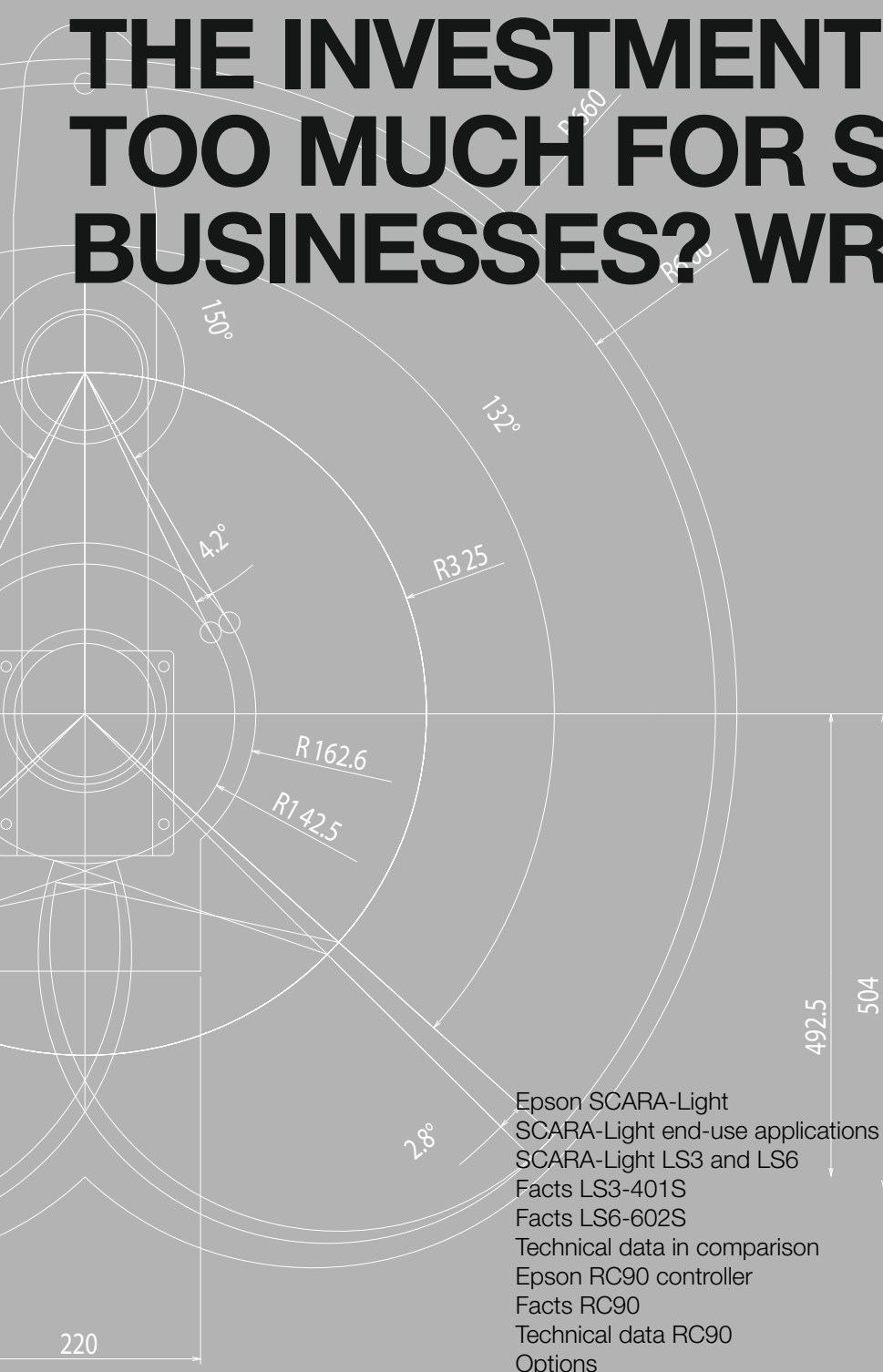


**SIMPLE.
INTELLIGENT.**



INDUSTRIAL ROBOTS ONLY PAY OFF FROM A CERTAIN SIZE PRODUCTION RUN? THE INVESTMENT IS TOO MUCH FOR SMALL BUSINESSES? WRONG.



www.epson.de/scaralight

The Epson SCARA-Light is found in regions where generally only linear systems or other less-flexible machines were previously in place. It offers you what you need. Exactly. And it is extremely flexible. Its programming and application are particularly simple. Fast and as reliable as you expect from Epson.

No more and no less. It's the Epson SCARA-Light.

Epson SCARA-Light	03	Software tools	14
SCARA-Light end-use applications	04	SCARA-Light scope of supply	15
SCARA-Light LS3 and LS6	05	RC+ Simulator	16
Facts LS3-401S	06	Compact Vision image processing	17
Facts LS6-602S	07	Facts iCube Cameras	18
Technical data in comparison	08	Facts CV1	19
Epson RC90 controller	09	Technical data Compact Vision	20
Facts RC90	10	About Epson	21
Technical data RC90	11	Products	22
Options	12	Service & Support	23
Development environment RC+ 5.0	13	Contact	24

AS POWERFUL AS YOU NEED. AS AFFORDABLE AS YOU HAVE WANTED.

- More flexible than linear systems
- Simple to program
- Powerful
Epson RC90 controller
- Simulation software included free
- Reliable and durable
- Versatile



SCARA-Light LS3-401S



SCARA-Light LS6-602S

SO MANY POSSIBILITIES ...

The new Epson LS3 and LS6 pay off especially quickly in applications such as assembling, fitting, transporting and other typical pick & place operations.

For production of medicines and laboratory diagnoses or for the semiconductor industry, both SCARA-Light robots are available in cleanroom class ISO4.

