40° C (no excessive temperature changes)	
	Relative humidity	10~80%	
Noise level ^[2]		Laeq=75dB(A) ^[2]	
Maximum motion range	J1	±132°	
	J2	±152°	
	J3	420mm	
	J4	±360°	
Cycle time ^[3]		0.36s	0.38s
Certification		CE,cSGSsus,KCs,Kc	

1) If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

2) Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

3) Standard cycle time for 20Kg SCARA : 2Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 5 mm vertically)

[illegible]

Area in front of mechanical stopper

Base mounting surface

Model: IR-GS20-XXXXXX	IR-GS20-80Z42S5-INT	IR-GS20-100Z42S5-INT
a: Length of arm 1 + arm 2 (mm)	800	1000
b: Length of arm 1 (mm)	550	350
c: Maximum motion range (mm)	867.8	1078
d: Motion range of J1 (°)	132	
e: Motion range of J2 (°)	152	
f: Motion range (mm)	216.5	260.66
g: Rear motion range (mm)	684.2	818.5
h: Angle of mechanical stop position of J1 (°)	2	
i: Angle of mechanical stop position of J2 (°)	3.6	
j: Range of mechanical stop position (mm)	195.3	232.8
k: Range of rear mechanical stop position (mm)	693.1	831.8
m: Motion range (mm)	150	
n: Motion range (mm)	286	

SCARA Robot

IR-S50 Series

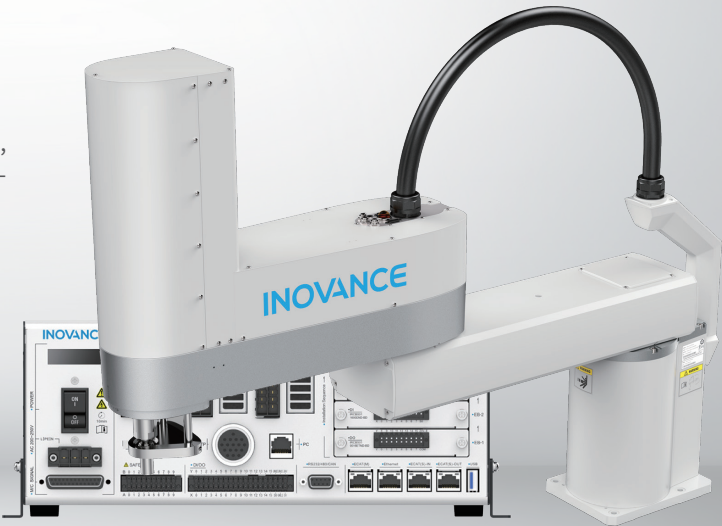
SCARA robots suitable for large load applications, featuring large load capacity, high repeatability, high rigidity and smooth motion.

Scope of Application

Material loading and unloading, precision assembly, handling, dispensing, coating, screw tightening, labeling, material insertion, sorting in new energy, 3C and food packaging industries.

Features

Load	50 Kg
Arm length	1200 mm
Cycle time	0.84s
Repeatability	J1,J2:±0.05mm, J3:±0.02mm,J4:±0.005°



Technical Data

Model		IR-S50-120Z40S5-INT
Arm length	Arm 1 + Arm 2	1200mm
	Arm 1	600mm
	Arm 2	600mm
Maximum speed	J1 + J2	7400mm/s
	J3	750mm/s
	J4	600° /s
Repeatability	J1 + J2	±0.05mm
	J3	±0.02mm
	J4	±0.005°
Handling capacity (load)		50Kg
Allowable inertia moment of J4		2.45Kg.m ²
Mounting hole		200mmx200mm(4-ø14mm)
Weight (excluding cables)		124Kg
Customer signal line		9(9 pin: D-sub),15(15 pin: D-sub)
Customer air piping		Φ6 mm x 3, 0.59 Mpa
Operating condition	Ambient temperature ^[1]	5~40° C(no excessive temperature changes)
	Relative humidity	10~80%
Noise level ^[2]		Laeq=75dB(A)
Maximum motion range	J1	±128°
	J2	±150°
	J3	400mm
	J4	±360°
Cycle time ^[3]		0.84s
Certification		CE,cSGSUS,KCs,Kc

