

Brooks PreciseFlex Collaborative Robot Installation Guide

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Brooks PreciseFlex Collaborative Robot



Technical Specifications:

• Robot Compatibility:

• IntelliGuide v23: PreciseFlex 400, PreciseFlex 3400, PreciseFlex c10

IntelliGuide v60: PreciseFlex 3400, PreciseFlex c10

• Cameras: Forward-Looking and Downward-Looking

• Resolution: 5MP, H:2592, V:1944

• Pixel Size: 6 mm

• Lens: Manual adjustment requires re-calibration

• Working Distance: 150 mm (as configured)

• Focal Length: 2.8 mm

• FOV (H):

• Lighting: PWM Controlled LED lighting (White)

• Weight:

IntelliGuide v23: 0.67 kgIntelliGuide v60: 1.07 kg

· Precision, Typical from static position at Working

Distance:

• Barcode Formats:

- 1D Barcode Formats: Code39, Code128, Code25, Codebar, EAN_8,EAN_13, UPC_E, UPC_A,
 CODE39Checksum, Code39StartStop,Code25Checksum, Code93
- 2D Barcode Formats: PDF_417, DATA_MATRIX, DATABAR, PATCH_CODES,Aztec, QR Code

· Options Software:

- 23N Gripping Force: 60 mm Stroke, 1.0 kg Payload (when friction is the only gripping force)
- 60N Gripping Force: 40 mm Stroke, 3.0 kg Payload (when friction is the only gripping force)

Product Usage Instructions

Setup and Calibration:

To begin using the IntelliGuide Vision system, ensure compatibility with the specified robots. Calibrate the cameras and set the working distance as required.

Gripper Configuration:

If using gripper fingers with the system, specify the offset to the gripper fingers for accurate object manipulation.

Vision Tools Utilization:

Explore the various vision tools available such as object locator, barcode reading, image capture, and image sharpness adjustment for precise vision applications.

Auto-Recovery and Auto-Teach Functions:

Take advantage of the auto-recovery feature for automatic reteaching of locations in case of workspace shifts. Use auto-teach to quickly recover from changes by reading ArUco markers.

Object Localization and Image Analysis:

Utilize the system for locating objects in dynamic environments and capturing time-stamped images for further analysis or troubleshooting.

IntelliGuide™ Vision

Vision Made Easy for PreciseFlex Robots

Simplify Vision Applications

Cameras embedded in the gripper (forward and downward facing) enable less engineering effort, faster deployment, and shorter time-to-production.

Factory calibrated and ready to use out of the box.

Simply specify offset to gripper fingers.

Additional Vision Tools Available.

Reduce Design, Eng. and Deployment Costs

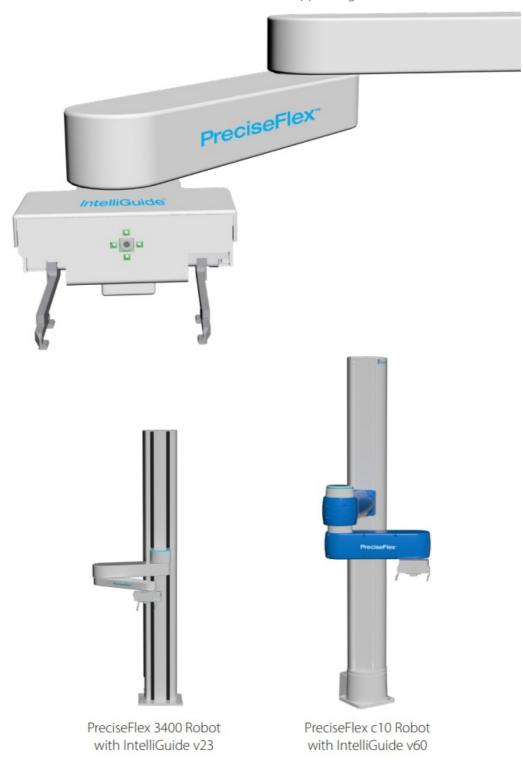
Significantly reduces the time needed from system design to installation and deployment.

Traceability with Barcode Reading

Read 1D and 2D barcodes. See specifications for complete list.



PRODUCT OVERVIEW



Key Benefits

- Fast and easy deployment unlocks the best ROI
- Automatically adapt to changes in workspace
- Eliminate time consuming teaching for simple and complex applications
- Higher reliability with no external cables

Key Features

• Auto-Recovery When Change Happens

Automatic recovery and reteaching of locations when things shift in the workspace.

Auto-Teach

Read ArUco Markers and determine offsets to hotels, instruments, magazines, fixtures etc. Quickly recover from changes in workcell without reteaching tens or hundreds of locations.

• Ideal for Roll-up Carts and AMRs

Easily locate objects in dynamic environments.

Image Capture

Capture time-stamped images when an event occurs and transfer for further analysis. Useful for trouble shooting of chain of custody.

Image Sharpness

Returns image sharpness that enables focus adjustment by moving the robot closer to, or farther away from, the target.

Object Locator

Geometric part locator tool for locating objects in 2D space.

