Allied Automation

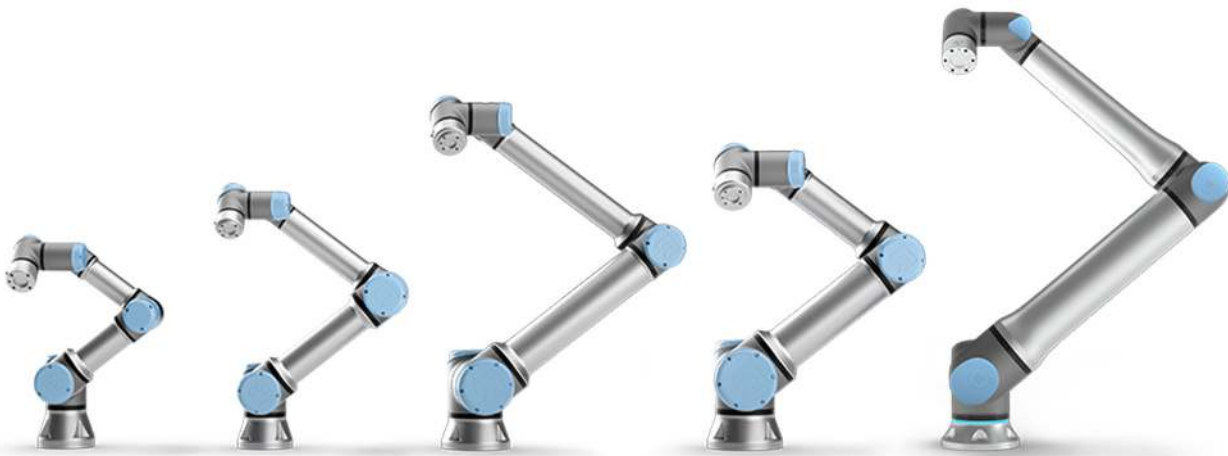# UNIVERSAL ROBOTS

The UR Cobots are packed with truly amazing benefits.

1. Intitive programming
2. Fast set up
3. Flexible deployment
4. Collaborative and safe cobots
5. Fastest payback in the Robot Industry

