UNIVERSAL ROBOTS

e-Series
Robot arm specification

	UR3e	UR7e	UR12e	UR16e
Payload	3 kg (6.6 lbs)	7.5 kg (16 lbs)	12.5 kg (27.5 lbs)	16 kg (35.3 lbs)
Reach	500 mm (19.7 in)	850 mm (33.5 in)	1300 mm (51.2 in)	900 mm (35.4 in)
Degrees of freedom	6 rotating joints			
Programming	12 inch touchscreen with PolyScope graphical user interface			
Power consumption (average)				
Maximum power	300 W	570 W	615 W	585 W
Moderate operating settings	150 W	250 W	350 W	350 W
Operating temperature range	Ambient temperature: 0-50 °C (32-122 °F)			
Safety functions	17 configurable safety functions			
In compliance with	EN ISO 13849-1 (PLd category 3) and EN ISO 10218-1			

Performance

Force sensing, tool flange/ torque sensor	**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
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
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

Movement

Maximum TCP speed	3 m/s		4 m/s		4 m/s		3 m/s	
Pose Repeatability per ISO 9283	± 0.03 mm		± 0.03 mm		± 0.05 mm		± 0.05 mm	
Axis movement	**Working range**	**Medium speed**	**Working range**	**Medium speed**	**Working range**	**Medium speed**	**Working range**	**Medium speed**
Base	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s
Shoulder	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s
Elbow	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s
Wrist 1	± 360°	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s
Wrist 2	± 360°	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s
Wrist 3	Infinite	± 360°/s	± 360°	± 180°/s	± 360°	± 180°/s	± 360°	± 180°/s

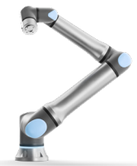
Features

IP Classification	IP54			
Noise	< 60 dB(A)	< 65 dB(A)	< 65 dB(A)	< 65 dB(A)
Arm mounting	Any orientation			
I/O Ports				
Digital In	2	2	2	2
Digital Out	2	2	2	2
Analog In	2	2	2	2
Tool I/O power supply voltage	12/24V			
Tool I/O power supply	600 mA	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

Footprint	Ø128 mm	Ø151 mm	Ø190 mm	Ø190 mm
Materials	Aluminium, plastic, steel			
Tool flange interface	M8 8-pin female, EN ISO-9409-1-50-4-M6			
Connector type	M8 8-pin female			
Cable length (robot arm)	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)
Humidity	≤ 90% RH (non-condensing)			

UR Series
Robot arm specification



	UR15	UR20	UR30
Payload	15 kg (33.1 lbs) 17.5 kg (38.58 lbs) with boundary conditions according to manual	20 kg (44.1 lbs) 25 kg (55.1 lbs) with boundary conditions according to manual	30 kg (66.1 lbs) 35 kg (77.1 lbs) with boundary conditions according to manual
Reach	1300 mm (51.18 in)	1750 mm (68.9 in)	1300 mm (51.18 in)
Degrees of freedom	6 rotating joints		
Programming	12 inch touchscreen with PolyScope graphical user interface		
Power consumption (average)			
Maximum power	550 W	750 W	750 W
Moderate operating settings	350 W	500 W	300 W
Operating temperature range	Ambient temperature: 0-50 °C (32-122 °F)		
Safety functions	17 configurable safety functions		
In compliance with	EN ISO 13849-1 (PLd category 3), EN ISO 10218-1 and UL 1740		

Performance

Force sensing, tool flange/torque sensor	**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	± 150.0 N	± 10.0 Nm	± 200.0 N	± 20.0 Nm	± 200.0 N	± 20.0 Nm
Precision	± 7.5 N	± 0.2 Nm	± 5.5 N	± 0.2 Nm	± 5.5 N	± 0.2 Nm
Accuracy	± 8.3 N	± 0.5 Nm	± 0.1 N	± 1.0 Nm	± 0.1 N	± 1.0 Nm

Movement

Maximum TCP speed	5 m/s		5 m/s		4 m/s	
Pose Repeatability per ISO 9283	± 0.05 mm		± 0.1 mm		± 0.1 mm	
Axis movement	**Working range**	**Medium speed**	**Working range**	**Medium speed**	**Working range**	**Medium speed**
Base	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s
Shoulder	± 360°	± 180°/s	± 360°	± 120°/s	± 360°	± 120°/s
Elbow	± 360°	± 240°/s	± 360°	± 150°/s	± 360°	± 150°/s
Wrist 1	± 360°	± 300°/s	± 360°	± 210°/s	± 360°	± 210°/s
Wrist 2	± 360°	± 300°/s	± 360°	± 210°/s	± 360°	± 210°/s
Wrist 3	± 360°	± 300°/s	± 360°	± 210°/s	± 360°	± 210°/s

Features

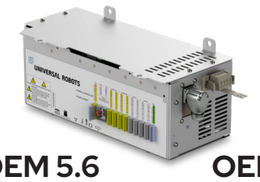
IP Classification	IP65	IP65	IP65
Cleanroom classification ISO 14644-1	-	Class 4 at ≤ 80%*	Class 4 at ≤ 80%*
Noise	< 67 dB(A)	< 65 dB(A)	< 65 dB(A)
Status identification	Light ring at robot base		
Arm mounting	Any orientation		
I/O Ports			
Digital In	2		
Digital Out	2		
Analog In	2 or 1 RS-485		
Tool I/O power supply voltage	12/24 V		
Tool I/O power supply	2 A (Dual pin), 1 A (Single pin)		

