Robotics

IRB 1600
Industrial Robot

Main Applications
Arc welding
Assembly
Die casting
Injection moulding
Machine tending
Material handling
Packaging

The All-round Winning Athlete
The IRB 1600 is a fast and strong bending backwards robot – the answer to important market demands. Designed to be cost optimal, the IRB 1600 is as masterful in arc welding as in die casting, machine tending, material handling, injection moulding, assembly and packaging. Being a flexible all-rounder, the IRB 1600 is nonetheless a keen specialist with competitive edge in each application.

The built in second generation of TrueMove™
and QuickMove™ substantially improves the path accuracy and cycle time of the IRB 1600. This software also supervises internal robot loads, which means reduced risk of overload and longer robot lifetime.

Strong – Maximized utilization
Payload options are 6 or 8 kg (up to 12 kg with "wrist down"). This makes the IRB 1600 the strongest robot in its class, offering maximized utilization.

Robust – Harsh production environment
IP 67 classed, and "Foundry Plus" optional, the IRB 1600 is resistant against harsh production environments.

Flexible integration and production
Bending backwards concept and different mounting options (wall, floor, inverted or tilted mounting) make the IRB 1600 a versatile robot, ready to meet the highest demands on flexible integration and production.

When wall mounted the IRB 1600-8 gets a substantially improved working range for axis 1 with +/- 60°.

For arc welding you have the option of IRB 1600ID with integrated arc welding hose package. For details, please go to separate data sheet.

Smart – High production efficiency
Building compact and efficient cells, up to four robots can be independently operated from the same controller.

Power and productivity
for a better world™

ABB

IRB 1600

Specification

Robot versions IRB	Handling capacity	Reach
IRB 1600-6/1.2	6 kg	1.2 m
IRB 1600-6/1.45	6 kg	1.45 m
IRB 1600-8/1.2	8.5 kg	1.2 m
IRB 1600 -8/1.45	8.5 kg	1.45 m
Number of axes	6	
Protection	IP 54 (standard, Clean Room)	
	IP 67 FoundryPlus	
Mounting	floor, wall, inverted, tilted	

30°

Integrated signal supply	23 signals + 10 power (optional)
Integrated air supply	max. 8 bar on upper arm (optional)
IRC5 Controller variants	Single cabinet, Dual cabinet, Panel mounted

Performance

Position repeatability	0.05 mm	
Speed axis *)	8 kg	6 kg
1	180°/s	150°/s
2	180°/s	160°/s
3	200°/s	170°/s
4	400°/s	320°/s
5	400°/s	400°/s
6	460°/s	460°/s

*) Max velocity is reduced at single phase power supply, e.g. Compact controller. Please, see Product specification for further details.

Range of movement

	1.2 m reach	1.45 m reach
Axis 1*	+180° to -180°	+180° to -180°
Axis 2	+136° to -63°	+150° to -90°
Axis 3	+55° to -235°	+65° to -245°
Axis 4	+200° to -200° Default +190 revolutions to -190 revolutions Max**	+200° to -200° Default +190° revolutions to -190 revolutions Max**
Axis 5	+115° to -115°	+115° to -115°
Axis 6	+400° to -400° Default +288 revolutions to -288 revolutions Max**	+400° to -400° Default +288 revolutions to -288 revolutions Max**

*   +/- 60° wall mounted IRB 1600-8

   +/- 20° wall mounted IRB 1600-6

   +/- 45° tilted robot, up to 30°

** The default working range for axis 4 and axis 6 can be extended by changing parameter values in the software

Electrical connections

Supply voltage	200 – 600 V, 50/60 Hz
Power consumption	ISO-Cube at max speed 0.58 kW
Rated power	
supply transformer 4 kVA/7.8 KVA with external axis	

Physical

Dimensions	
Total height	1.45 m = 1294,5; 1.2 m = 1069,5
Robot base	484 x 648
Weight	
IRB 1600-X/1.2 m	250 kg
IRB 1600-X/1.45 m	250 kg

Environment

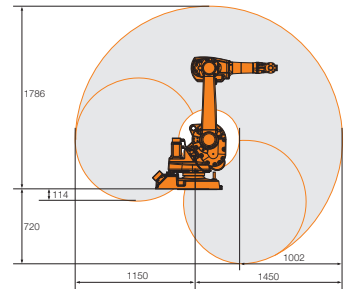| Temperature	+5 to +45°
Relative humidity	max. 95 %
Noise level	max. 70 dB (A)
Options	Foundry Plus
	Clean Room, class 5 (certified by IPA)

IPA

Data and dimensions may be changed without notice

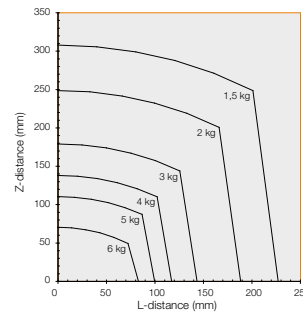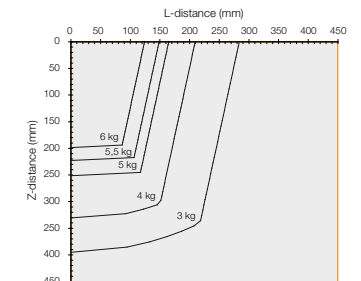## Working range

IRB 1600/1.2 m
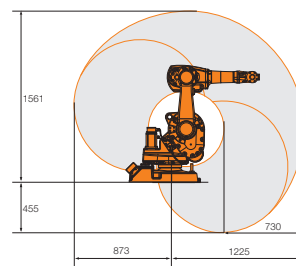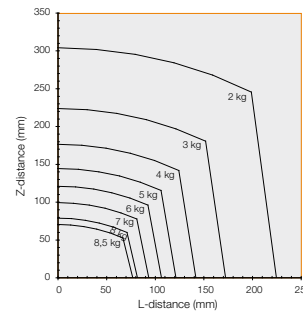

IRB 1600/1.45 m

IRB 1600-6/xx Armload 15 kg

IRB 1600-6/xx with Vertical Wrist

IRB 1600-8,5/xx Armload 15 kg

IRB 1600-8,5/xx with Vertical Wrist

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