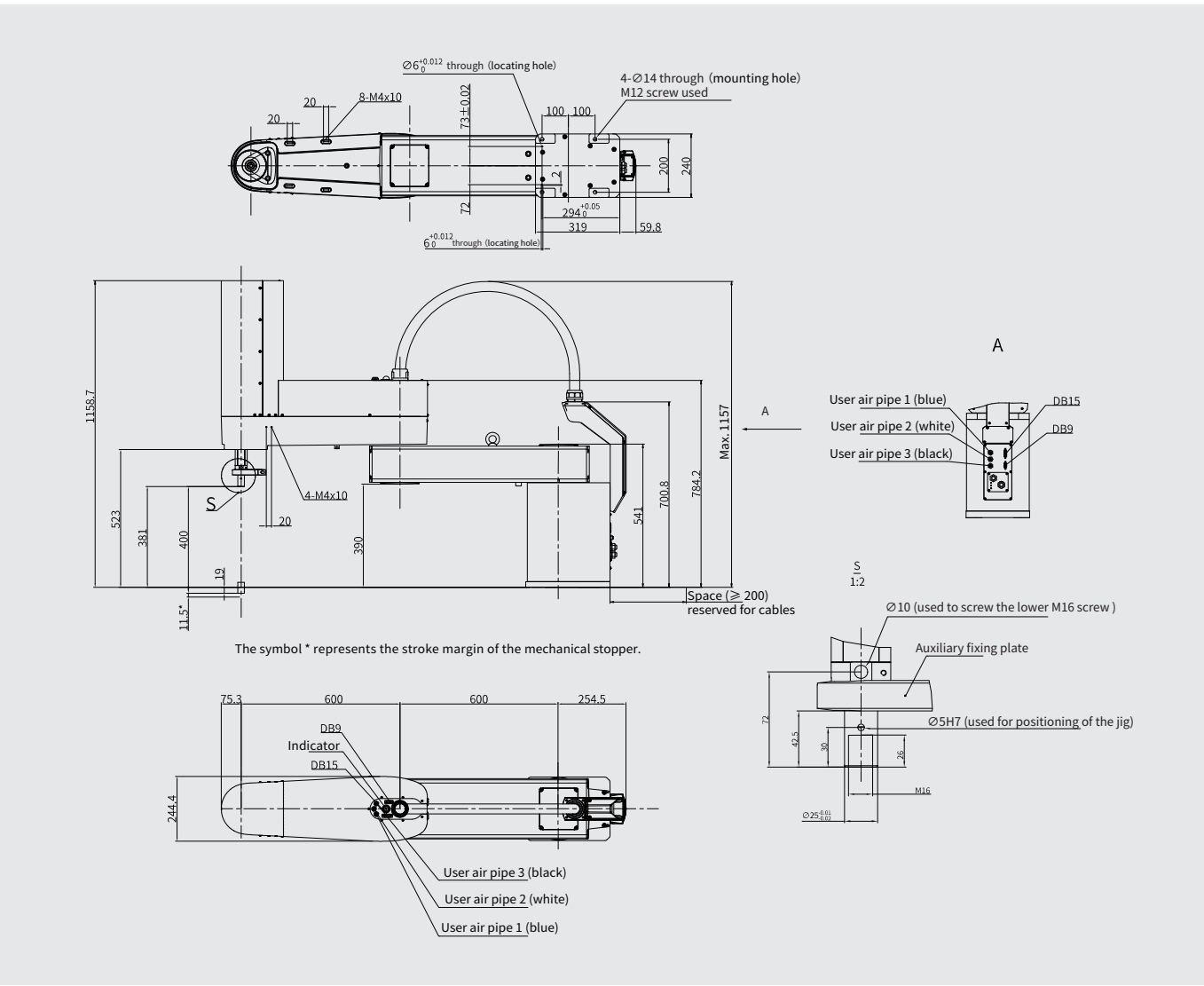
Note

[1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

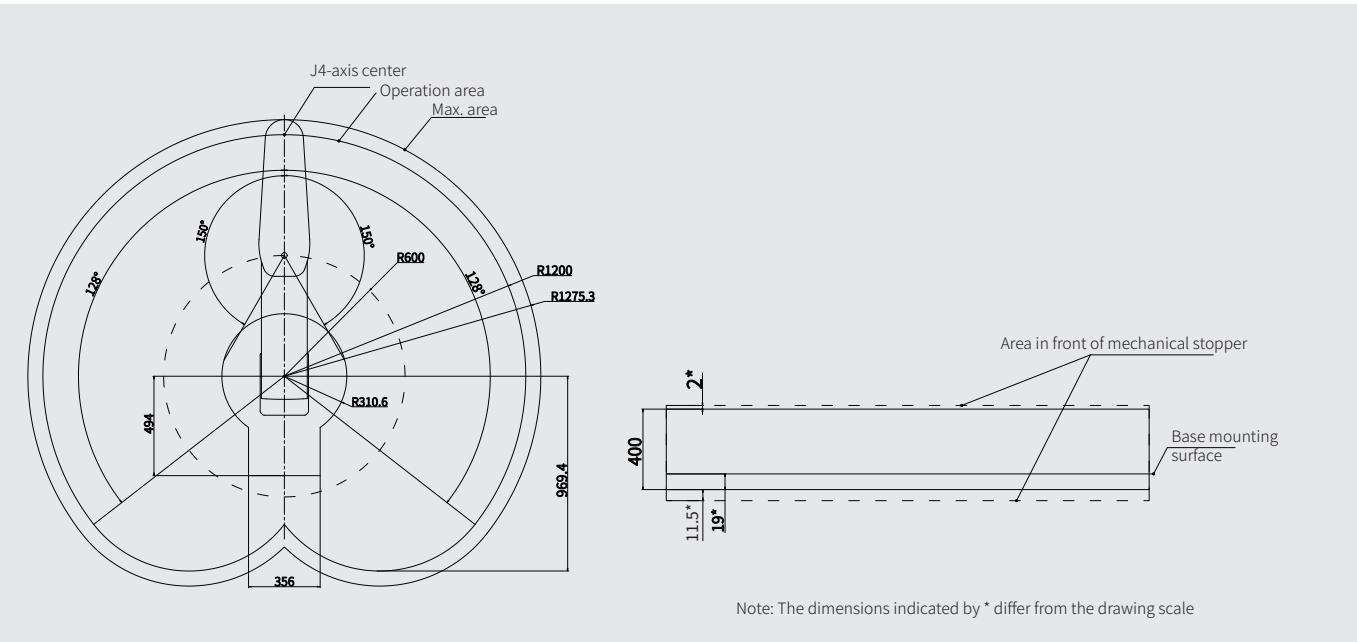
[2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3] Standard cycle time for 50Kg SCARA : 5Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-TS4 Series

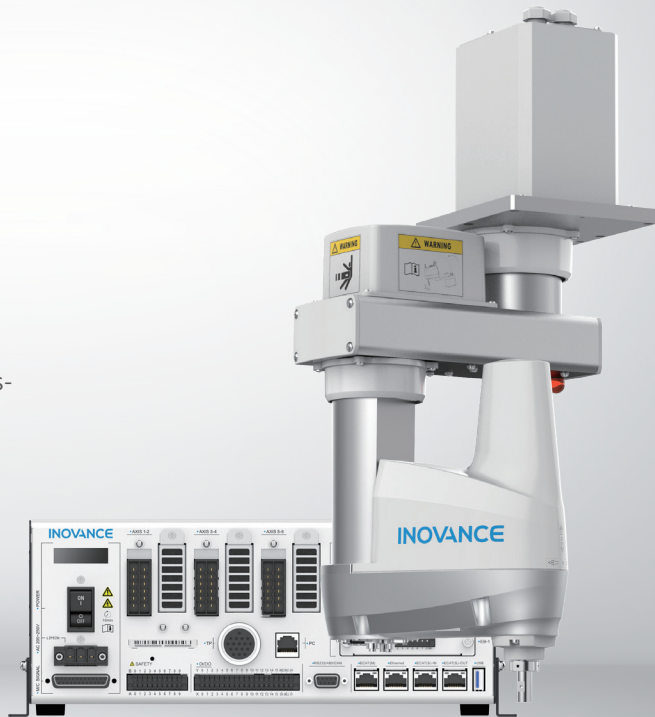
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	4 Kg
Arm length	350 mm
Cycle time	0.304s
Repeatability	J1-J3: ±0.01 mm; J4: ±0.01°



Technical Data

Model		IR-TS4-35Z15S3-INT
Arm length	Arm 1 + Arm 2	350 mm
	Arm 1	175 mm
	Arm 2	175 mm
Maximum speed	J1 + J2	6180 mm/s
	J3	1300 mm/s
	J4	2600°/s
Repeatability	J1 + J2	±0.01 mm
	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 Kg
	Maximum	4 Kg
Allowable inertia moment of J4	Rated	0.005 Kg.m ²
	Maximum	0.05 Kg.m ²
Mounting hole		95x95x160 mm (6-Ø6.6 mm)
Weight (excluding cables)		18.5 Kg
Press-in force of J3		100 N
Customer signal line		15 (15pin: D-sub) CAT5E
Customer air piping		Ø6 mm x 2, 0.59 Mpa Ø4 mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature ^[1]	5° C to 40° C (no excessive temperature changes)
	Relative humidity	10 to 80%
Noise level ^[2]		Laeq=70 dB(A)
Maximum motion range	J1	±225°
	J2	±225°
	J3	150 mm
	J4	±720°
Cycle time ^[3]		0.304s
Certification		CE,cSGSUS,KCs,Kc

