

IRB 5500 FlexPainter

A new way of exterior painting



The IRB 5500 FlexPainter takes painting closer to perfection by integrating the paint application equipment. Combined with its large work area and high acceleration and painting speed, the result is the most efficient and flexible paint robot solution for basically any application.

Paint savings

Our compact and light-weight paint application components enable us to put vital paint regulation equipment, like the pumps, as close as 15 cm from the wrist. This reduces paint and solvent waste during color change significantly.

We have integrated the process equipment in the IRB 5500 FlexPainter in addition to the fully integrated process control (hardware and software). The IRC5P is controlling both the paint process and the robot motion so you can enjoy substantial savings.

Powered by IPS

The “push-out” function integrated in the IPS system is one specific feature that enables a reduction of paint even further. The basic architecture of IPS is built on combining process control and motion control as one, this simplified the system set up and enables for real savings and process perfection.

Built for painting

Standard solutions accommodate color change valves for up to 32* colors with circulation, integrated in the process arm of the robot. Also two pumps, driven by integrated servo motors, 64 pilot valves, atomizer control with dual shape air and closed loop regulation, closed loop regulation of bell speed and high voltage control – all fully integrated. Solutions for both solvent- and water-borne paint are available. Please note that more is available on special request.

Less atomizers, higher flow

ABB’s high flow RB1000 atomizer family is specifically designed for the high acceleration and speed of the IRB 5500 FlexPainter. This unique combination significantly reduces the number of robots needed in a spray booth and provides superior performance and high finish quality.

Modular paint components

To integrate the process into the IRB 5500 FlexPainter, ABB has developed a series of light-weight, compact and modular paint application components. This includes color change valves, 2K mixers, air- and paint regulators and pumps. All components are designed for maximum flow.

Paint robot control system

IRC5P is a modern control system, specifically designed for the paint shop. With the IPS (Integrated Process System), the userfriendly Ex certified FlexPaint Pendant and RobView 5 it is a combination of standardized functions for the paint installation and to fit specific needs. This package includes standard applications for defining User screens, Program editing and Version control, and many more. RobView 5 can also be a components in a larger Cell control HMI, like ABB FlexUI or other.



01



02



03

01 IRB 5500-22 process robot/elevated mounted

02 IRB 5500-22 process robot/floor mounted

03 IRB 5500-23 process robot on clean-wall rail

| Specification | |
|------------------|---|
| Number of axes | 6 |
| Payload on wrist | 13 kg |
| Protection | IP66 (wrist IP54) |
| Ex approval | Explosion protected Ex i/Ex p/Ex c for installation in hazardous area Zone 1 & Zone 21 (Europe) and Division I, Class I & II. |
| Mounting | Wall, floor, tilted, inverted, clean-wall rail |

Technical information

Electrical Connections

| | |
|--------------------|--------------------------------------|
| Mains voltage | 200 - 600VAC, 3-phase, 50/60 Hz |
| Energy consumption | According to international standards |

Physical

| Dimensions | |
|------------------|---------------------|
| Robot footprint | 500 x 680 mm |
| Robot controller | 1450 x 725 x 710 mm |
| Weight | |
| Robot unit | 600 kg |
| Robot controller | 180 kg |

Environment

| Ambient temperature | |
|---------------------|-----------------|
| Robot unit | 0 °C to +40 °C* |
| Robot controller | +48 °C maximum |
| Relative humidity | |
| | 95 % maximum |

*Recommended max ambient temp <30°

Technical information

PC Tools

| | |
|--------------------|--|
| RobView 5 | Paint cell supervision and operation (included) |
| ShopFloor Editor | Off-line path- and process tuning using 3D graphics |
| RobotStudio® Paint | Full 3D simulation and programming of the paint cell |

Interface

| | |
|------------------|--|
| Backup | USB connection and Ethernet |
| I/O boards | Analog, digital, encoder and process I/O boards available |
| Fieldbus support | Interbus-S, ProfiBus, Profinet, CC Link, DeviceNet and Ethernet IP available |
| Network | Ethernet FTP/NFS |

Performance

| | Static repeatability (mm) | Wrist work envelope |
|--|---------------------------|---------------------|
| | 0.15 | ±140° |

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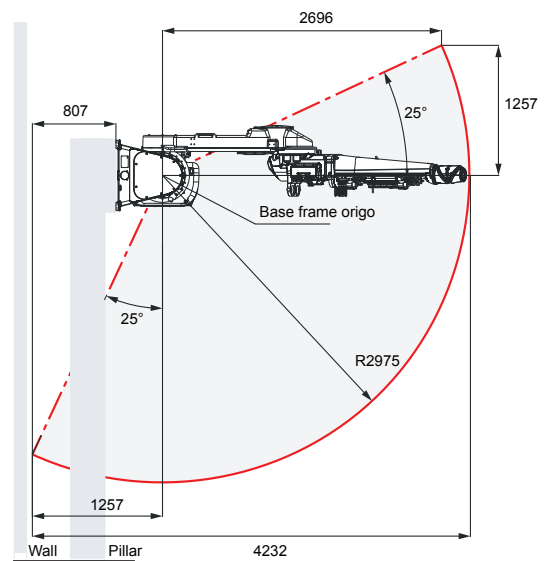
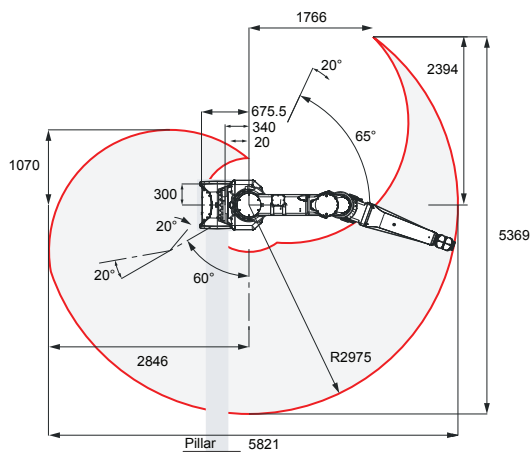
Specification

