ROBOTICS

IRB 1090 industrial education robot
Exclusively designed for educators and students

IRB 1090 industrial education robot is designed exclusively for educators and students to prepare the next generation for their future employment. The future-proof IRB 1090 education robot together with the OmniCore controller, allows students to gain industry-relevant robotic and automation skills, learn about the latest functions, and prepare for their future careers.

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Join the future of education with the IRB 1090! Elevate your teaching, inspire your students, and embrace a new era of educational excellence.

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How do we prepare the future workforce?

Industry-relevant skills
Educating how robotic automation can be deployed across different sectors, such as automotive, electronics, food & beverage.

New production techniques
OmniCore controller brings increasing functionalities.

Programming skills
100 free RobotStudio® premium licenses included with the purchase of the IRB 1090 robot.

Design varied educational cells
Educational institutions can design or customize any educational cells as whatever they want.

Future of work
Bridge the skills gap, empower educators, and create careers born out of curiosity.

Authenticated by STEM.org
Designed to empower students with a distinct edge in future employment endeavors.

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Elevate your teaching, inspire your students

80% of education professionals have said robots and automation will shape the future of employment over the next ten years. Responding to growing demand in education, the IRB 1090 education robot is designed exclusively for educators and students to gain industry-relevant robotic and automation skills that are important to their future careers.

The latest functionality

The future-proof IRB 1090 industrial education robot together with the OmniCore E10 ultra slim controller, brings increasing functionalities to enable students to hone their skills on the latest production techniques on the market such as motion control, TrueMove, QuickMove, Externally Guided Motion, and energy-saving power grid feedback solutions. This includes various software packages, such as Wizard easy programming, Robot Control Mate and RobotStudio AR Viewer App.

Varied educational cells

Educational institutions, robot resellers, and system integrators can design and customize a variety of application cells, such as assembly, material handling, inspection, and packaging. This can include different accessories such as vision cameras, grippers, working pieces, pedestals, and moveable carts to meet specific requirements.

Easy to move and install

The IRB 1090 offers 580mm reach and 3.5kg payload, coupled with a 10% smaller footprint and 20% reduction in weight compared to its predecessor, providing the ability to easily move the robot, and save on installation space.

Authenticated by STEM.org

The IRB 1090 education robot, equipped with the prestigious STEM.org authentication, is designed to empower students, providing them with a distinct edge in future employment endeavors.

100 free RobotStudio licenses

100 free RobotStudio premium licenses are included with the purchase of the IRB 1090 robot. Any teacher at a school can get 100 free RobotStudio licenses to use in their classroom. RobotStudio is a virtual tool that students can use to learn the fundamentals of robot programming, even before buying a physical robot.

Diverse applications

Students can learn diverse applications such as:
• Assembly
• Picking/Placing
• Material Handling
• Packaging
• Testing

Specification

Robot version	Reach (m)	Payload (kg)	Armload (kg)
IRB 1090-3.5/0.58	0.58	3.5	0.5
Number of axes	6		
Protection	Standard IP40.		
Mounting	Floor mounted, Suspended[1]		
Controller	OmniCore E10		
Integrated signal and power supply	Up to 16 Signals (C1+C2) on wrist[2]		
Integrated air supply	4 air on wrist (Max. 6 Bar)[2]		
Integrated ethernet	One 1000 Base-T ethernet Port[2]		

[1] There are some reachable space limitation when the payload/pose is tough
[2] Optional

Performance

	IRB 1090-3.5/0.58
1 kg picking cycle	0.76 s
25 × 300 × 25 mm	

Performance (according to ISO 9283)

	IRB 1090-3.5/0.58
Pose repeatability, RP	0.05 mm
Pose stabilization time, PSt (s) within 0.1 mm of the position	0.2
Path repeatability, RT	0.05 mm

Technical information

Physical

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Dimensions robot type	160 × 172 mm
Weight IRB 1090	21 kg

Data and dimensions may be changed without notice.

Movement

Axis movement	Working range	Axis max. speed IRB 1090-3.5/0.58
Axis 1 rotation	+230° to -230°	250°/s
Axis 2 arm	+113° to -115°	250°/s
Axis 3 arm	+55° to -205°	250°/s
Axis 4 wrist	+230° to -230°	320°/s
Axis 5 bend	+120° to -125°	320°/s
Axis 6 turn	+400° to -400°	420°/s

Specifications subject to change without notice

Working range, IRB 1090-3.5/0.58
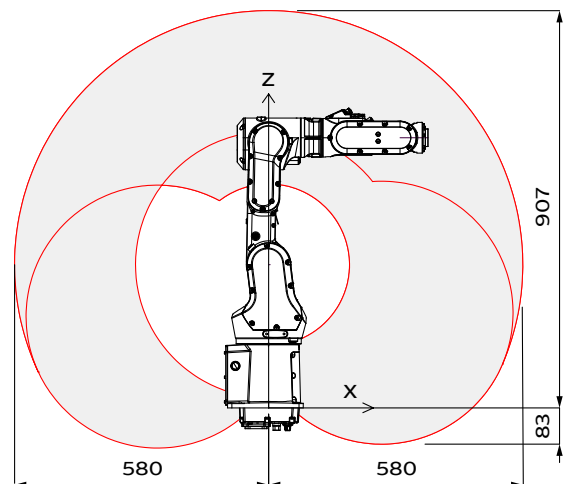
OmniCore™ Controller, FlexPendant & IRB 1090 Education

abb.com/robotics