

COMPACT SYMMETRIC PORTABLE

Collaborative robot with a symmetrical
structure optimized for operation in narrow spaces

OPTi



OPTi3

10.9 kg

Weight

3 kg

Payload

940 mm

Reach

IP54

IP Rating

■ **Minimized motion paths and improved work efficiency**

Korea's first left-right symmetrical design supports flexible operation without unnecessary movements, even in narrow spaces with heavy interference. The Quick Changer option allows easy tool replacement, reducing work preparation time

■ **Portable collaborative robot**

The ergonomic grip allows for easy lifting and relocation. Workers can immediately position the robot at the desired location without additional transportation equipment.

■ **Ultra-lightweight collaborative robot**

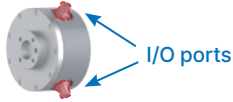
With an ultra-lightweight design weighing just 10.9 kg, the robot can operate in confined areas that are difficult for humans to access. By taking over tasks with hard-to-reach blind spots, the OPTi3 improves both productivity and worker safety.

■ **Precision work robot equipped with IMU sensors**

Using IMU sensor data, the robot automatically compensates for installation tilt, maintaining consistent quality even on inclined surfaces. The magnetic base option allows instant installation on steel structures regardless of angle.



Supports 2 I/O ports



Battery-less redundant encoders (Axes 1-6)

Integrated handle



Built-in tilt sensor for automatic angle recognition

Equipped with Neuromeka's proprietary CORE technology

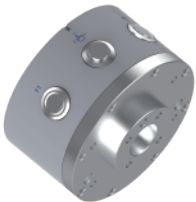


J1: 360°

Workspace: 630 mm

Reach 940 mm

Optional Item



Direct teaching



Optional item: Magnetic base

Detailed Specifications

Payload	3 kg
Reach(Maximum)	940 mm
Weight	10.9 kg
Repeatability	0.1 mm
DOF	6(all revolute)
IP Rating	IP54
Workspace	630 mm
Maximum Tool Speed	1 m/s
Joint Motion Range	J1: ±360 deg, J2: ±180 deg, J3: ±162 deg, J4: ±360 deg, J5: ±140 deg, J6: ±360 deg
Maximum Joint Speed	J1, J2, J3: 175 deg/s, J4, J5, J6: 225 deg/s



OPTi5

34 kg

Weight

5 kg

Payload

1,350 mm

Reach

IP54

IP Rating

High-precision work capability

Maintains stable operation to accurately perform high-difficulty tasks. Supports consistent quality even during repetitive operations.

Industrial-grade durability

A special coating is applied to withstand harsh industrial environments, improving resistance to contamination and discoloration.