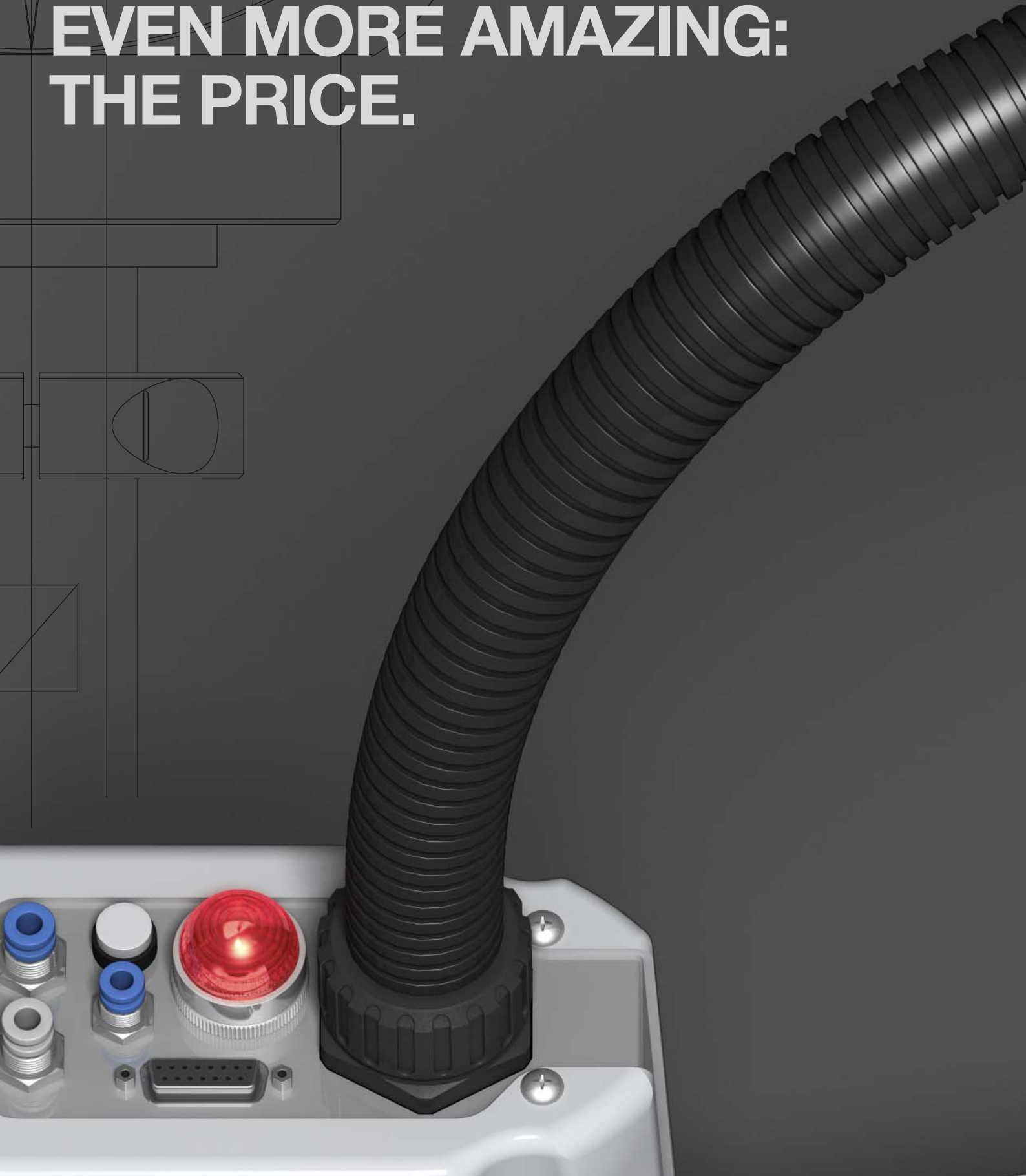
SCARA-Light LS3-401C



SCARA-Light LS6-602C



**EXTREMELY COMPACT.
UNBELIEVABLY FAST.
EVEN MORE AMAZING:
THE PRICE.**



SCARA-LIGHT LS3-401S

FACTS / PRICE

06

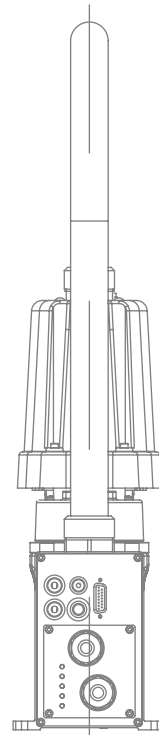
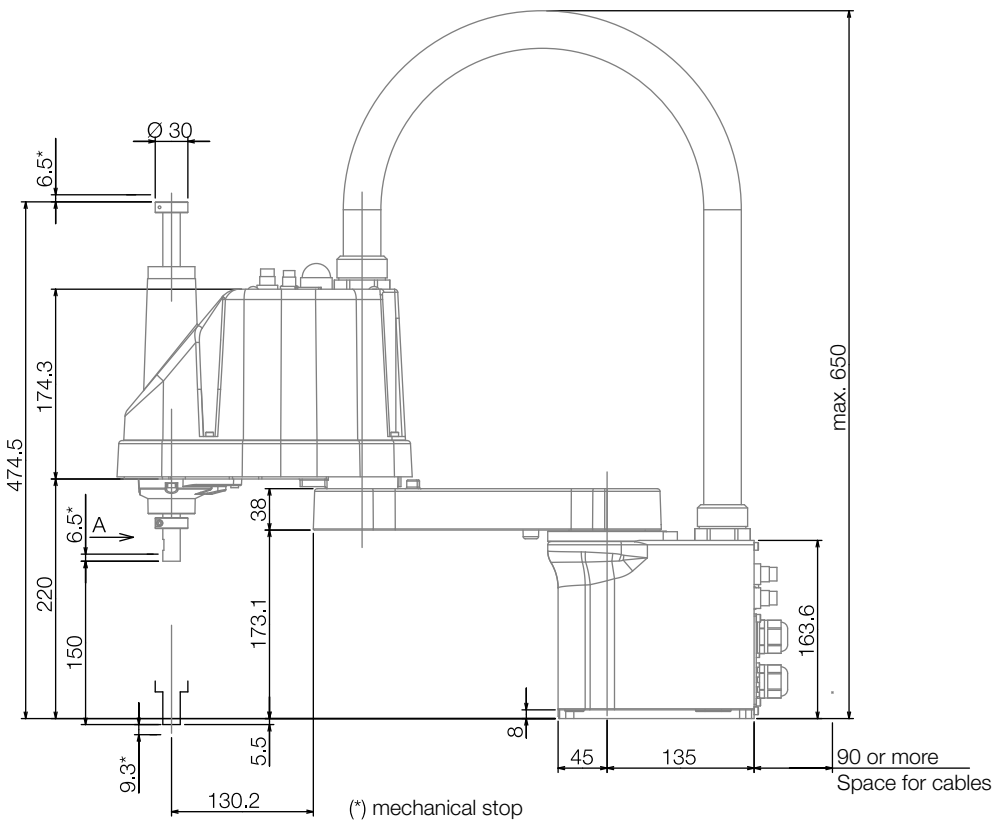
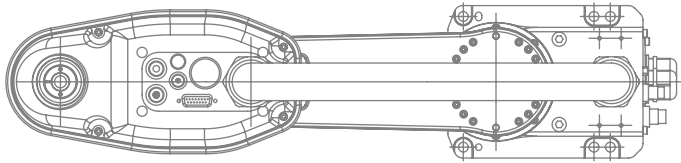
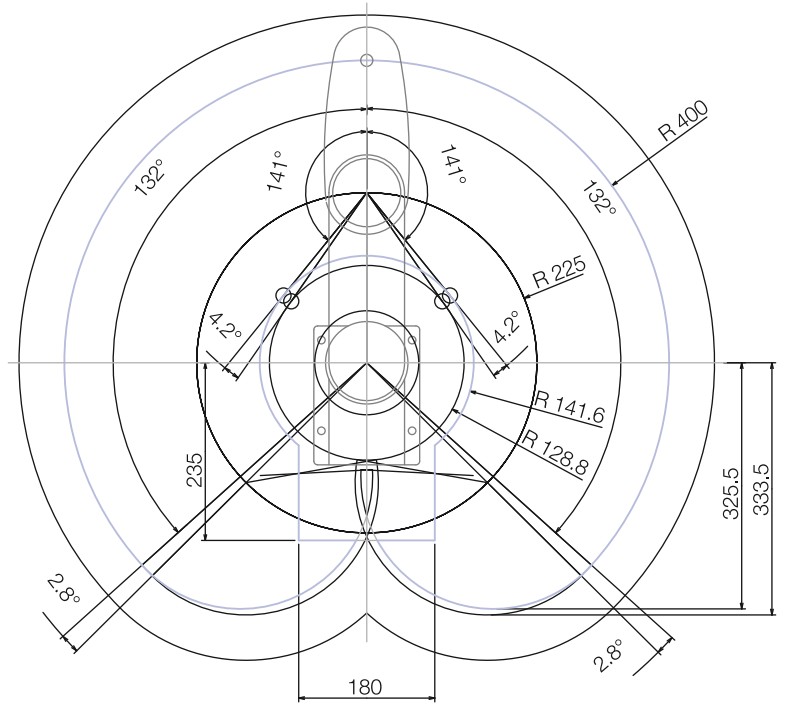
Payload 3 kg
Reach 400 mm
Z-Hub 150 mm / 120 mm (cleanroom version)