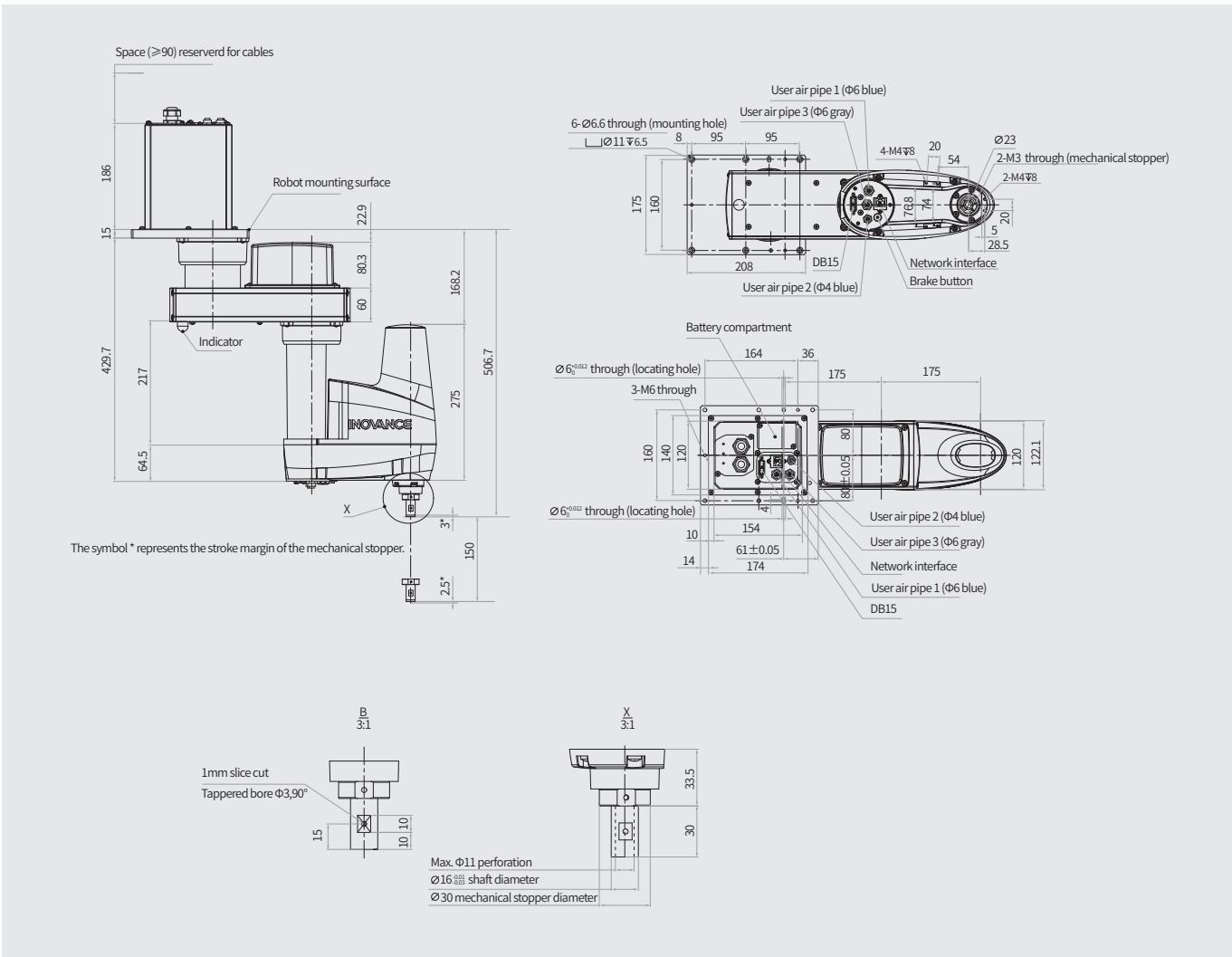
Note

[1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

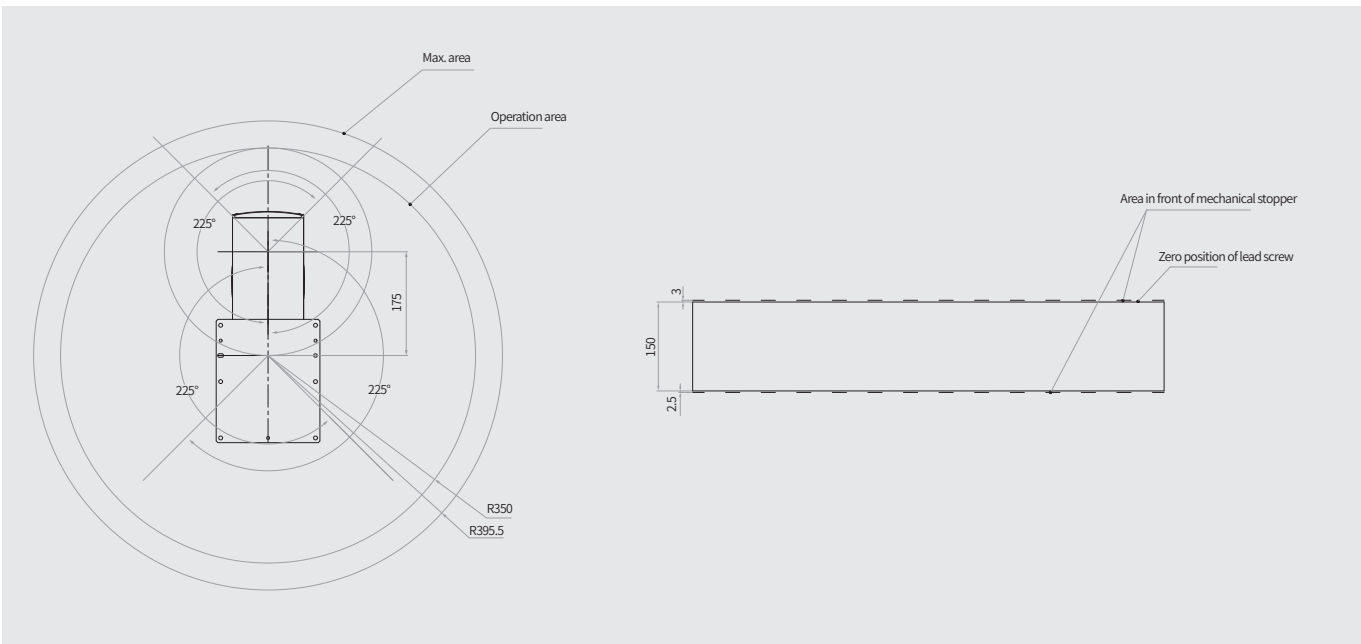
[2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3] Standard cycle time for 4Kg Inverted SCARA : 1Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



R-TS5 Series

Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Load	5 Kg
Arm length	550 mm
Cycle time	0.351s
Repeatability	J1 and J2: ± 0.015 mm; J3: 0.01 mm; J4: ± 0.01 mm