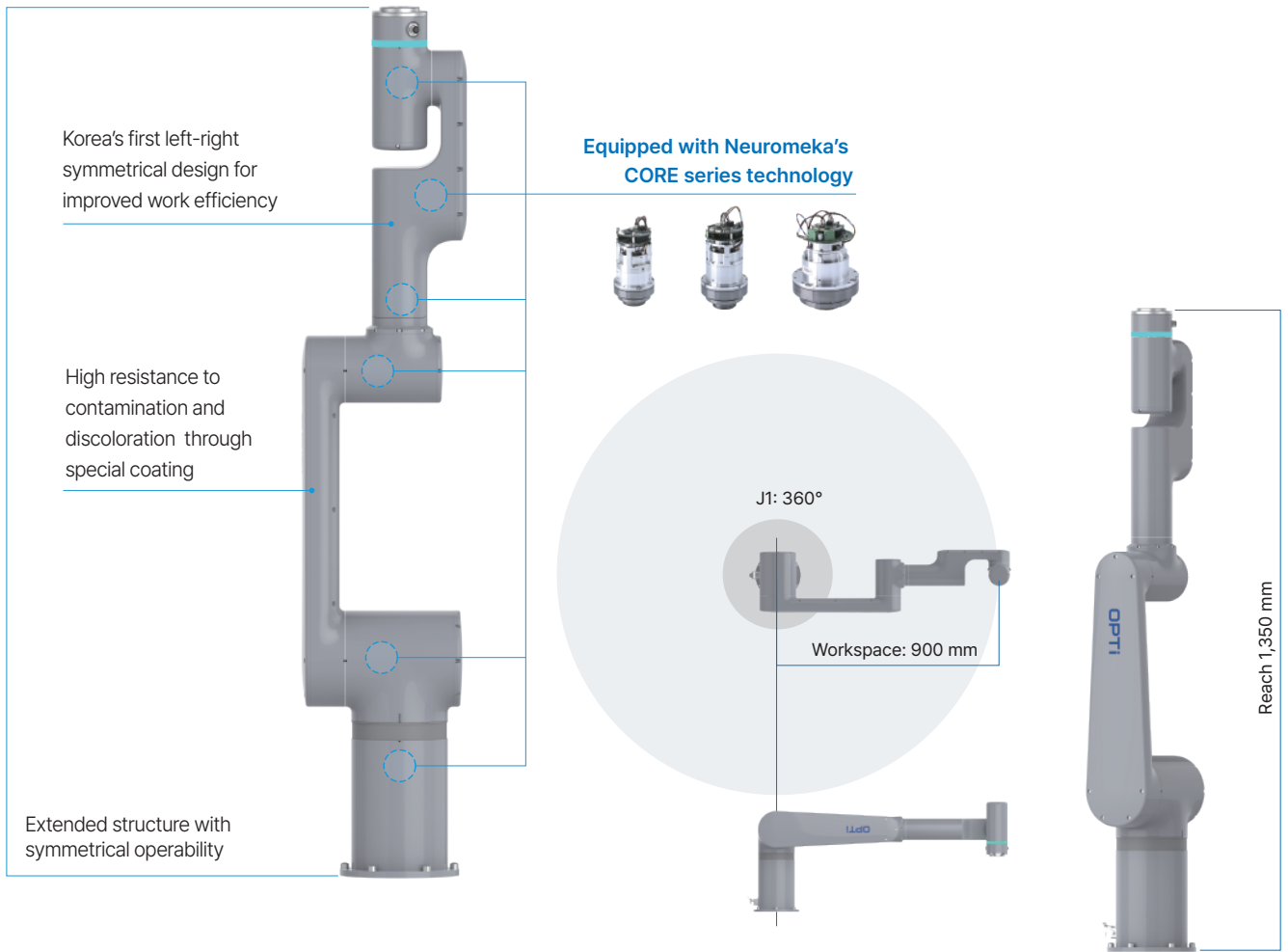
Symmetrical structure and flexibility

Korea's first left-right symmetrical design supports flexible operation without unnecessary movements, even in narrow, interference-heavy environments.

Easy installation and direct teaching

Workers can manually move the robot to easily and quickly create work paths.





Detailed Specifications

Payload	5 kg
Reach(Maximum)	1,350 mm
Weight	34 kg
Repeatability	0.1 mm
DOF	6(all revolute)
IP Rating	IP54
Workspace	900 mm
Maximum Tool Speed	1 m/s
Joint Motion Range	J1: ±360 deg, J2: ±160 deg, J3: ±160 deg, J4: ±360 deg, J5: ±180 deg, J6: ±360 deg
Maximum Joint Speed	1, 2, 3: 150 deg/s 4, 5, 6: 180 deg/s



OPTi Series

"OPTi" is Neuromeka's collaborative robot series, offered in two models based on payload capacity: OPTi3 and OPTi5. Key features include a compact form factor, symmetrical structure, and high mobility. The optimized design for narrow workspaces and left-right symmetrical operation minimizes motion paths and improves efficiency.