1 Quick payback:
UR cobots routinely deliver payback within a year.
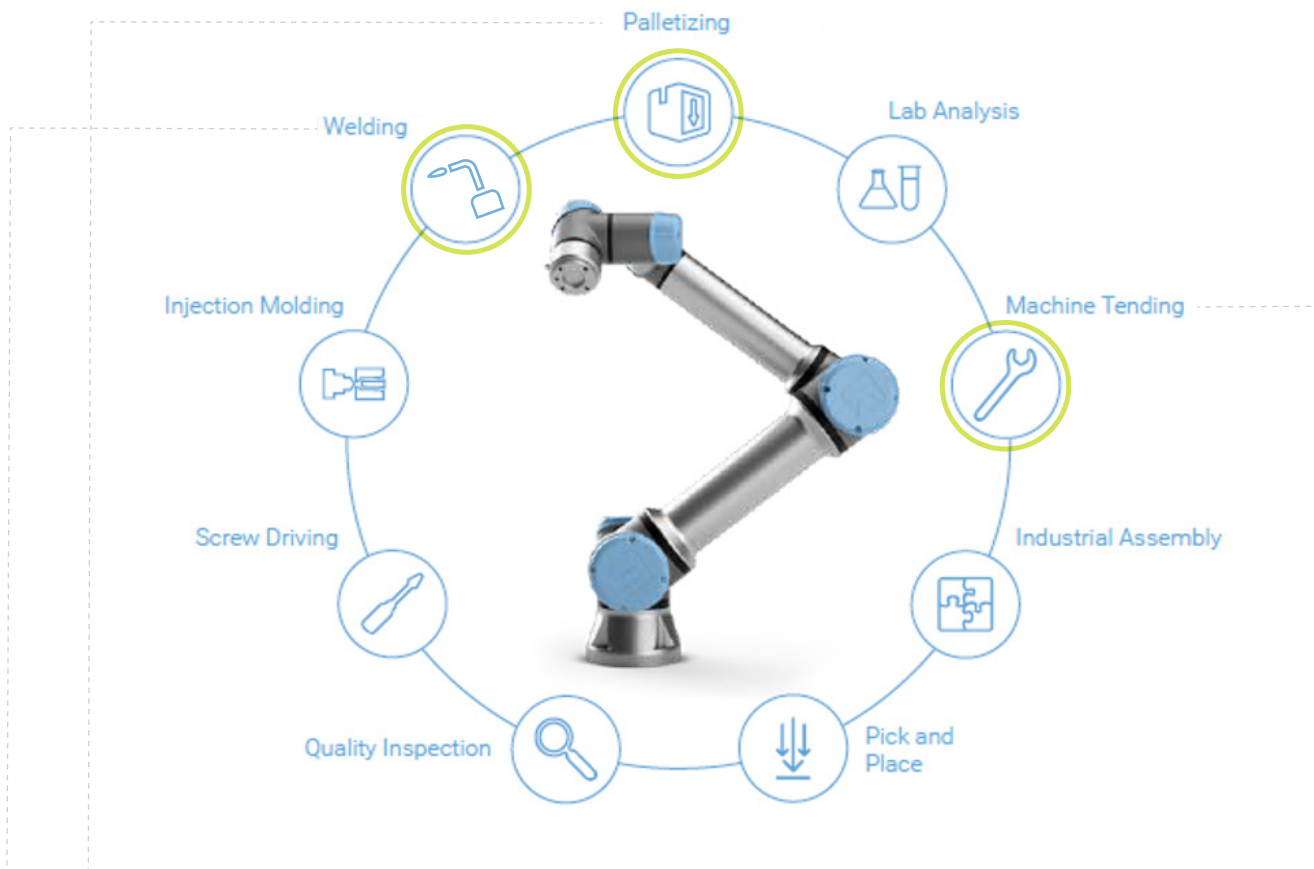
HUMAN-ROBOT COLLABORATION IS 85% MORE PRODUCTIVE

than humans or robots alone

Source: MIT research data on financial Times article "Meet the cobots: humans and robots together on the factory floor"

They free people up to do what they're good at: creating, collaborating, and doing something amazing.

Collaborative robots, or cobots, expand capacity for businesses of all sizes. They can change the way employees work; integrate seamlessly with existing processes, layouts, and equipment; and improve quality across many applications. Collaborative automation makes the workplace safer and lets workers pursue more valuable tasks.

Applications

Palletizing

Welding

Lab Analysis

Injection Molding

Machine Tending

Screw Driving

Industrial Assembly

Quality Inspection

Pick and Place

Welding

Empower your welders while maintaining consistent, high weld quality and improving workplace safety.

Palletizing

Protect your people from repetitive work while optimizing end-of-line with payback on investment in less than a year.

Machine Tending

Improve work safety for your machine tending people while saving cost and increasing productivity.

Industries

- **Automotive and Subcontractors**
- **Food and Agriculture**
- **Furniture and Equipment**

- **Electronics and Technology**
- **Metal and Machining**
- **Plastic and Polymers**

- **Pharma and Chemistry**
- **Scientific and Research**
- **Your Industry?**

Universal Robots' three tiers of Service Offerings, UR CARE, UR INSIGHT, and UR PERFORMANCE, are tailored to your needs.

UR Care

Get a successful deployment, an easy-to-use portal, and e-learning to keep your business on track. This service is included with every cobot purchase.

UR Insight

Universal Robots ensures you have sufficient insight from the cobot to drive the right decisions. Achieve understanding by collecting and analyzing data about your cobot.

UR Performance

A service that will help you to optimize performance of your cobot and build your confidence in a product that just works. Leverage cobot expertise and consultation to optimize configurations, productivity and performance.