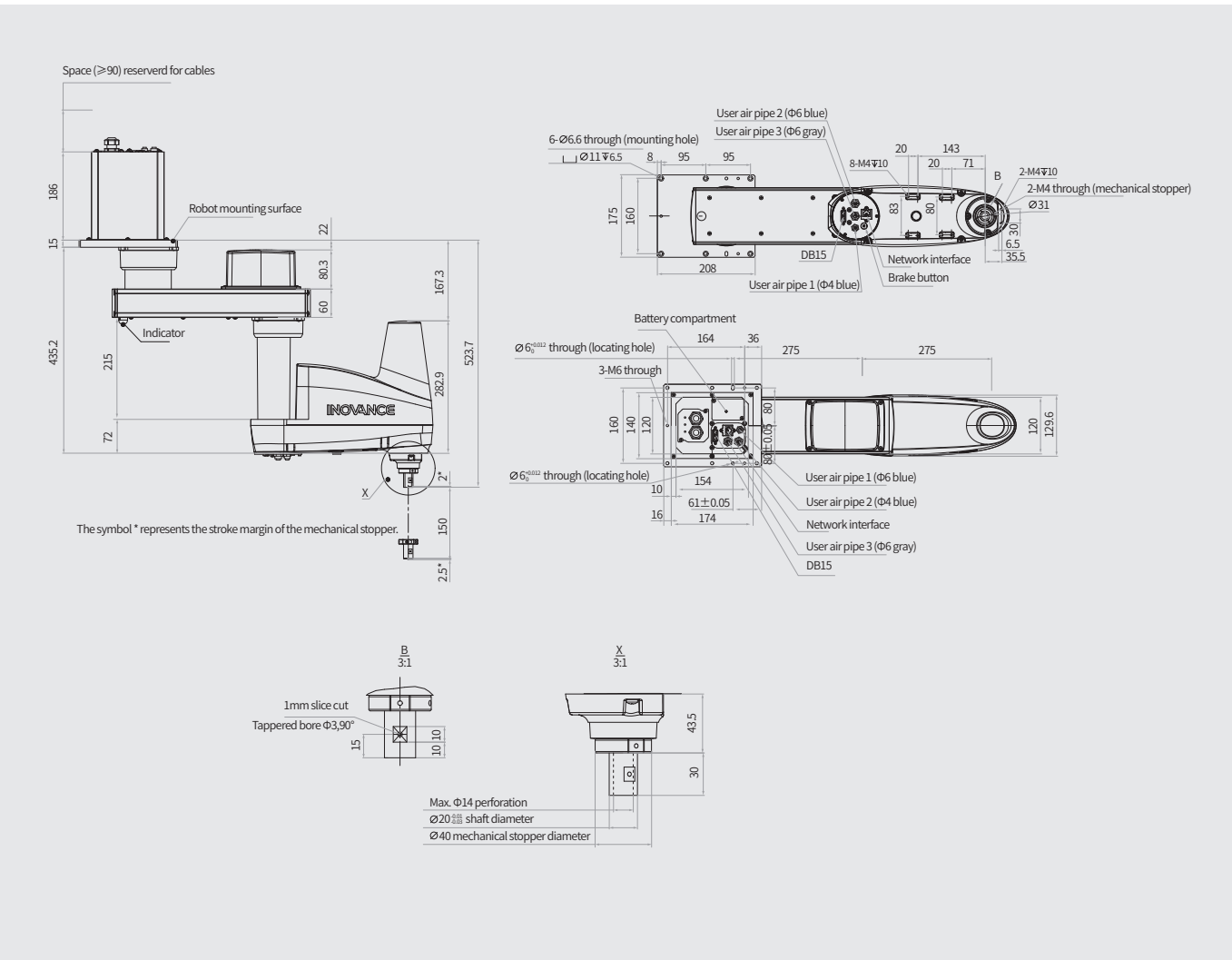
Model		IR-TS5-55Z15S3-INT
Arm length	Arm 1 + Arm 2	550 mm
	Arm 1	275 mm
	Arm 2	275 mm
Maximum speed	J1 + J2	9712 mm/s
	J3	1300 mm/s
	J4	2000° /s
Repeatability	J1 + J2	±0.015 mm
	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 Kg
	Maximum	5 Kg
Allowable inertia moment of J4	Rated	0.01 Kg.m ²
	Maximum	0.12 Kg.m ²
Mounting hole		95x95x160 mm (6-ø6.6 mm)
Weight (excluding cables)		20 Kg
Press-in force of J3		150N
Customer signal line		15 (15pin: D-sub) CAT5E
Customer air piping		Ø6 mm x 2, 0.59 Mpa Ø4 mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature ^[1]	5° C to 40° C (no excessive temperature changes)
	Relative humidity	10% to 80%
Noise level ^[2]		L _{aeq} =70 dB(A)
Maximum motion range	J1	±225°
	J2	±225°
	J3	150 mm
	J4	±720°
Cycle time ^[3]		0.351s
Certification		CE,cSGSUs,KCs,Kc

1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

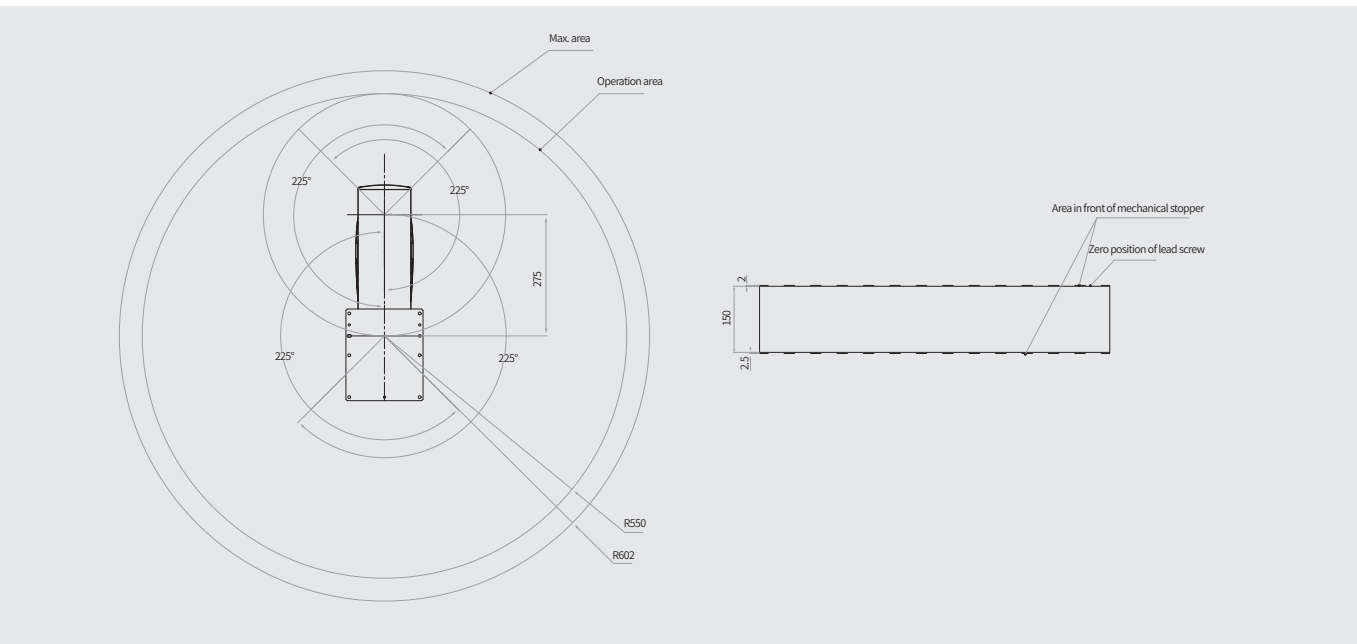
2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

3] Standard cycle time for 5Kg Inverted SCARA : 1Kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



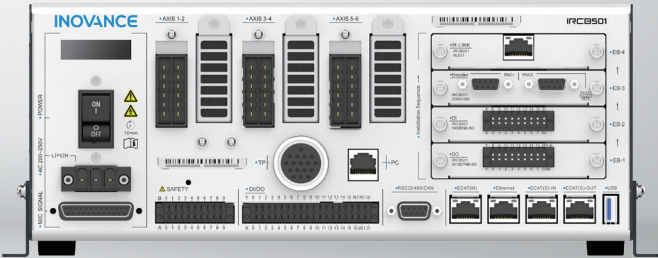
Robot Controller

IRCB501 Series

Robot controllers featuring delicate structure, abundant functions, easy installation, and easy extension to meet the market demands for compact structure, flexible production and productivity boost in 3C industry.