Quickly train objects and start picking from trays, conveyors, nests, etc.

Technical Specifications

Robot Compatibility

IntelliGuide v23	PreciseFlex 400*, PreciseFlex 3400*, PreciseFlex c10
IntelliGuide v60	PreciseFlex 3400*, PreciseFlex c10

Also compatible with these robots on Collaborative Linear Rail

Specifications

intelliduae voo	
IntelliGuide v60	1.07 kg
IntelliGuide v23	0.67 kg
Weight	
Lighting	PWM Controlled LED lighting (White)
FOV (H):	72°
Focal Length	2.8 mm
Working Distance	150 mm (as configured)
Lens	6 mm Manual adjustment requires re-calibration
Pixel Size	Η:1.4 μ, V: 1.4 μ
Resolution	5MP, H:2592, V:1944
Cameras	Forward Looking and Downward Looking

Precision, Typical from static position at working Distance		
	±0.18 mm in X/Y/Z, ±0.19° in Rotation (results can vary with application)	
Barcode Formats 1D		
	Code39 (standard and extended) Code128 (standard and short Code25 (ITF) Codebar (Codabar) EAN_8 EAN_13 UPC_E UPC_A CODE39Checksum Code39StartStop Code25Checksum Code93	
Barcode Formats 2D		
	PDF_417 (standard and Micro) DATA_MATRIX DATABAR PATCH_CODES Aztec QR Code	
IntelliGuide v23		
	23N Gripping Force 60 mm Stroke 1.0 kg Payload (when friction is the only gripping force) Robot payload capacity must also be considered Picks SBS plates in portrait and landscape orientation	
IntelliGuide v60		
	60N Gripping Force 40 mm Stroke 3.0 kg Payload (when friction is the only gripping force) Robot payload capacity must also be considered	

Options

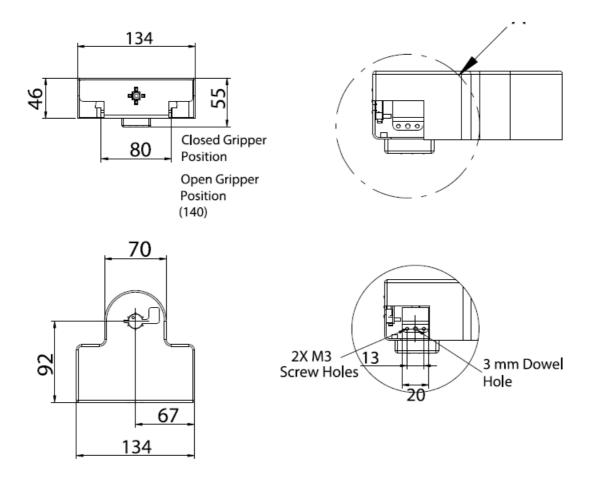
- See IntelliGuide Accessories Datasheet
- · ArUco labels for quick start
- Calibration plate
- SBS Plate fingers (for 23N IntelliGuide)

Software

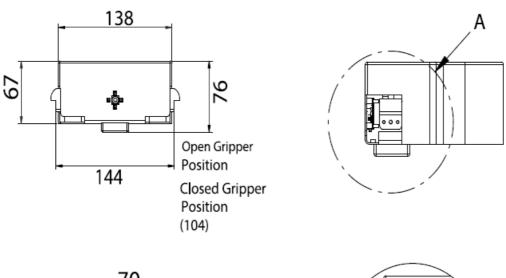
- Programming via Guidance Development Studio (GDS)
- Compatible with Guidance Programming Language (GPL)
- Compatible with TCS API

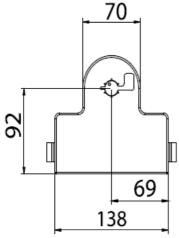
Dimensions

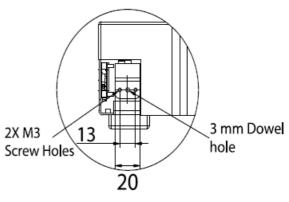
Dimensions, IntelliGuide v23



Dimensions, IntelliGuide v60







Frequently Asked Questions (FAQ):

Q: Can the IntelliGuide Vision system work with robots other than PreciseFlex models?

A: The IntelliGuide Vision system is specifically designed for compatibility with PreciseFlex models. Compatibility with other robots may vary.

Q: How do I adjust the image sharpness using the system?

A: Image sharpness can be adjusted by moving the robot closer to or farther away from the target object. Finetune this adjustment based on your specific requirements.

Q: What barcode formats are supported by the system?

A: The system supports various barcode formats including Code39,Code128, QR Code, and more. Refer to the specifications section for a complete list of supported formats.

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Documents / Resources



Brooks PreciseFlex Collaborative Robot [pdf] Installation Guide
PreciseFlex 3400, PreciseFle c10, PreciseFlex Collaborative Robot, PreciseFlex, Collaborative Robot, Robot

References

- Brooks Automation Semiconductor Manufacturing and Collaborative Robots Brooks Automation
- User Manual

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