UR Care	UR Insight	UR Performance
✓ UR Academy e-Learning	✓ UR Academy e-Learning	✓ UR Academy e-Learning
✓ Ticket Management via myUR	✓ Ticket Management via myUR	✓ Ticket Management via myUR
○ myUr Monitoring Dashboard	✓ myUr Monitoring Dashboard	✓ myUr Monitoring Dashboard
○ Notifications	✓ Notifications	✓ Notifications
○ Log report	✓ Log report	✓ Log report
○ Annual Cobot Performance Check	○ Annual Cobot Performance Check	✓ Annual Cobot Performance Check
○ Expert recommendations and advice	○ Expert recommendations and advice	✓ Expert recommendations and advice
○ Covered under warranty	○ Covered under warranty	✓ Covered under warranty

UR INSIGHT includes everything in UR CARE and introduces the ability to connect the robot for visibility and analysis of daily activities.

myUR Monitoring Dashboard

· Track cycle times and cycle counts in real-time from a smart device

· Monitor multiple robots' workcells on one dashboard and access the dashboard from any networked computer

Notifications

· Receive notifications for robot stops, alarms, and application-specific events while at the office or on the road

Log Report

· Diagnose production inefficiencies and gain a deeper understanding of your productivity through exportable/downloadable log reports.

UR PERFORMANCE includes everything in UR INSIGHT, adding an annual performance check conducted by an automation expert and the ability to extend your warranty.

Annual Cobot Performance Check

· Ensures the cobot configuration is set up correctly

· Areas of risk, potential wear, and possible efficiencies are all highlighted

Expert Advice

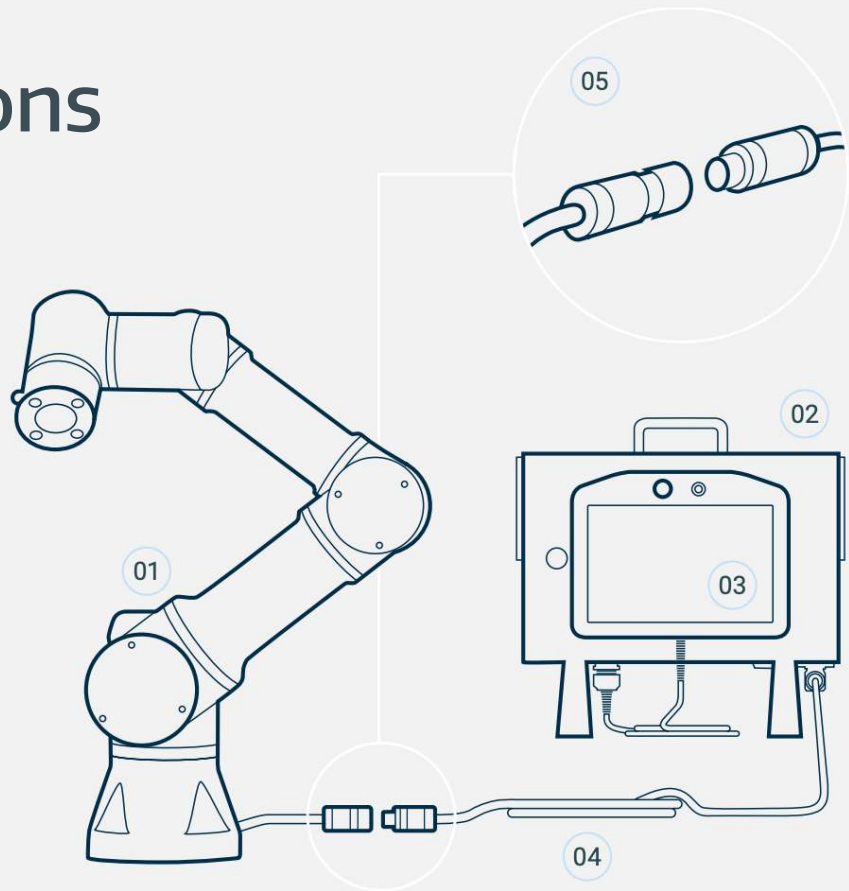· High-level personalized expert recommendations

Covered Under Warranty

· Option to extend the warranty of the robot up to 36 months.