from **EUR 10,000**
 excluding sales tax

www.epson-store.de/fa

All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm



SCARA-LIGHT LS6-602S

FACTS / PRICE

07

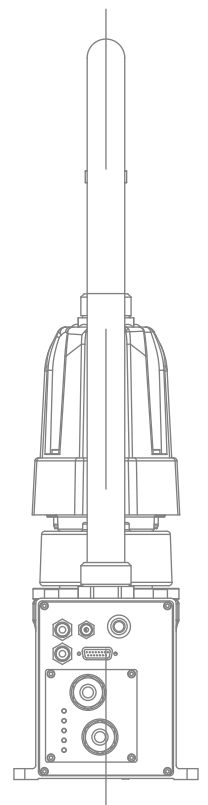
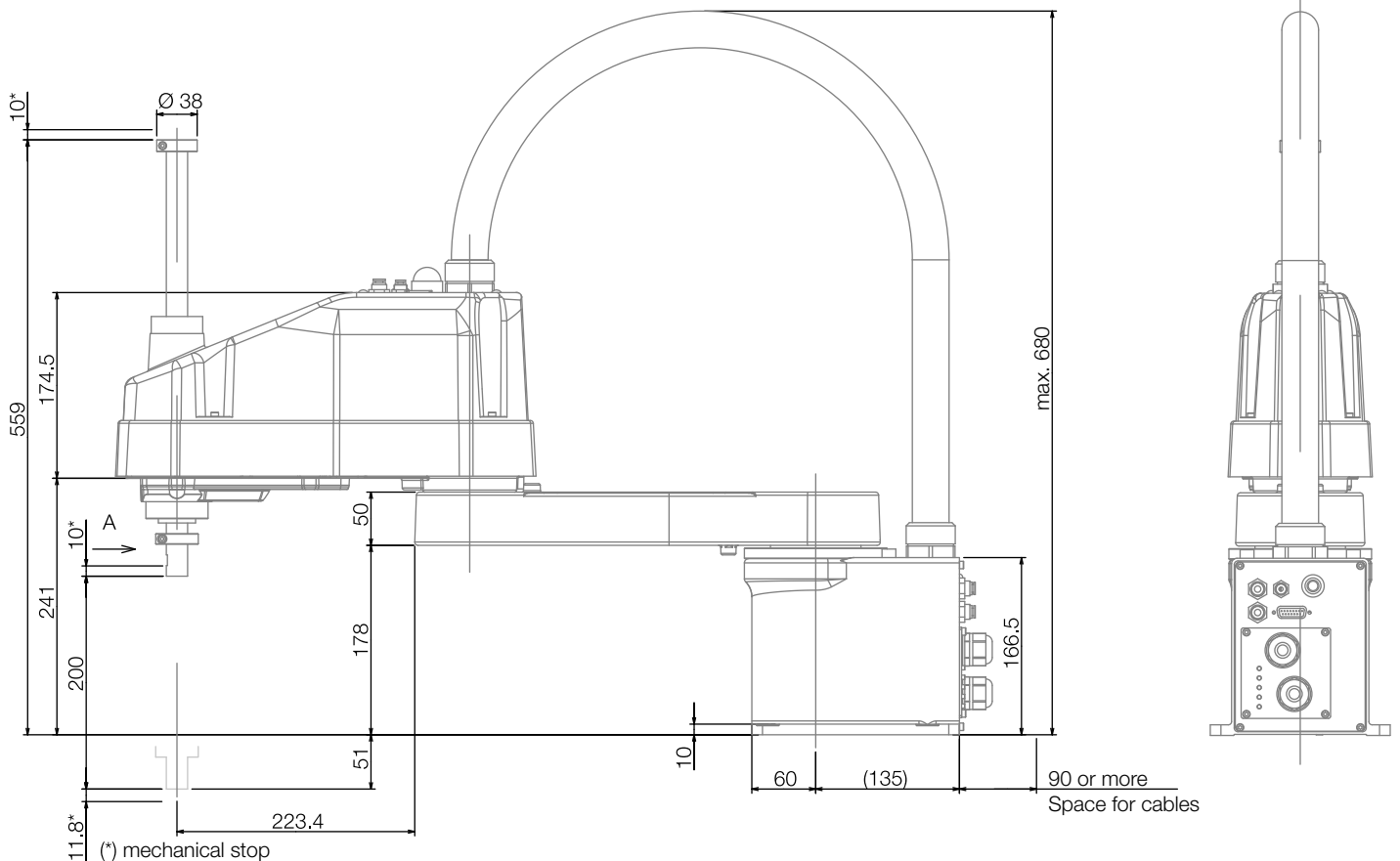
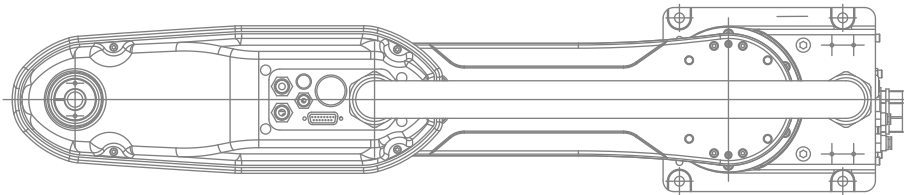
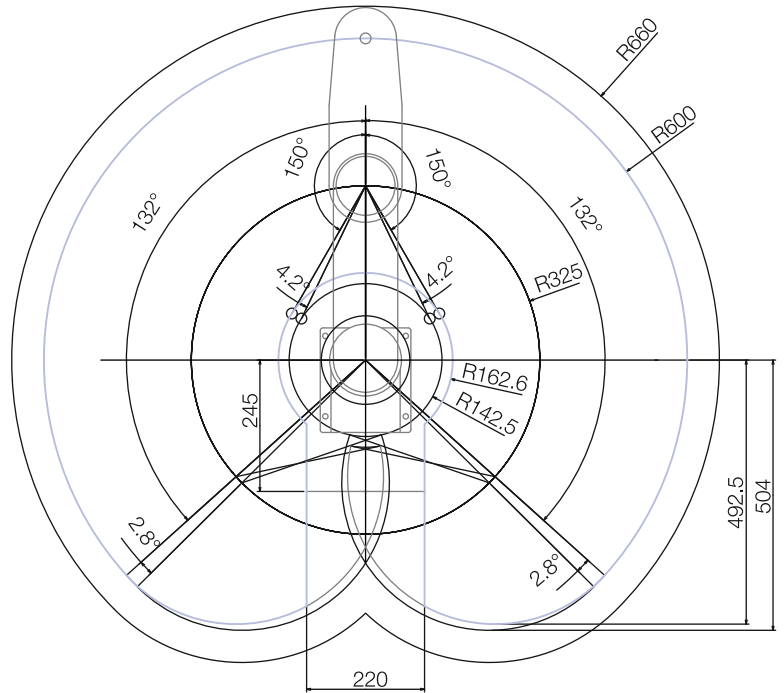
Payload 6 kg
Reach 600 mm
Z-Hub 200 mm / 170 mm (cleanroom version)