OPTi3 features an ultra-lightweight design with a total weight of 10.9 kg and an ergonomic handle, allowing workers to easily carry and reposition the robot. A special coating suitable for various process environments minimizes contamination and discoloration, while the end tool flange supports options for easy tool attachment and detachment. The OPTi series maximizes quality and productivity by optimizing both design and functionality for real-world work environments.

Wide & Agile Collaborative Robot 'OPTi'

- One of the lightest collaborative robots in Korea, allowing easy transportation and installation
- Maintains high rigidity and durability despite its lightweight design, making it suitable for high-precision tasks
- Delivers stable performance even in demanding industrial environments such as welding

Direct Teaching & Easy Programming

- Supports both direct teaching and intuitive programming, allowing for easy operation even for users with no programming experience.
- Operators can manually guide the robot to quickly set start points, end points, and paths
- Significantly reduces setup time during process changes, making it ideal for multi-product production
- Directly applicable to 3 kg-class manipulator control research (e.g., hand-guiding)
- Suitable for R&D applications such as algorithm development, robot control, and AI vision integration

Collision Detection & Safety

- Equipped with a proprietary collision detection algorithm for immediate response to unexpected situation
- Designed with worker safety as the top priority
- Safety performance verified across Neuromeka's collaborative robot lineup

Advanced Efficiency

- Maximizes placement efficiency by minimizing motion paths even in confined spaces
- When applied to welding, the 2F-3F arc sensor function delivers optimal performance across a wide range of welding conditions



Neuromeka Parts(Smart Actuator)

The smart actuator used in OPTi3 achieves high performance and lightweight design through the integration of a motor and harmonic reducer (ND-20). As the reducer product lineup expands, the integrated actuator lineup will continue to grow, with new specifications and OEM supply available based on customer requirements.

Neuromeka proprietary CORE motor technology

**CORE integration for OPTi3
Frameless motor design**



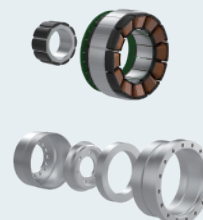
Applied to OPTi3
Axis 3

neuromeka



Applied to OPTi3
Axes 1 and 2

neuromeka



Control Box & IndyKey

NC15

Neuromeka's control box integrates the controller, power supply, safety devices, I/O, and communication functions into a single system. It comes with the IndyKey, which combines an emergency stop button with program control buttons in a remote-control format, enhancing safety and convenience. The control box is also equipped with features that allow flexible installation and protection in a variety of environments, improving on-site usability.



► IndyKey



▲ Cradle

- sold separately



Control Box Specifications

Size		420 mm x 290 mm x 244 mm
Weight		10 kg
Input Power	Voltage	100-240 Va.c
	Current	13A MAX
	Frequency	50/ 60 Hz
Input	Power Fuse	20 A
Output Power	Voltage	48 Vd.c, 24 Vd.c
	Current	Rated 20 A (48 Vd.c, 110 Va.c input) / 25 A (48 Vd.c, 240 Va.c input)
	Frequency	50/ 60 Hz

I/O	I/O Output	Digital: Max 24 V(PNP) / 0.75 A, Analog: 0 - 10 V
	I/O Channels	Digital(PNP): DI(16)/DO(16), Analog: AI(2)/AO(2)
	Safety IO	Digital(PNP): DI(4)/DO(4)
	I/O Power Supply	Max 24 V / 3 A
Communication	Protocols	EtherNET, EtherCAT, TCP/IP, Modbus TCP, USB3.0
Cable Configuration	Cable	IndyKey: 3 M
		Robot Cable: 5 M
Operating Environment	Operating Temperature	0 °C to + 50 °C
	Storage Temperature	0 °C to + 50 °C
	Humidity	10 to 90 %(Non-condensing, operating)

Application Fields



Welding



Press



Screwing



Palletizing



Deburring/Sanding



Pick&Place

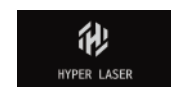


Inspection



Machine Tending

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OPTi

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