Physical

Footprint	Ø204 mm	Ø245 mm	Ø245 mm
Materials	Aluminium, plastic, steel		
Tool flange interface	ISO 9409-1-50-4-M6	EN ISO-9409-1-80-6-M8	EN ISO-9409-1-80-6-M8
Connector type	M8 8-pin female		
Cable length (robot arm)	6 m (236 in)		
Weight including cable	40.7 kg (89.73 lbs)	64 kg (141.1 lbs)	63.5 kg (139.9 lbs)
Humidity	≤ 90% RH (non-condensing)		

*Velocity and payload

Control Box specification



	CB 5.6	CB 5.5	OEM 5.6	OEM 5.5
Features				
Robot types	e-Series, UR Series		e-Series, UR Series	
Software compatibility	PolyScope X	PolyScope 5	PolyScope X	PolyScope 5
IP Classification	IP44		IP20	
Cleanroom classification ISO 14644-1	6		6	
Operating temperature range	0-50 °C (32-122 °F)		0-50 °C (32-122 °F)	
I/O Ports				
Digital In	16		16	
Digital Out	16		16	
Analog In	2		2	
Analog Out	2		2	
Quadrature Digital inputs	4		4	
I/O Power supply	24V, 2A		24V, 2A	
Industrial protocols	Modbus TCP (Client/Server) Ethernet/IP Adapter PROFINET device/PROFIsafe ROS/ROS2		Modbus TCP (Client/Server) Ethernet/IP Adapter PROFINET device/PROFIsafe ROS/ROS2	
Hardware interfaces	Ethernet 1 Gb/s USB 2.0, USB 3.0 Mini DisplayPort Injection Molding Machine Interface (SPI AN-146 & Euromap-67)		Ethernet 1 Gb/s USB 2.0, USB 3.0 Mini DisplayPort Injection Molding Machine Interface (SPI AN-146 & Euromap-67)	
Physical				
Control Box size (W x H x D)	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)	
Weight	12 kg (26.5 lbs)		AC model: 4.7 kg (10.4 lbs) DC model: 4.3 kg (9.48 lbs)	
Power supply output	1500 W		1500 W	
Materials	Power coated steel		Aluminium	
Humidity	≤ 90% RH (non-condensing)		≤ 90% RH (non-condensing)	

Teach Pendant Specification

Standard

3PE

	Standard	3PE
Features		
Robot types	e-Seres (standard)	e-Series (optional), UR Series (standard)
IP Classification	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 ambidextrous operation
Physical		
Materials	Plastic (PC/ASA)	Plastic (PC/ASA)
Teach Pendant size (W x H x D)	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 (including 1 m Teach Pendant 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)

Standard robot cable

High flex robot cable

Long and short cable options

Power cable	Material	Color	Length	Diameter	Gross weight	e-Series	UR Series
700-3xx-xx	PVC	Black	6 m (236.22 in)	Country specific	0,75 kg (1.7 lbs)	●	●
Standard robot cable							
200145	PVC	Black	1 m (39.37 in)	12.1 mm (0,84 in)	0.4 kg (1 lbs)	○	○
200146	PVC	Black	2 m (78.74 in)	12.1 mm (0,84 in)	0.6 kg (1.3 lbs)	○	○
165100	PVC	Black	6 m (236.22 in)	12.1 mm (0,84 in)	2 kg (4.4 lbs)	●	–
165101	PVC	Black	12 m (472.44 in)	12.1 mm (0,84 in)	3.25 kg (7.16 lbs)	○	–
High flex robot cable							
166100	PVC	Blue	6 m (236.22 in)	13.4 mm (0.53 in)	2.3 kg (5.07 lbs)	○	–
166101	PVC	Blue	12 m (472.44 in)	13.4 mm (0.53 in)	4.5 kg (9.92 lbs)	○	–
200113	PVC	Blue	6 m (236.22 in)	14.6 mm (0.57 in)	2.3 kg (5.07 lbs)	–	●
200114	PVC	Blue	12 m (472.44 in)	14.6 mm (0.57 in)	4.5 kg (9.92 lbs)	–	○

● Standard ○ Optional – Not applicable

What's in the box?

Select the setup that fits you

Robot	**UR- Series** ☐ UR15 ☐ UR20 ☐ UR30	**e-Series** ☐ UR3e ☐ UR7e ☐ UR12e ☐ UR16e	**Solution**	☐ Standard ☐ OEM
Software	☐ PolyScope X ☐ PolyScope 5		**Teach Pendant**	☐ Standard ☐ 3PE
Control Box	☐ CB 5.6 ☐ CB 5.5 ☐ OEM 5.6 ☐ OEM 5.5		**Cable**	☐ 1 m ☐ 6 m ☐ 12 m
			UR Care Service Plan	☐ UR Care Plus ☐ UR Care Premium ☐ UR Care Customized

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