from EUR 13,000
 excluding sales tax

www.epson-store.de/fa

All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm



AT A GLANCE – AND IN COMPARISON

TECHNICAL DATA

08

	SCARA-Light LS3-401S	SCARA-Light LS6-602S
Design	4 axes	4 axes
Payload	3 kg	6 kg
Horizontal reach	400 mm	600 mm
Vertical reach	150 mm	200 mm
Arm length	J1 225 mm + J2 175 mm	J1 325 mm + J2 275 mm
Orientation reach	J4 +/- 360°	J4 +/- 360°
Horizontal repeatability	J1, J2 +/- 0.01 mm	J1, J2 +/- 0.02 mm
Vertical repeatability	J3 +/- 0.01 mm	J3 +/- 0.01 mm
Orientation repeatability	J4 +/- 0.01°	J4 +/- 0.01°
Max. envelope	J1 +/- 132°, J2 +/- 141° J3 150 mm, J4 +/- 360°	J1 +/- 132°, J2 +/- 150° J3 200 mm, J4 +/- 360°
Max. axis speed	J1, J2 6,000 mm/s J3 1,100 mm/s, J4 2,600°/s	J1, J2 6,800 mm/s J3 1,100 mm/s, J4 2,000°/s
Permitted moment of inertia	nom. 0.005 kg*m ² max. 0.05 kg*m ²	nom. 0.01 kg*m ² max. 0.12 kg*m ²
Permanent insertion force	100 N	100 N
Electrical user wiring	1 D-sub (15 pin)	1 D-sub (15 pin)
Pneumatic user wiring	3 (1x Ø 4 mm and 2x Ø 6 mm)	3 (1x Ø 4 mm and 2x Ø 6 mm)
Type of mount	Floor	Floor
Z-axis external / internal	Ø 16 H7 / Ø 11 mm	Ø 20 H7 / Ø 14 mm
Cleanroom option	ISO 4	ISO 4
Power and signal cable	3 m	3 m
Certificates	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machinery Directive 2006/42/EC	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machinery Directive 2006/42/EC
Weight	14 kg	17 kg

Price excluding sales tax

from EUR 10,000

from EUR 13,000

J1 = Axis 1
J2 = Axis 2

J3 = Axis 3
J4 = Axis 4

EPSON RC90 CONTROLLER: THE LIGHTWEIGHT WINS WITH ITS STRONG PERFORMANCE.

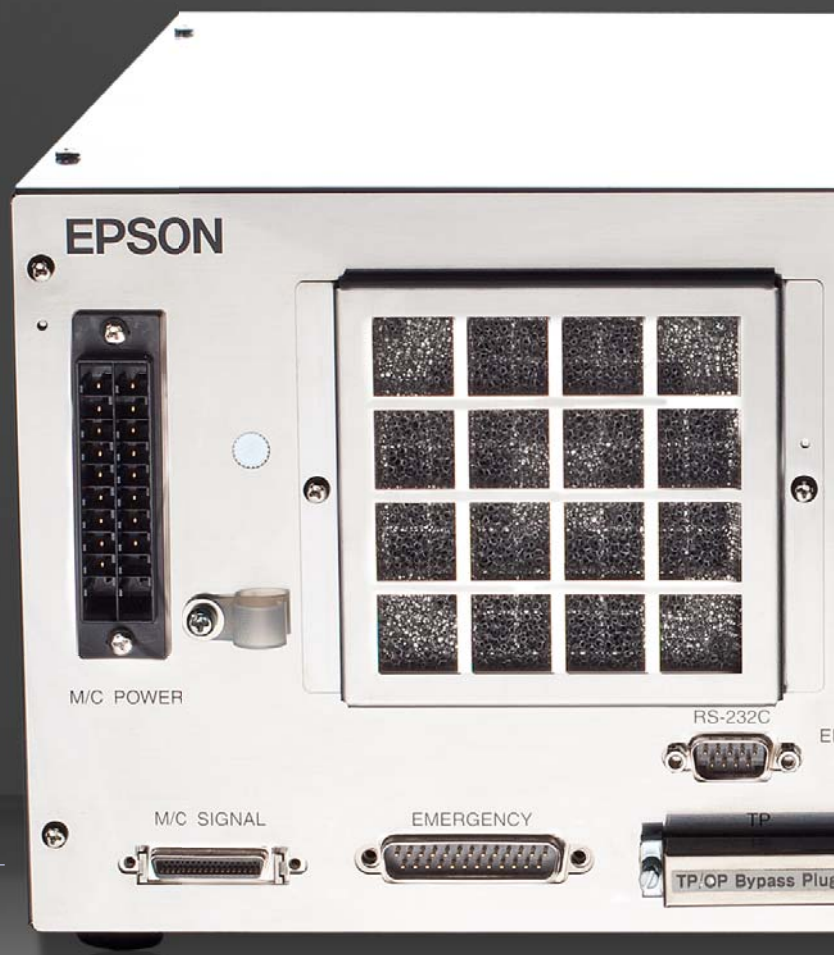
- Smallest and lightest controller of its class on the market
- Compact: Even fits in the control cabinet
- Plug-and-Produce
- Simple to program and operate, thanks to the proven Epson RC+ development environment
- Back-up to a USB stick is possible
- Various ways to be mounted

Graded safety systems (safety door circuit/emergency stop circuit)

Includes communication sockets RS-232C, USB, I/O and Ethernet



EPSON RC90 CONTROLLER



EPSON CONTROLLER RC90

FACTS / PRICE

10

Interfaces RS-232C, USB, Ethernet, 24/16 I/O

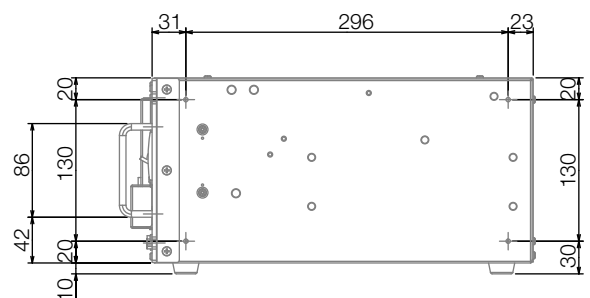
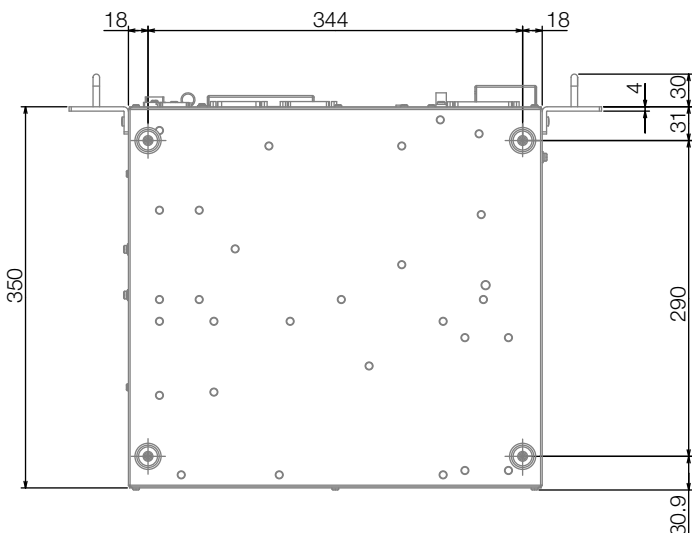
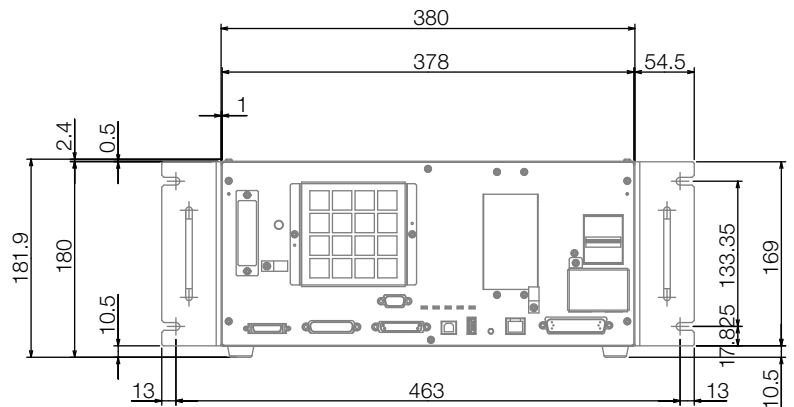
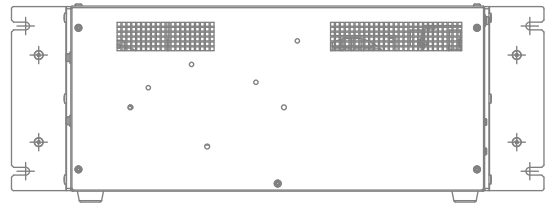
Dimensions 380 x 350 x 180 mm