· Extended warranty requires the Annual Cobot Performance

· Check be conducted annually

System specifications

Unboxing your UR cobot:

01   Robot arm

02   Control box

03   Teach pendant

04   Cable (available in 4 options)

05   Base flange connector

Every e-Series purchase includes a 6 m standard cable and a base flange connector that enables through-side and throughhole mounting for your robot.

The cable suite offers variants available for separate purchase that simplify the deployment of many common applications, like extending your range with a 12 m version of the standard cable. Also available is the High-Flex cable, designed to withstand more extensive and repeated bending. Making the right selection from the cable suite helps manufacturers tend multiple machines, weld larger workpieces, and in-crease pallet height with ease

Cable suite

Specification	Standard*	Standard Extended**
Material	PVC	PVC
Color	Black	Black
Length	6 m (19.7 ft)	12 m (39.4 ft)
Diameter (d)	12.1 mm (0.48 in)	12.1 mm (0.48 in)

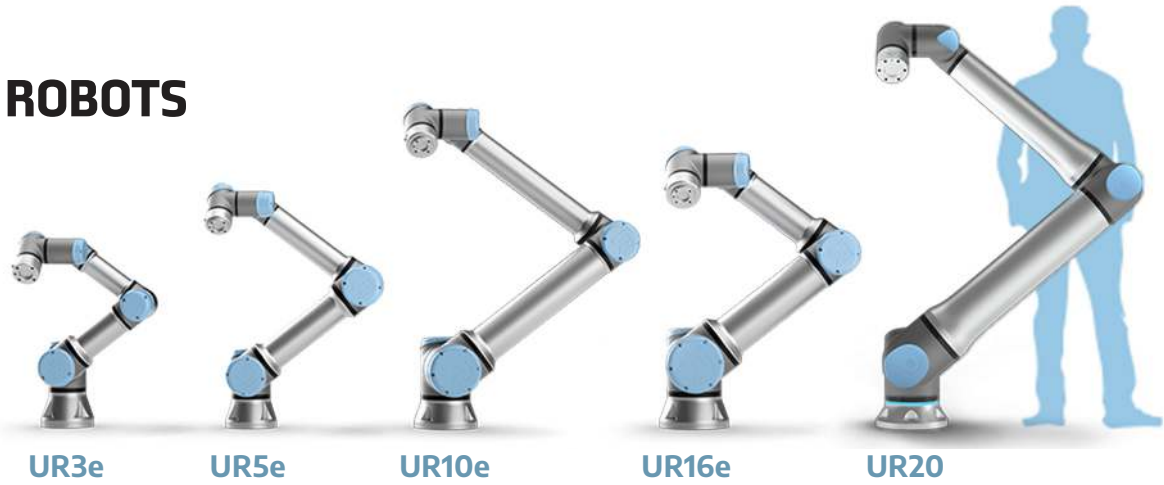| Specification	High-Flex**	High-Flex Extended**
Material	PUR	PUR
Color	Blue	Blue
Length	6 m (19.7 ft)	12 m (39.4 ft)
Diameter (d)	13.4 mm (0.53 in)	13.4 mm (0.53 in)
Bend Radius	4 x d (static) 8 x d (dynamic)	4 x d (static) 8 x d (dynamic)
Bend Cycle	5 million	5 million

*   Included with robot purchase
** Separately sold accessory

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Robot arm
Technical specification

	UR3e	UR5e	UR10e	UR16e	UR20

Specification

	UR3e	UR5e	UR10e	UR16e	UR20
Payload at full CoG offset and in the entire workspace	3 kg (6.6 lbs)	5 kg (11 lbs)	12.5 kg (27.5 lbs)	16 kg (35.3 lbs)	20 kg (44.1 lbs)
Reach	500 mm (19.7 in)	850 mm (33.5 in)	1300 mm (51.2 in)	900 mm (35.4 in)	1750 mm (68.9 in)
Degrees of freedom	< 6 rotating joints >			< 6 rotating joints >	
Programming	< 12 inch touchscreen with PolyScope graphical user interface >				