Applicable Robots

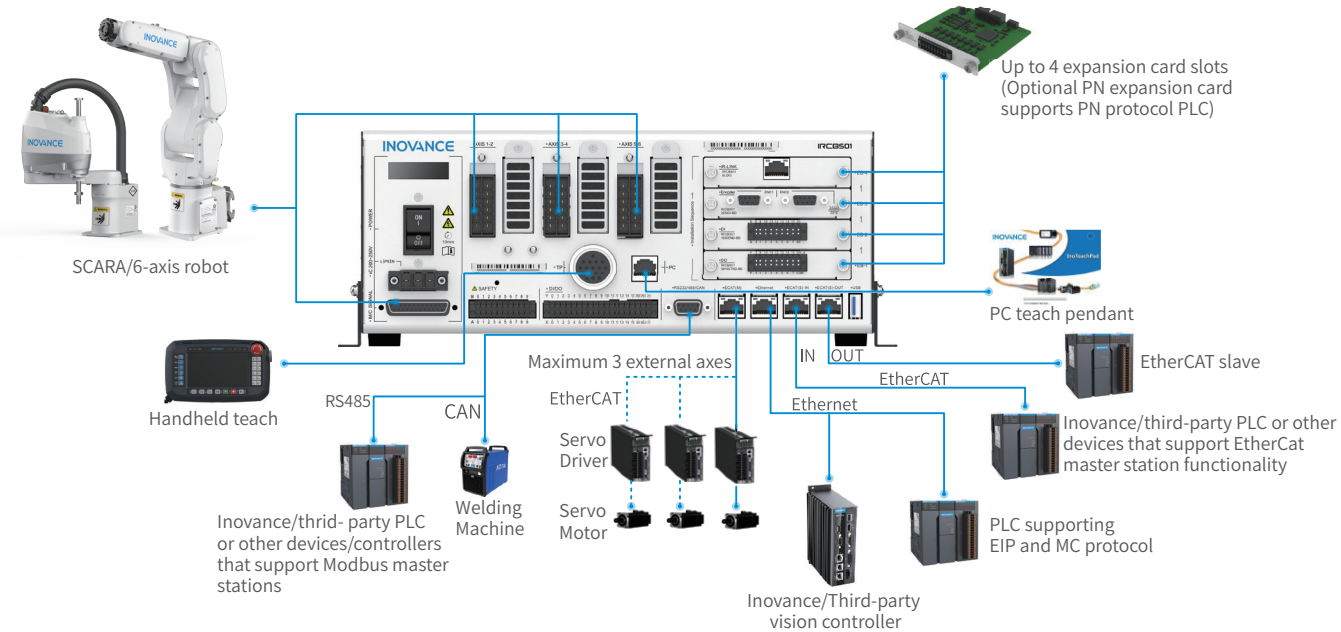
SCARA Robot	IR-S4/7/10 Series	●
	IR-TS4/5 Series	●
	IR-S20 Series	●
	IR-GS20 Series	●
6-Axis Robot	IR-S50 Series	●
	IRS311-7 Series	●
	IR-R4/11 Series	●
	IR-R10 Series	×
	IR-R20 Series	×



Technical Data

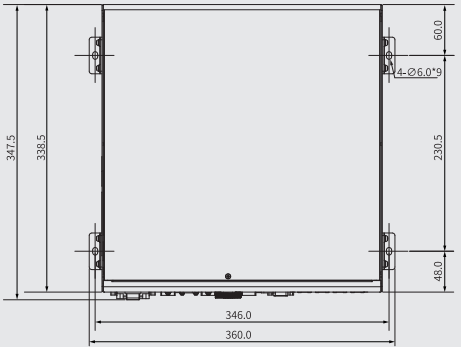
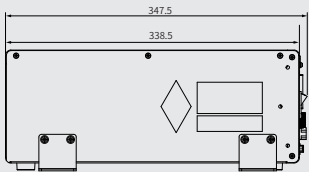
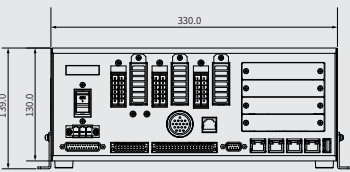
Mounting mode	Vertical mounting, horizontal mounting, 19" rack mounting	
Standard I/Os	16 inputs and 16 NPN outputs (extendable)	
Communication interfaces	Ethernet interface: Used for TCP/IP, Modbus TCP, Ethernet/IP, MC communication	
	EtherCAT-IN interface: EtherCAT slave –IN interface	
	EtherCAT-OUT interface: EtherCAT master –OUT interface	
	EtherCAT interface: Used for extension of external axes	
	RS232/RS485 interface: Used for serial and Modbus RTU communication (RS485 only)	
	USB2.0 interface: Used for backup/upload programs and export robot status information	
Control mode	Optional interface: Profinet Slave	
	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control	
Power supply	Input voltage: Single-phase 200 VAC to 240 VAC, 10A/20A, 50 Hz to 60 Hz	
	Max. power consumption: 3.1 kW (depending on the robot model)	
IP rating	IP20	
Operating conditions	Temperature: 5° C to 40° C ; Relative humidity: 20% to 95% RH@30° C (non-condensing)	
Dimensions	Standard	High- Power
	330mmx338.5mmx130mm	330mmx400mmx130mm
Weight	8kg	10kg
Applicable Robots	SCARA: IR-S4/7/10 Series, IR-TS4/5 Series 6-Axis: IRS311-7 Series, IR-R4/R4H Series	SCARA: IR-S20 Series, IR-GS20 Series, IR-S50 Series 6-Axis: IR-R11 Series

System Topology

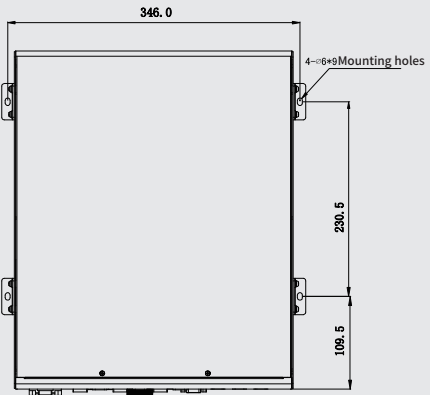
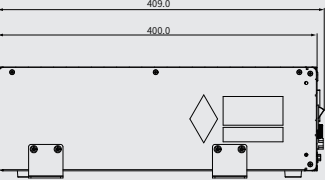
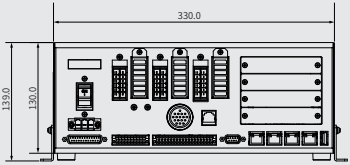


Mounting Dimensions(mm)

Standard



High- Power



Robot Controller

IRCB501 High-Protection Series

Integrating drive and control functions, the IRCB501 high-protection series features delicate structure, abundant functions, easy installation, and easy extension. It is widely used in automotive, die casting, machine tools, packaging and other industrial automation industries, as well as medical, laboratory automation and consumer product automation production industries.