Weight 7.5 kg

included in SCARA-Light price

All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm



RC90 controller

Interfaces	1x USB memory, 1x USB device 1x 10/100 base T-Ethernet 24/16 standard I/O channels — 8/8 as remote RS-232C Standard 1x channel
CPU	32-Bit Microprocessor
Hardware option	Teach Pendant 2
Expansion card options	I/O expansion 24/16, up to 2 additional cards I/O slave-fieldbus cards DeviceNet, Profibus, CC-Link, 1 additional card each possible Serial interface RS-232C 2 channels per card, up to 2 additional cards
Software options	VB guide External Control Point Motion (ECP) GUI Builder
Development environment	Epson RC+ 5.0
Programming language	Epson SPEL+ multitasking possible
Supply voltage	AC 200 V to AC 240 V, single-phase 50/60 Hz
Power consumption	up to 2,500 VA — depending on manipulator model
Ambient temperature	5–40°C
Relative humidity	20% to 80% — no condensation
Safety features	EMERGENCY STOP switch, safety door input, low power mode, dynamic brake error detection encoder cable disconnection detections motor overload, motor speed error, irregular motor torque (out-of-control manipulator), overheat condition inside a motor driver module, positioning overflow — servo error, speed overflow — servo error, irregular CPU, memory check-sum error, relay deposition, over-voltage, AC power supply voltage drop, temperature anomaly, fan malfunction
Certifications	CE ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC
Dimensions	380 x 350 x 180mm
Weight	7.5 kg

Price excluding sales tax

included in SCARA-Light price

If you plan to send your plant to the USA or Asia, you generally need an NPN model of the Epson RC90 controller. If you need this model, please note this in your order. It is not possible to convert the controller retrospectively.

You can send us an e-mail at robot.infos@epson.de

The expansion cards for communication with external devices and for integration into fieldbus networks can expand your system flexibly.

Intuitive Teach Pendant TP2

The portable operating and display device fulfils all tasks regarding monitoring, operation and parametrisation. The Teach Pendant can execute different commands, including motor on/off. The teach pendant can be operated just as easily by both left-handed and right-handed users so that they can work tirelessly.

I/O expansion

If the 24 standard inputs and 16 outputs are not enough and you do not want to set up a fieldbus network, 24 inputs and 16 outputs per card can be added to your system. You can use a total of up to two expansion cards.



Expansion I/O card
EUR 810

I/O cable kit expansion
EUR 360 (block and cable)

I/O kit expansion
EUR 1,150 (card and block and cable)



EUR 900

RS-232C serial interface

The Epson RC90 provides one serial interface by default for communicating with external accessories. With the serial expansion card, you can use a further two channels.

You can use a total of up to two expansion cards.



EUR 320

Fieldbus cards

Is your installation already provided with a fieldbus system or do you wish to reduce the effort for establishing further connections? Then you can use the following slave card options for the RC90:



Profibus
EUR 770

DeviceNet
EUR 770

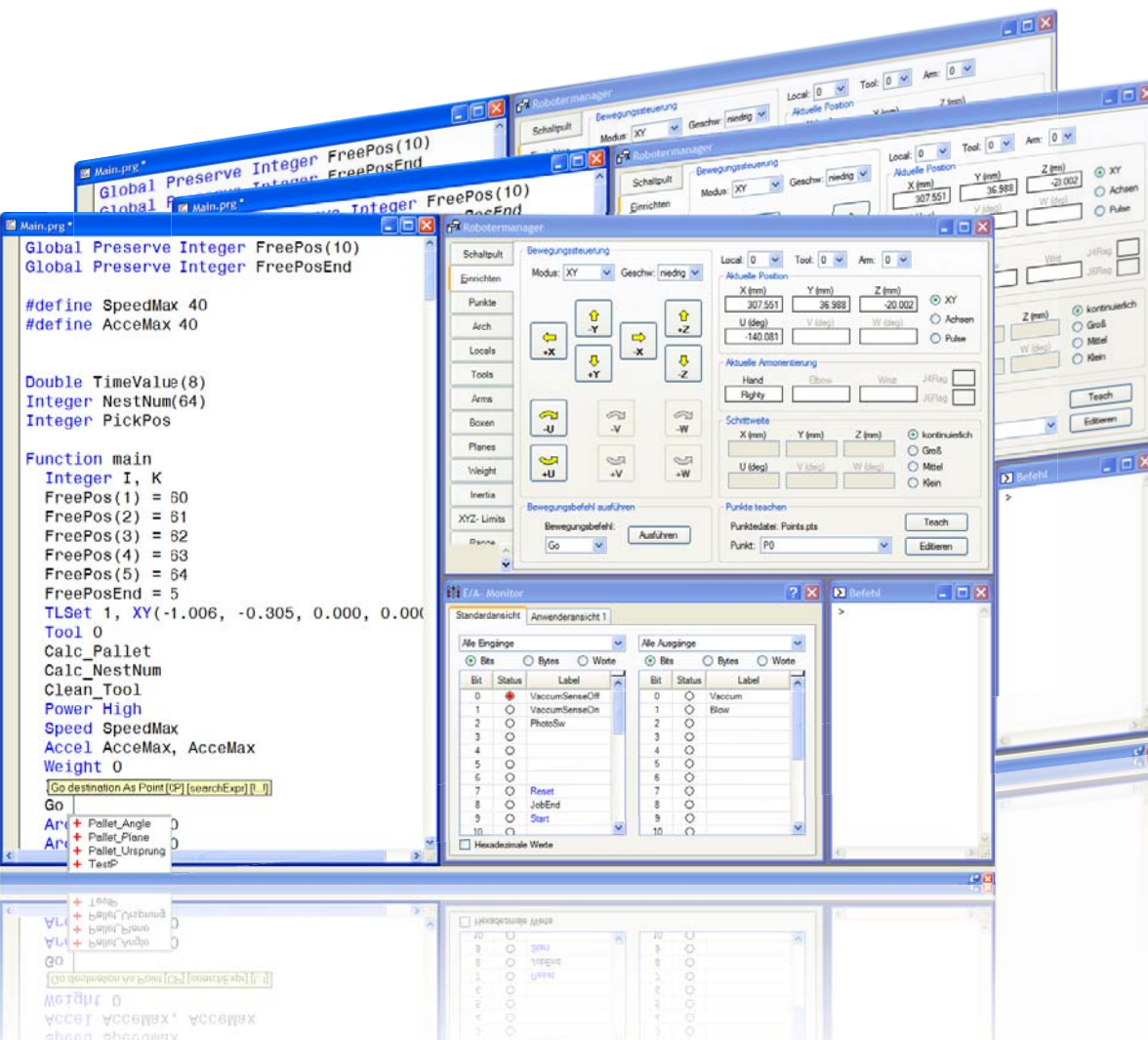
CC-Link
EUR 770

The RC+ 5.0 project management and development environment operating in the current Windows versions. The open design also allows connection to external programming environments.