Performance

	UR3e	UR5e	UR10e	UR16e	UR20
Power consumption Maximum power	300 W	570 W	615 W	585 W	750 W
Moderate operating settings	100 W	200 W	350 W	350 W	500 W
Safety	<17 configurable safety functions >			<17 configurable safety functions >	
Certifications	< EN ISO 13849-1, PLd category 3, EN ISO 10218-1 >			< EN ISO 13849-1, PLd category 3, EN ISO 10218-1 >	

Force sensing, tool flange	Force, x-y-z	Torque, x-y-z	Force, x-y-z	Torque, x-y-z	Force, x-y-z	Torque, x-y-z	Force, x-y-z	Torque, x-y-z	Force, x-y-z	Torque, x-y-z
Range	30.0 N	10.0 Nm	50.0 N	10.0 Nm	100.0 N	10.0 Nm	160.0 N	10.0 Nm	200 N	20.0 Nm
Precision	2.0 N	0.1 Nm	3.5 N	0.2 Nm	5.0 N	0.2 Nm	5.0 N	0.2 Nm	5.5 N	0.2 Nm
Accuracy	3.5 N	0.1 Nm	4.0 N	0.3 Nm	5.5 N	0.5 Nm	5.5 N	0.5 Nm	10 N	1 Nm

Movement

	UR3e	UR5e	UR10e	UR16e	UR20
Pose repeatability per ISO 9283	± 0.03 mm	± 0.03 mm	± 0.05 mm	± 0.05 mm	± 0.05 mm

Axis Movement	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Base	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s	± 360°	± 120°/s
Shoulder	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s	± 360°	± 120°/s
Elbow	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 150°/s
Wrist 1	± 360°	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 210°/s
Wrist 2	± 360°	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 210°/s
Wrist 3	Infinite	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 210°/s

Features

	UR3e	UR5e	UR10e	UR16e	UR20
IP Classification	IP54	IP54	IP54	IP54	IP54
ISO 14644-1 class cleanroom	5	5	5	5	5
Noise	> 60 dB (A)	> 65 dB (A)	> 65 dB (A)	> 65 dB (A)	> 65 dB (A)
Robot mounting	Any Orientation	Any Orientation	Any Orientation	Any Orientation	Any Orientation
I/O Ports Digital in	2	2	2	2	2
Digital out	2	2	2	2	2
Analog in	2	2	2	2	2
Tool I/O power supply voltage	12/24 V	12/24 V	12/24 V	12/24 V	12/24 V
Tool I/O power supply	600 mA	1.5 A (Dual pin) 1 A (Single pin)	1.5 A (Dual pin) 1 A (Single pin)	2 A (Dual pin) 1 A (Single pin)	2 A (Dual pin) 1 A (Single pin)

Physical

	UR3e	UR5e	UR10e	UR16e	UR20
Footprint	Ø 128 mm	Ø 149 mm	Ø 190 mm	Ø 190mm	Ø 245 mm
Materials	< Aluminum, Plastic, Steel >		< Aluminum, Plastic, Steel >		
Tool flange connector type	< M8 | M8 8-pin (male), EN ISO-9409-1-50-4-M6 >		< M8 | M8 8-pin (male), EN ISO-9409-1-50-4-M6 >		M8 | M8 8-pin (female) EN ISO-9409-1-80-6-M8
Cable length (robot arm)	< 6 m (236 in) >		< 6 m (236 in) >		
Weight including cable	11.2 kg (24.7 lbs)	20.6 kg (45.4 lbs)	33.5 kg (73.9 lbs)	33.1 kg (73 lbs)	64 kg (141.1 lbs)
Operating temperature range	< 0-50 °C (32-122 °F) >		< 0-50 °C (32-122 °F) >		
Humidity	< 90%RH (non-condensing) >		< 90%RH (non-condensing) >		

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Control box and teach pendant
Technical specification