Applicable Robots

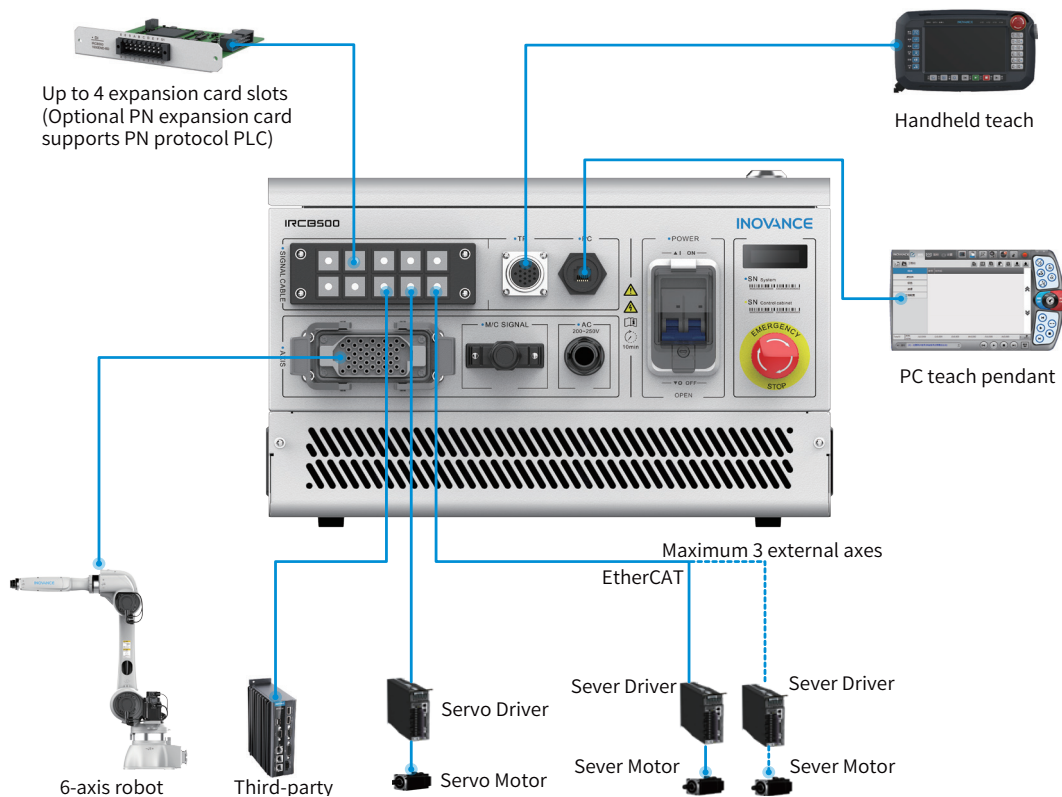
SCARA Robot	IR-S4/7/10	×
	IR-TS4/5	×
	IR-S20 Series	×
	IR-GS20 Series	×
	IR-S50 Series	●
6-Axis Robot	IRS311-7 Series	●
	IR-R4/R11 Series	●
	IR-R10 Series	●
	IR-R20 Series	●
		●



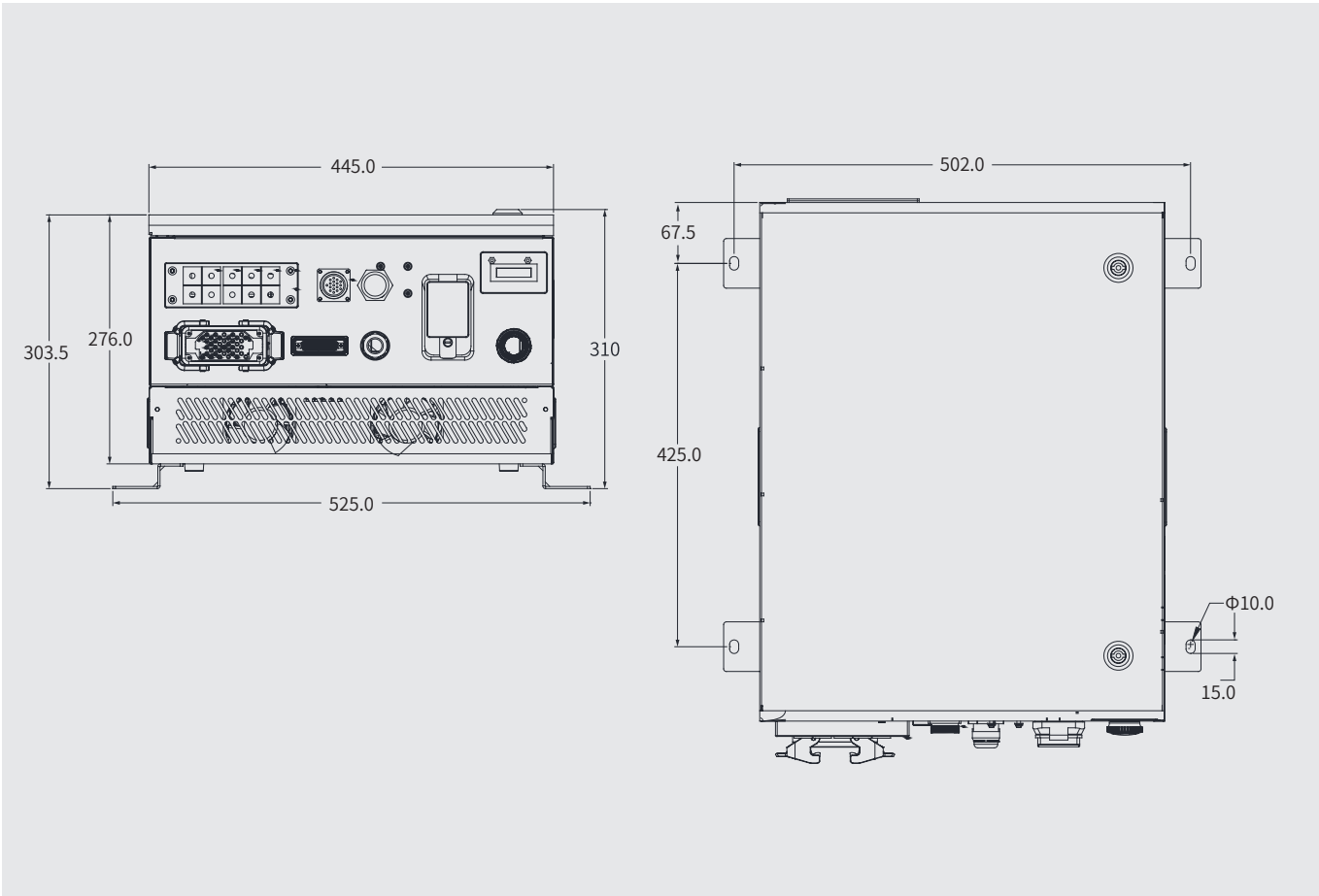
Technical Data

Mounting mode	Vertical mounting, horizontal mounting, rack mounting
Standard I/Os	16 inputs and 16 NPN outputs (extendable)
Communication interfaces	Ethernet interface: Used for TCP/IP, Modbus TCP, Ethernet/IP, MC communication
	EtherCAT-IN interface: EtherCAT slave -IN interface
	EtherCAT-OUT interface: EtherCAT master -OUT interface
	EtherCAT interface: Used for extension of external axes
	RS232/RS485 interface: Used for serial and Modbus RTU communication (RS485 only)
	USB2.0 interface: Used for backup/upload programs and export robot status information
Control mode	Optional interface: Profinet Slave
	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control
Power supply	Input voltage: Single-phase 200 VAC to 250 VAC, 23A, 50 Hz to 60 Hz
	Max. power consumption: 4.5 kW (depending on the robot model)
Operating conditions	IP54 + anti metal dust
Dimensions	Temperature: 0° C to 45° C; Relative humidity: 20% to 95% RH@30° C (non-condensing)
Dimensions	445mmx575mmx276mm
Weight	30Kg
Applicable Robots	6-Axis: IR-R10 Series, IR-R20 Series SCARA: IR-S50 Series (Optional) 6-Axis: IRS311-7 Series, IR-R4 Series, IR-R11 Series (Optional)