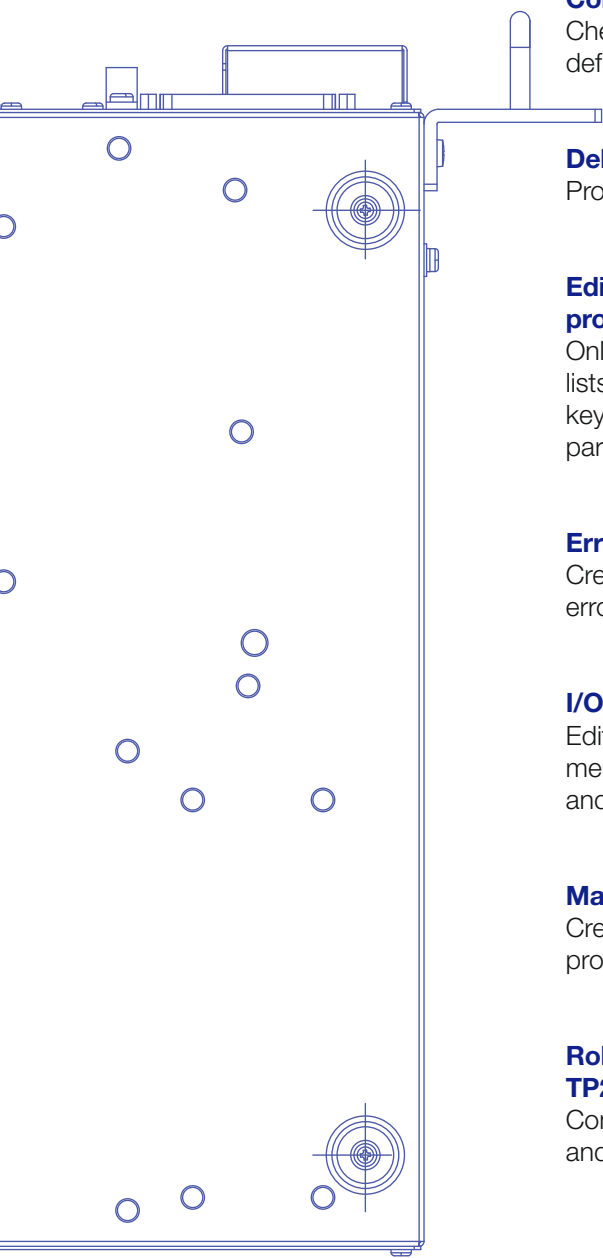
With the RC+ 5.0 intuitive development environment, you have all tools for fast and efficient programming at your fingertips.

The Epson RC90 controller communicates via USB or Ethernet. Syntax Colouring, Debugger, input assistance and a freely definable interface assist you during development.

- Development environment for applications with the Epson SPEL+ robot language
- Parallel operation of multiple RC+ 5.0 applications is possible
- Integrated image processing
- Diverse interface connections
- Programming environment in German, English and French languages



With these integrated software tools, you have everything you need to program efficiently.



Command

Single-line command editor

Stack editor

Display of program branching

Compiler

Check of sequence programs (syntax, definition, value range and much more)

System history

Recording of errors, events, warnings (diagnostics)

Debugger

Program with breakpoints/jog mode

Task Manager

Display of called multitasks and their status, as well as the current program line

Editor: Creation of SPEL+ sequence programs

Online Help, Syntax Check, label lists, detection and colour mode of keywords, parameters and comments, parameter list, defined jump

Variable editor

Display/editing of current variable values

Error editor

Creation of own application-specific error messages

Maintenance manager

Creation/input/display of backups, controller reset

I/O label editor and monitor

Editing and view status of labels for memory I/O / fieldbus I/O for bit, byte and word data widths

Macro editor

Creation of a SPEL+ program as program help

Robot Manager — control also via TP2

Contains all robot-related information and controls in well-arranged windows

IT JUST OFFERS MORE

In addition to the scope of supply, you can equip the LS robot system with hardware and software options to suit your individual needs.

SCARA-Light scope of supply

- Epson robot and controller
- 1 Epson RC+ robot program CD including a simulator
- 2 sets of mounting brackets for the RC90 robot controller
- 1 set 3 m motor and signal cable
- 1 emergency stop connector
- 1 standard I/O connector
- 1 set user wiring connector
- 1 back-up disc for the RC90 robot controller
- 1 USB programming cable (RC90)
- Manuals on CD
- 1 Installation/safety manual



Manipulator options

Longer motor and signal cables

5 m / 10 m

EUR 450 / EUR 520

Tool adaptor

for easy mounting of end effectors to the shaft

EUR 420

Additional software options

External Control Point (ECP)

For determining coordinates

EUR 520

RC+ API 7.0 (VB Guide for RC+ 7.0)

Application Programming Interface to support .NET technology

EUR 900

Vision Guide 5.0

For complex applications based on image processing

EUR 2,170 (excluding camera)

GUI builder

For the fast and simple creation of an individual user interface based on the Epson programming language SPEL+

EUR 520

TRIAL & ERROR — WHY NOT?!

Before using the Epson LS in your application, you can compare and visualise processes risk-free.

PHASE 1 — DESIGN

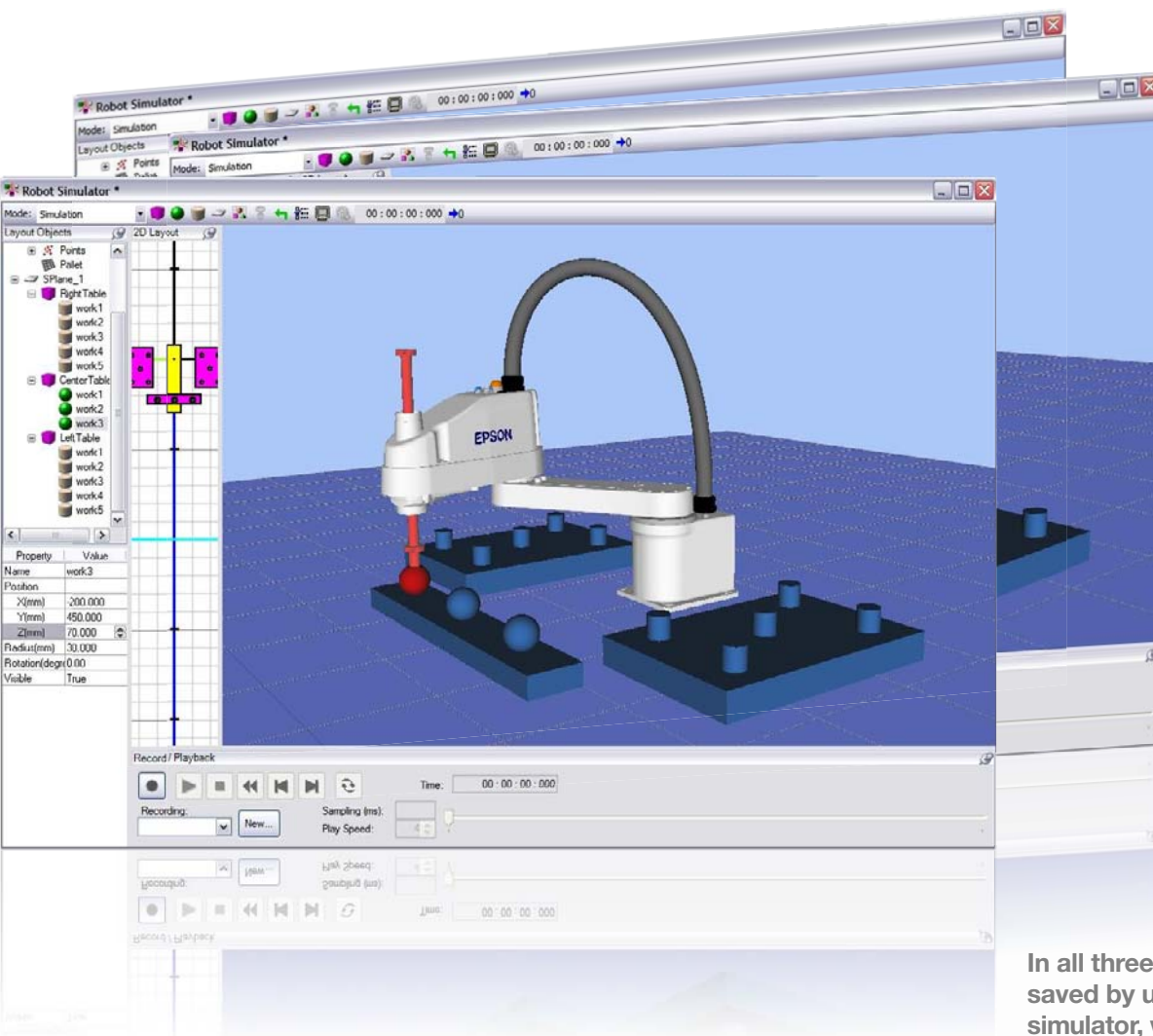
When designing your robot cell in advance, you can plan your robot cell true to the original and reliably predict the cycle times for your application. This proves the feasibility prior to even one part of the plant being produced. Later expansions of the plant can be prepared in the simulation so that the plant only needs to be stopped in exceptional cases.