Control box

	CB 5.2	CB 5.5*	OEM 5.2	OEM 5.5*
Features				
Robot types	UR3e, UR5e, UR10e, UR16e	UR3e, UR5e, UR10e, UR16e, UR20	UR3e, UR5e, UR10e, UR16e	UR3e, UR5e, UR10e, UR16e, UR20
Software compatibility	PolyScope 5 and below	All PolyScope versions	PolyScope 5 and below	All PolyScope versions
IP classification	IP44	IP44	IP20	IP20
ISO 14644-1 class cleanroom	6	6	6	6
Operating temperature range	0-50 °C (32-122 °F)	0-50 °C (32-122 °F)	0-50 °C (32-122 °F)	0-50 °C (32-122 °F)
I/O Ports				
Digital In	16	16	16	16
Digital Out	16	16	16	16
Analog In	2	2	2	2
Analog Out	2	2	2	2
Quadrature Digital Inputs	4	4	4	4
I/O power supply	24V, 2A	24V, 2A	24V, 2A	24V, 2A
Communication	Modbus TCP PROFINET Ethernet/IP USB 2.0, USB 3.0	Modbus TCP PROFINET Ethernet/IP USB 2.0, USB 3.0	Modbus TCP PROFINET Ethernet/IP USB 2.0, USB 3.0	Modbus TCP PROFINET Ethernet/IP USB 2.0, USB 3.0
RAM	2 GB	4 GB	2 GB	4 GB
Power Source	100-240 VAC, 47-440 Hz	100-240 VAC, 47-440 Hz	AC model: 100-240 VAC, 47-440 Hz DC model: 24 - 48 VDC	AC model: 100-240 VAC, 47-440 Hz DC model: 24 - 48 VDC
Physical				
Control box size (W x H x D)	460 mm x 449 mm x 254mm (18.2 in x 17.6 in x 10 in)	460 mm x 449 mm x 254 mm (18.2 in x 17.6 in x 10 in)	451 mm x 168 mm x 150 mm (17.6 in x 6.6 in x 5.9 in)	451 mm x 168 mm x 150 mm (17.6 in x 6.6 in x 5.9 in)
Weight	12 kg (26.5 lbs)	12 kg (26.5 lbs)	AC model: 4.7 kg (10.4 lbs) DC model: 4.3 kg (9.5 lbs)	AC model: 4.7 kg (10.4 lbs) DC model: 4.3 kg (9.5 lbs)
Power supply output	UR3e: 600 W UR5e, UR10e, UR16e: 1500 W	UR3e: 600 W UR5e, UR10e, UR16e, UR20: 1500 W	UR3e: 600 W UR5e, UR10e, UR16e: 1500 W	UR3e: 600 W UR5e, UR10e, UR16e, UR20: 1500 W
Materials	Powdered coated steel	Powdered coated stee	Aluminium	Aluminium
Humidity	90 %RH (non-condensing)	90 %RH (non-condensing)	90 %RH (non-condensing)	90 %RH (non-condensing)

Teach pendant

	Standard	3PE
Features		
Robot types	e-Series (standard)	e-Series (optional), UR20 (standard)
IP classification	IP54	IP54
Incl. in certifications	EN ISO 10218-1 EN ISO 13849-1	EN ISO 10218-1 EN ISO 13849-1
Humidity	90 %RH (non-condensing)	90 %RH (non-condensing)
Display resolution	1280 x 800 pixels	1280 x 800 pixels
Freedrive	1 button	2 buttons to support for right and left handed operation
Physical		
Materials	Plastic (PC/ASA)	Plastic (PC/ASA)
Teach pendant size	300 mm x 231 mm x 50 mm (11.8 in x 9.1 in x 1.97 in)	300 mm x 231 mm x 50 mm (11.8 in x 9.1 in x 1.97 in)
Weight (inclding 1 m TP cable)	1.6 kg (3.5 lbs)	1.8 kg (3.961 lbs)
Cable length (Teach pendant)	4.5 m (177.17 in)	4.5 m (177.17 in)