System Topology



Mounting Dimensions(mm)



List of Robot Models

6-Axis Robot

Series		IR-R4	IR-R4H	IRS311-7		IR-R11
Model		56S5-INT	54S5-INT	70TS5-INT	90TS5-INT	90S5-INT
Code		-	-	-	-	-
Structural style		Vertical axis cascading structure				
Number of Axes		6 axes				
Maximum reach (mm)		560.6	545.7	717	911	901.9
Repeatability (mm)		±0.01	±0.02	±0.02	±0.03	±0.02
Wrist load	Maximum(Kg)	4	4	7	7	11
Max.Speed	J1 (° /s)	450	450	450	300	300
	J2 (° /s)	460	460	380	280	225
	J3 (° /s)	520	520	520	360	330
	J4 (° /s)	560	560	550	550	450
	J5 (° /s)	560	560	550	550	420
	J6 (° /s)	900	900	1000	620	720
Maxi-mummotion range	J1 (°)	±170	±170	±170	±170	±170
	J2 (°)	-120~+110	-120~+110	-135~+80	-125~+80	+100~-135
	J3 (°)	-69~+205	-65~+195	-70~+190	-70~+190	-66~+210
	J4 (°)	±190	±190	±190	±190	±190
	J5 (°)	±120	±120	±120	±120	±125
	J6 (°)	±360	±360	±360	±360	±360
Allowed wrist torque	J4 (N·m)	8.86	8.86	16.6	16.6	20.45
	J5 (N·m)	8.86	8.86	16.6	16.6	20.45
	J6 (N·m)	4.9	4.9	9.4	9.4	10.8
Allowed wrist inertia	J4 (N·m)	0.2	0.2	0.47	0.47	0.6
	J5 (N·m)	0.2	0.2	0.47	0.47	0.6
	J6 (N·m)	0.067	0.067	0.15	0.15	0.2
Environment	Operating ambient temperature(° C)	0~45	0~45	0~45	0~45	0~45
	Relative humidity	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)
	Maximum Temperature Gradient(° C/min)	1.5	1.5	1.5	1.5	1.5
Airborne noise (dB)		≤ 75	≤ 80	≤ 75	≤ 75	≤ 75
IP rating		IP40 (IP67 optional)	IP40 (IP67 optional)	IP65	IP65	IP40 (IP67 optional)
Weight		24Kg	24.5Kg	38Kg	40Kg	45Kg
Controller		IRCB501-6LD-INT				IRCB501-6FD-INT

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

6-Axis Robot

Series		IR-R10			IR-R20
Model		110S5-INT	140S5-INT	200S5-INT	170S5-INT
Code		-	-	-	-
Structural style		Vertical axis cascading structure			
Number of Axes		6 axes			
Maximum reach (mm)		1101.6	1422	2045	1723
Repeatability (mm)		±0.02	±0.05	±0.05	±0.05
Wrist load	Maximum(Kg)	10	10	10	20
Max.Speed	J1 (° /s)	300	200	190	190
	J2 (° /s)	225	200	175	175
	J3 (° /s)	330	200	200	200
	J4 (° /s)	450	375	400	400
	J5 (° /s)	420	375	360	360
	J6 (° /s)	720	600	610	610
Maxi-mummotion range	J1 (°)	±170	±170	±170	±170
	J2 (°)	+100~-135	-160~+60	-155~+80	-155~+80
	J3 (°)	-66~+210	-80~+160	-75~+160	-75~+160
	J4 (°)	±190	±180	±180	±180
	J5 (°)	±125	±140	±140	±140
	J6 (°)	±360	±360	±360	±360
Allowed wrist torque	J4 (N·m)	18.59	22	22	42
	J5 (N·m)	18.59	22	22	42
	J6 (N·m)	9.8	9.8	10	20
Allowed wrist inertia	J4 (N·m)	0.6	0.63	1	1.18
	J5 (N·m)	0.6	0.63	1	1.18
	J6 (N·m)	0.2	0.2	0.2	0.5
Environment	Operating ambient temperature(° C)	0~45	0~45	0~45	0~45
	Relative humidity	5% to 95% RH (non-condensing)	10% to 80% RH (non-condensing)	10% to 80% RH (non-condensing)	10% to 80% RH (non-condensing)
	Maximum Temperature Gradient(° C/min)	1.5	1.5	1.5	1.5
Airborne noise (dB)		≤ 75	≤ 75	≤ 75	≤ 80
IP rating		IP40 (IP67 optional)	Body: IP65 Wrist: IP67	Body: IP65 Wrist: IP67	Body: IP65 Wrist: IP67
Weight		47Kg	130Kg	245Kg	240Kg
Controller		IRCB501-6FD-INT	IRCB501-6MD-INT	IRCB501-6ND-INT	

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

SCARA Robot

Series		IR-S4	IR-S7			IR-S10		
Model		40Z15S3-INT	50Z20S3-INT	60Z20S3-INT	70Z20S3-INT	60Z20S3-INT	70Z20S3-INT	80Z20S3-INT
Code		-	-	-	-	-	-	-
Mounting mode		Table mounted						
Arm length	J1+J2 (mm)	400	500	600	700	600	700	800
	J1 (mm)	225	225	325	425	225	325	425
	J2 (mm)	175	275	275	275	375	375	375
Maximum speed	J1+J2 (mm/s)	7200	7120	7850	8590	9100	9800	10500
	J3 (mm/s)	1300	1600	1600	1600	1600	1600	1600
	J4 (° /s)	2600	2000	2000	2000	2700	2700	2700
Maximum motion range	J1 (°)	±132	±132	±132	±132	±132	±132	±132
	J2 (°)	±141	±150	±150	±150	±150	±150	±150
	J3 (mm)	150	200	200	200	200	200	200
	J4 (°)	±360	±360	±360	±360	±360	±360	±360
Repeat-ability	J1+J2 (mm)	±0.01	±0.02	±0.02	±0.02	±0.02	±0.02	±0.025
	J3 (mm)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
	J4 (°)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Load	Rated (Kg)	2	3	3	3	5	5	5
	Maximum (Kg)	4	7	7	7	10	10	10
Permis-sible moment of inertia of J4	Rated (Kg· m²)	0.005	0.01	0.01	0.01	0.02	0.02	0.02
	Max (Kg· m²)	0.05	0.12	0.12	0.12	0.3	0.3	0.3
Standard cycle time (s)		0.342	0.351	0.36	0.375	0.361	0.386	0.416
Lead screw di-mensions	Shaft diameter (mm)	Ø16	Ø20	Ø20	Ø20	Ø20	Ø20	Ø20
	Through hole inner diameter (mm)	Ø11	Ø14	Ø14	Ø14	Ø14	Ø14	Ø14
Mounting base dimen-sions (mm)		120x120(Ø9)	150x150(Ø9)	150x150(Ø9)	150x150(Ø9)	150x150(Ø9)	150x150(Ø9)	150x150(Ø9)
Weight (excluding cables)		12Kg	17Kg	17.5Kg	19Kg	18.5Kg	19Kg	20.5Kg
Controller		IRCB501-4AD-INT	IRCB501-4CD-INT			IRCB501-4CD-INT		