| | IRB 5500-22 | IRB 5500-22 Floor mounted | IRB 5500-23 Clean wall rail |
|------------------------|-------------|------------------------------|--|
| Robot foot-print (mm) | 500 x 680 | 581 x 718 | 500 x 680 |
| Weight robot unit (kg) | 600 | 610 | 600 |
| Weight trolley (kg) | N/A | N/A | 330 |
| Rail system | N/A | N/A | Rail is available in steps of 0.5 m from 2-15 m for 1 robot on rail and 4-8 m for 2 robots on rail as standard. Longer rail can be delivered on request. |
| Cable chain wide (mm) | N/A | N/A | 400 |
| Accuracy (mm) | 0.15 | 0.15 | Robot: 0.15 (on TCPO) Trolley: 0,3 Velocity rail axis: 1,4 m/sec |

IRB 5500 FlexPainter

| Axis movement | Working range | Axis max speed |
|-----------------|----------------------------|----------------|
| Axis 1 | See work envelope drawings | 100°/s |
| Axis 2 | See work envelope drawings | 100°/s |
| Axis 3 | See work envelope drawings | 100°/s |
| Axis 4 wrist | See work envelope drawings | 465°/s |
| Axis 5 bend | See work envelope drawings | 350°/s |
| Axis 6 rotation | See work envelope drawings | 535°/s |

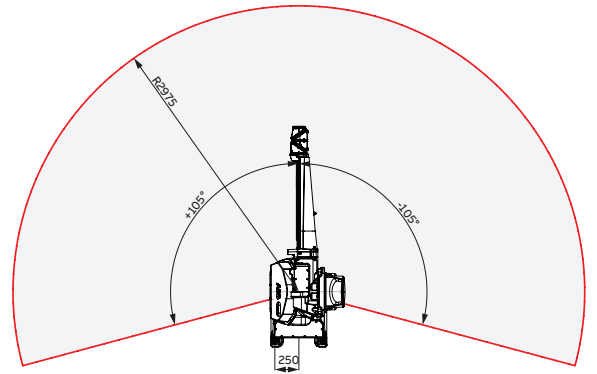
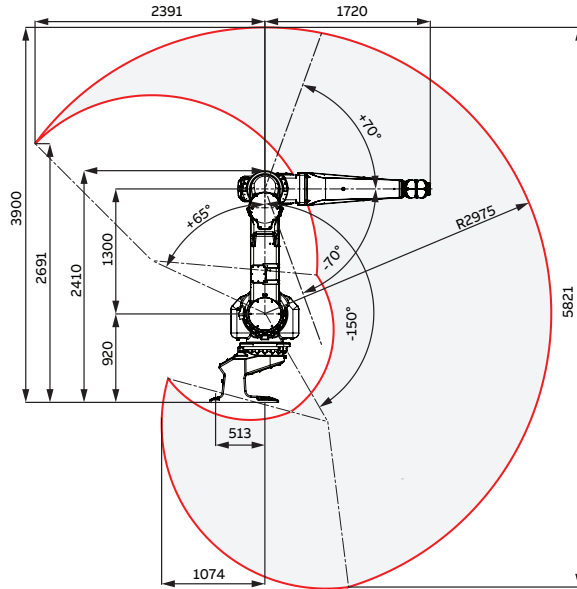
IRB 5500 FlexPainter, working range



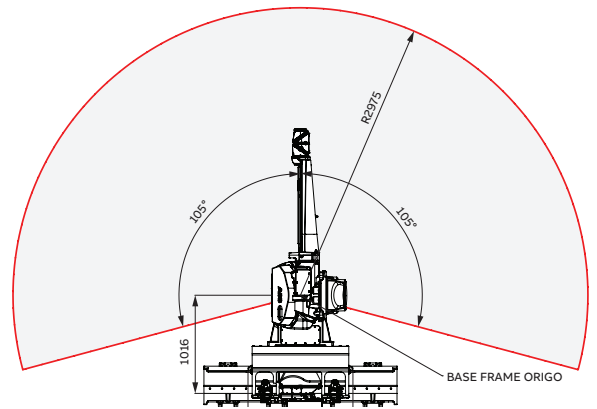
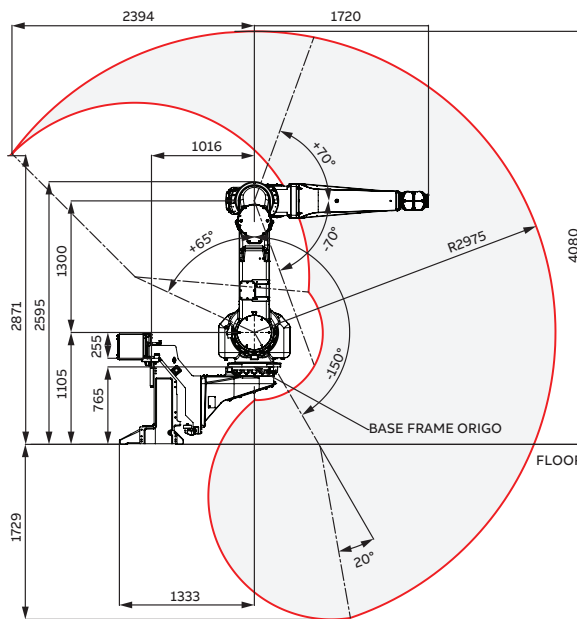
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IRB 5500-22 Floor mounted working range



IRB 5500-23 Clean wall rail working range



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