PHASE 2 — INTEGRATION

Before being sent to the robot, the program is validated offline. In this way, programs can be created simultaneously. Even complex movement can be displayed and evaluated. Risks of collision are detected to prevent damage to the equipment.

PHASE 3 — OPERATION AND MAINTENANCE

Troubleshooting and program modification tasks can be comfortably carried out right from your desk. Collision detection, reachability testing and robot movements are visualised in the 3D layout.



In all three phases, time and costs are saved by using the Epson RC+ simulator, which itself is free of charge.

EVERYTHING IN SIGHT AND UNDER CONTROL: THE NEW EPSON COMPACT VISION IMAGE PROCESSING.

The Epson Compact Vision cameras leave nothing to be desired: Permanently installed or mobile, with different resolutions, with lenses of different focal lengths, integrated or with remote lens system.

- communication between robot and image processor within milliseconds with the Epson Vision Guide 5.0 software
- Short development time due to integration into RC+ development environment
- Comfortable Drag & Drop programming
- Finding of parts even in varying light conditions

EPSON COMPACT
VISION CAMERA

EPSON COMPACT
VISION CV1



EPSON COMPACT VISION CV1

FACTS / PRICE

18

Interfaces Ethernet, USB, RS-232C

Max. 2 camera connections

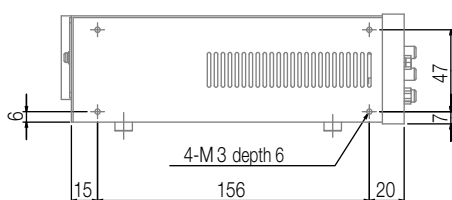
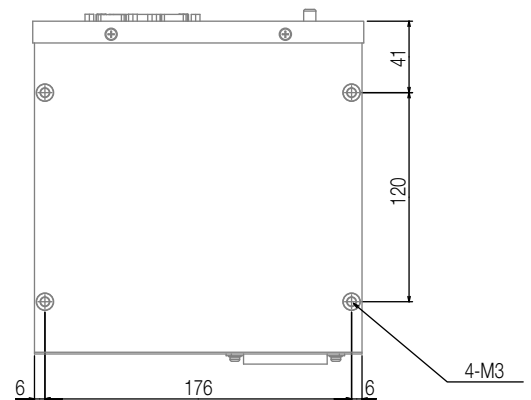
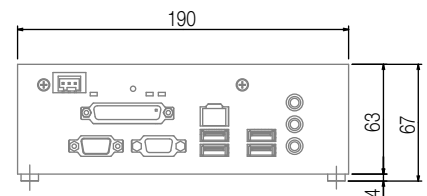
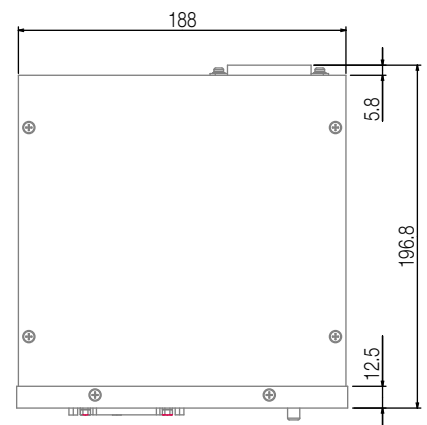
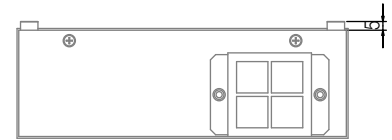
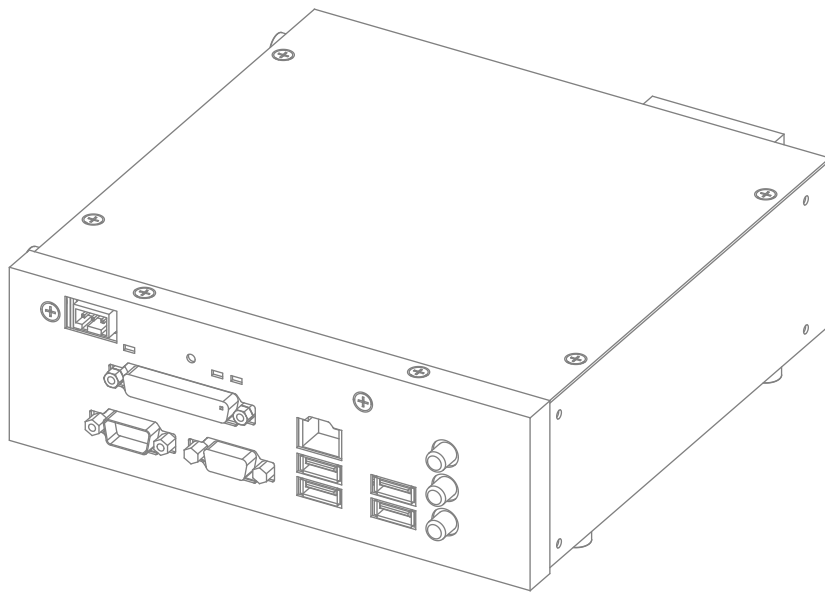
Weight 1.5kg