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

SCARA Robot

Series		IR-S20		IR-GS20		IR-S50	IR-TS4	IR-TS5
Model		80Z42S5-INT	100Z42S5-INT	80Z42S5-INT	100Z42S5-INT	120Z40S5-INT	35Z15S3-INT	55Z15S3-INT
Code		-	-	-	-	-	-	-
Mounting mode		Table mounted					Inverted mounting	
Arm length	J1+J2 (mm)	800	1000	800	1000	1200	350	550
	J1 (mm)	350	550	350	550	600	175	275
	J2 (mm)	450	450	450	450	600	175	275
Maximum speed	J1+J2 (mm/s)	9550	10800	9550	10800	7400	6180	9712
	J3 (mm/s)	1010	1010	1010	1010	750	1300	1300
	J4 (° /s)	705	705	705	705	600	2600	2000
Maximum motion range	J1 (°)	±132	±132	±132	±132	±128	±225	±225
	J2 (°)	±152	±152	±152	±152	±150	±225	±225
	J3 (mm)	420	420	420	420	400	150	150
	J4 (°)	±360	±360	±360	±360	±360	±720	±720
Repeat-ability	J1+J2 (mm)	±0.025	±0.025	±0.025	±0.025	±0.05	±0.01	±0.015
	J3 (mm)	±0.01	±0.01	±0.01	±0.01	±0.02	±0.01	±0.01
	J4 (°)	±0.01	±0.01	±0.01	±0.01	±0.005	±0.01	±0.01
Load	Rated (Kg)	10	10	10	10	-	2	2
	Maximum (Kg)	20	20	20	20	50	4	5
Permis-sible moment of inertia of J4	Rated (Kg· m²)	0.5	0.5	0.5	0.5	-	0.005	0.01
	Max (Kg· m²)	1	1	1	1	2.45	0.05	0.12
Standard cycle time (s)		0.36	0.38	0.36	0.38	0.84	0.304	0.34
Lead screw di-mensions	Shaft diameter (mm)	Ø25	Ø25	Ø25	Ø25	Ø24.9	16	20
	Through hole inner diameter (mm)	Ø18	Ø18	Ø18	Ø18	Ø12	11	14
Mounting base dimen-sions (mm)		200x200(Ø16)	200x200(Ø16)	200x200(Ø16)	200x200(Ø16)	200x200(Ø14)	95X95X160 (6-ø6.6)	95X95X160 (6-ø6.6)
Weight (excluding cables)		53Kg	56Kg	54Kg	57Kg	124Kg	18.5Kg	20Kg
Controller		IRCB501-4ED-INT					IRCB501-4CD-INT	

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

Accessories

Type	Code	Description
Fork lift tool for robots	01660006	Used by the fork lift for handling IR-R10 and IR-R20 series 6-axis robots.
I/O male aviation connector (90°)	15050817	Used for wiring of the aviation connector on the upper end of the forearm inIRS311-7,IR-R4/11 series 6-axis robots.
	15050930	Used for wiring of the aviation connector on the upper end of the forearm in IR-R10 and IR-R20 series 6-axis robots.
	15051215	Used for wiring of the aviation connector on the upper end of the forearm in IR-R10 and IR-R20 series 6-axis robots(with1.5m Cable).
I/O cable (5 m)	1504B978	Used for wiring betweenIRS311-7, IR-R10、IR-R20、IR-R4/4H/11series 6-axis robots and the controller.
I/O cable (5 m) (High flexible cable)	1504RP67	Used for wiring betweenIRS311-7, IR-R10、IR-R20、IR-R4/4H/11series 6-axis robots and the control-ler,high flexible cable
Handheld break release box	01660004	Used to manually release the break of the robot in emergencies, applicable to all series of 6-axis robots.
Protective cover at the upper end of the screw	20212980	Protective cover for the upper end of the IR-S4 series SCARA robot screw
	20213099	Protective cover for the upper end of the IR-S7/10 series SCARA robot screw
Homing tool - Homing column 1	32020626	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Homing tool - Homing column 2	32020627	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Homing tool - Positioning block	32040084	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Screw telescopic cover (Separate purchase does not have cleanliness class requirements)	32070354	SCARA2.0 4kg upper screw telescopic cover,IR-S4
	32070355	SCARA2.0 4kg bottom screw telescopic cover,IR-S4
	32070356	SCARA2.0 7kg 10kg upper screw telescopic cover,IR-S7/S10
	32070357	SCARA2.0 7kg10kg bottom screw telescopic cover,IR-S7/S10

Teach Pendant Model

Code	Model	Description
01640049	IRTP80-L5-INT	Robot teach pendant (5 m)

Expansion Card

Type	Code	Model	Description
IRCB501 Series IRCB501 High-Protection Series	01650025	IRCB501-2ENID-BD	2-channel differential input incremental encoder expansion card
	01650026	IRCB501-1600END-BD	General I/O expansion card with 16 inputs
	01650027	IRCB501-0016ETND-BD	General I/O expansion card with 16 NPN outputs
	01650028	IRCB501-2PN-BD	PROFINET slave expansion card
	-	IRCB501-FS-01-BD	Safety function expansion card

List of Robot Models

IR - G S 4 - 40 Z15 S 3 - * - INT
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Product Family IR: INOVANCE Robot	④ Load(kg) 4: 4kg 50: 50kg	⑧ Mopping line identification 3: 3-meter standard cable 5: 5-meter standard cable
② Series Identification Empty: Standard Version G: High Performance Version (When Choose High Performance Version, Please contact INOVANCE technical support)	⑤ Arm length(mm) 40: Arm length 400mm 200: Arm length 2000mm	
	⑥ Maximum travel of Z-axis Empty: Without screw,6Axis Robots Z15: The maximum stroke value is 150mm Z42: The maximum stroke value is 420mm	
③ Product Class S: SCARA robot TS: Inverted SCARA robot R: 6-axis robot	⑦ Environment S: Standard P: High-Protection(IP67)	⑨ Customized Content Other letters: Other customization

IR S 311 - 7 - 70 T S 5 - * - INT
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Product Family IR: INOVANCE Robot	⑤ Arm length(mm) 70: Arm length 700mm 90: Arm length 900mm	⑧ Mopping line identification 5: 5-meter standard cable
② Series Identification S:System		
③ Product Class 311: 6-axis robot	⑦ Environment S: Standard	⑨ Customized Content Other letters: Other customization
④ Load(kg) 7: 7kg		

NOTES