EUR 2,170
excluding sales tax

www.epson-store.de/fa

All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm



EPSON COMPACT VISION CAMERAS

FACTS / PRICE

19

Fixed or mobile USB cameras

Weight 0.05 kg

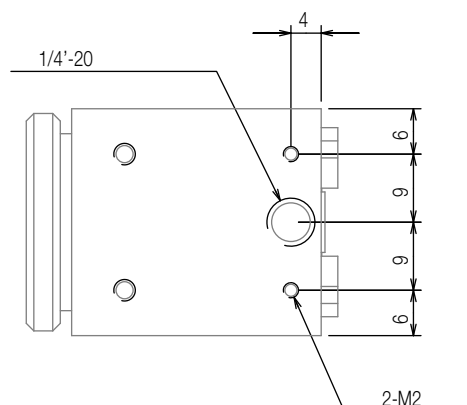
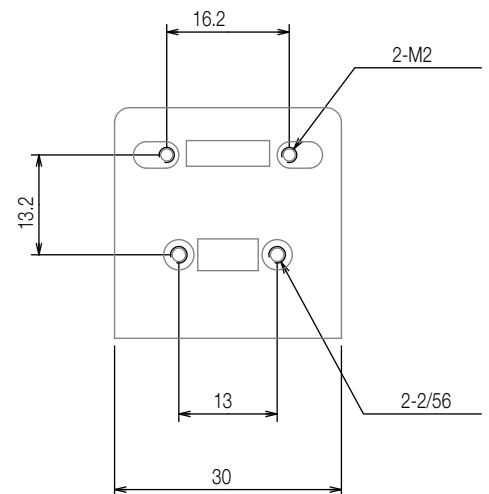
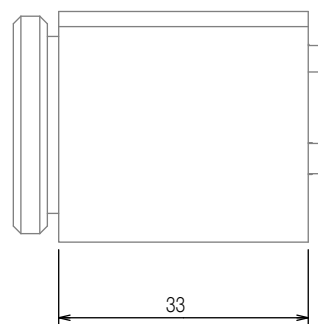
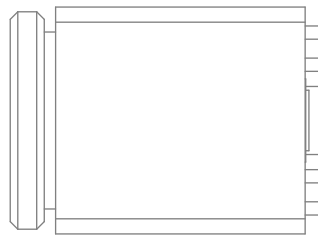
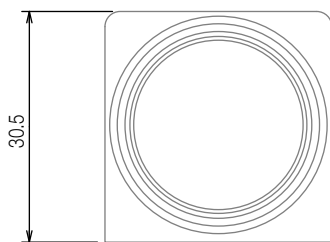
Resolutions 640 x 480 Pixel / 1,280 x 1,024 Pixel

from EUR 455
excluding sales tax

www.epson-store.de/fa

All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm



EPSON COMPACT VISION AT A GLANCE

TECHNICAL DATA

20

EPSON COMPACT VISION **CV1**

Interfaces	Ethernet, USB, RS-232C
Camera connections	Maximum 2 cameras
Dimensions	190 x 63 x 197 mm
Ambient temperature	0–45°C
Power consumption	DC 24V ±5%
Weight	1.5 kg

Price **EUR 2,170**

COMPACT VISION **ACCESSORIES**

Mounting bracket set
EUR 290

Lenses 8, 12, 16, 25 or 50 mm
each **EUR 230**

Extension rings set
EUR 140

www.epson-store.de/fa

FIXED **STANDARD USB CAMERA**

Resolution	640 x 480 pixels
Sensor types	CMOS — 1/3" Progressive Scan
Lens mount	C-/CS-mount
Camera connection	5 m standard USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm
Weight without lens	0.05 kg

Price **EUR 455**

FIXED **HIGH RESOLUTION USB CAMERA**

Resolution	1,280 x 1,024 pixels
Sensor types	CMOS — 1/1.8" Progressive Scan
Lens mount	C-/CS-mount
Camera connection	5 m standard USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm
Weight without lens	0.05 kg

Price **EUR 875**

MOBILE **STANDARD USB CAMERA**

Resolution	640 x 480 pixels
Sensor types	CMOS — 1/3" Progressive Scan
Lens mount	C-/CS-mount
Camera connection	5 m High-Flex USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm
Weight without lens	0.05 kg

Price **EUR 535**

FIXED **HIGH RESOLUTION USB CAMERA**

Resolution	1,280 x 1,024 pixels
Sensor types	CMOS — 1/1.8" Progressive Scan
Lens mount	C-/CS-mount
Camera connection	5 m High-Flex USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm
Weight without lens	0.05 kg

Price **EUR 955**

AS ONE OF THE PIONEERS IN ROBOTICS, INGENUITY COURSES THROUGH OUR VEINS.

- In-house Research and Development department for automation processes
- **1982**
first freely available Epson SCARA robot in Japan
- **1986**
the world's first cleanroom robot of class 1
- One of the world's most comprehensive SCARA model ranges
- **1997**
first PC-based controller
- **2008**
inventor of the G3 with left and right arm orientation
- **2009**
inventor of the Spider:
a one-of-a-kind SCARA robot with 450° envelope

SO THAT YOUR PRODUCTION RUNS TIRELESSLY

Epson robot systems:
Precise, fast and absolutely
reliable.

Our robots palletise, saw, mill, drill, grind, mount, move and assemble. They work precisely and at breathtaking speed in these and many more applications — often up to 24 hours a day.



Epson Spider robot

A real economic miracle:
With its unique construction, the
Epson Spider reaches every angle of
its envelope and within cycle times
previously unheard of.



Epson SCARA robot

Compact, powerful and precise,
even at high speeds. Epson has the
world's most comprehensive range of
SCARA robots — more than
200 models.

One of the world's most
comprehensive ranges of SCARA
models, 6 axis robots, controllers
and software below to our range
of products.



Epson 6-axis robot

Flexibility allowed by its
rotating axes. Thanks to
unrivalled point and path
accuracy, complex work
processes can be precisely
achieved.



Epson controllers

High power in the smallest space.
The Epson controllers are based on
a robust, integrated system and are
able to control both manipulators and
periphery devices.

REALISE THE FULL POTENTIAL **OF YOUR EPSON ROBOT SYSTEM**

**We offer a complete pre and after sales support program as a service.
This includes the following and more:**

- Feasibility studies for maximum planning and project security
- Support during planning and implementation
- Introductory seminars, programming, maintenance or operator trainings
- Inspection and individual maintenance concepts
- Hotline service, repair service on site
- Central spare part stocking

EPSON INDUSTRY SOLUTIONS CENTRE — **THAT'S WHERE WE FIND YOUR SOLUTION!**

Expertise concentrated on 500 m²: In cooperation with our partners at our Meerbusch Industry Solutions Centre, we present solutions for the most diverse applications in industry. The fields include large format printing, retail solution and factory automation.

Factory automation

See all Epson robots in action. Our experts help you to set up, simulate and optimise your automation application in a workshop cell. The cell can be controlled and networked with all standard fieldbuses. In addition, we provide up-to-date peripheral equipment such as a Vision and Conveyor Tracking system.

**You would like to arrange
an appointment?**

Call us at
+49 2159 538 1800

or write us an e-mail at
robot.infos@epson.de





Epson Deutschland GmbH

Factory Automation Division
Otto-Hahn-Straße 4
40670 Meerbusch

Phone: +49 2159 538 1800
Fax: +49 2159 538 3170
E-mail: robot.infos@epson.de
www.epson.de/robots

Epson America Inc.

Factory Automation Division
18300 Central Avenue
Carson, CA 90746

Phone: +15 62290 5910
Fax: +15 62290 5999
E-mail: info@robots.epson.com
www.robots.epson.com

Seiko Epson Corp

Toyoshina Plant
6925 Tazawa, Toyoshina
Azumino-Shi, Nagano, 399-8203

Phone: +81 263 72 1447
Fax: +81 263 72 1495
E-mail: epsonrb@exepson.co.jp
www.epson.jp/fa/e

Epson China Co, Ltd.

7F, Jinbao Building, No.89 Jinbao Street
Dongcheng District
Beijing 100005, China

Phone: +86 10 8522 1199 259
Fax: +86 10 8522 1125 259
www.epson.com.cn

EPSON[®]
EXCEED YOUR VISION