KEEP IT SIMPLE.
BUT SMART.
THE EPSON LS SERIES

sinerges tecmon, s.a.

Técnicas de manipulación y montaje flexible

EPSON®
EXCEED YOUR VISION

REDUCED TO THE ESSENTIALS

As powerful as you need them to be. As cost-effective as you would like them to be.
The Epson LS series impresses both with its performance, as well as with its extremely
low acquisition and operating costs.

You can obtain an Epson LS including control from just 10,000 Euro. Thus a worthwhile
investment for a 4 axis robot, in areas which, up till now, were reserved for linear systems or
other – less flexible – machines.

Advantages at a glance
– low acquisition and operating costs
– includes RC90 control and simulation software
– fully versatile: more flexible than linear systems
– reliable and durable

ADVANCED EPSON LS SERIES

Correctness is guaranteed.
The three LS models vary in load capacity and
range. Each robot is also additionally available in
a **clean room version** .

PACKAGE

– Epson robots and control
– 1 Epson RC+ program CD including
  simulator
– 2 mounting bracket sets for the
  RC90 robot control
– 1 set of 3 m motor and signal cables
– 1 emergency stop plug
– 1 standard I/O plug
– 1 plug set for user cabling
– 1 backup disk for the RC90 robot
  control
– 1 USB programming cable (RC90)
– Manuals on CD
– 1 Installation/safety manual

OPTIONS

Longer power and signal cable
5 m / 10 m

Tool adapter
for easy end effector
installation to Z axis

EPSON LS3-401S

Load capacity: 3 kg
Range: 400 mm

EPSON LS6-602S

Load capacity: 6 kg
Range: 600 mm

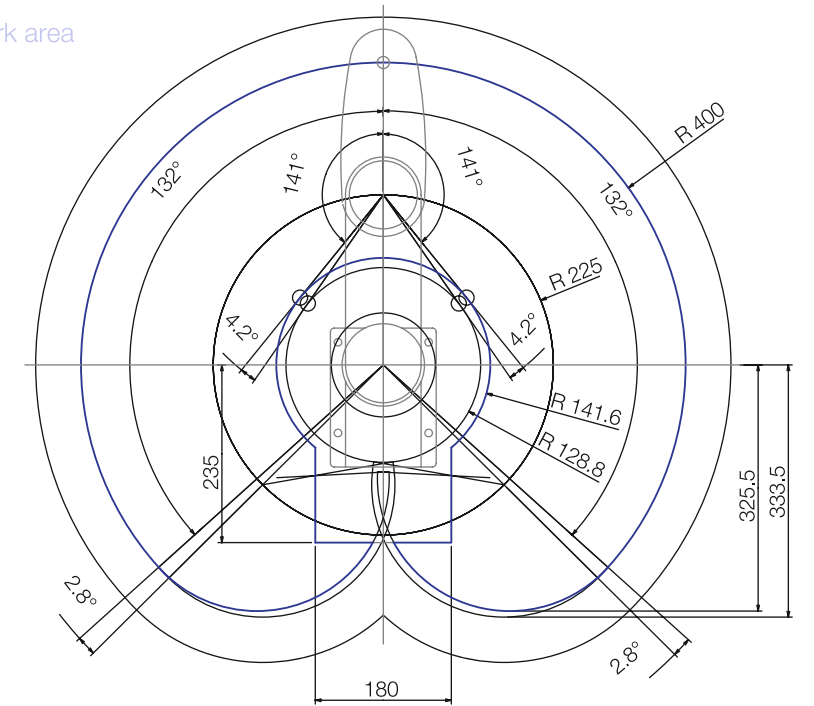EPSON LS20-A04S

Load capacity: 20 kg
Range: 1,000 mm

Smart order: www.epson.de/robot-store

DESIGNS OF THE
SCARA LIGHT LS3

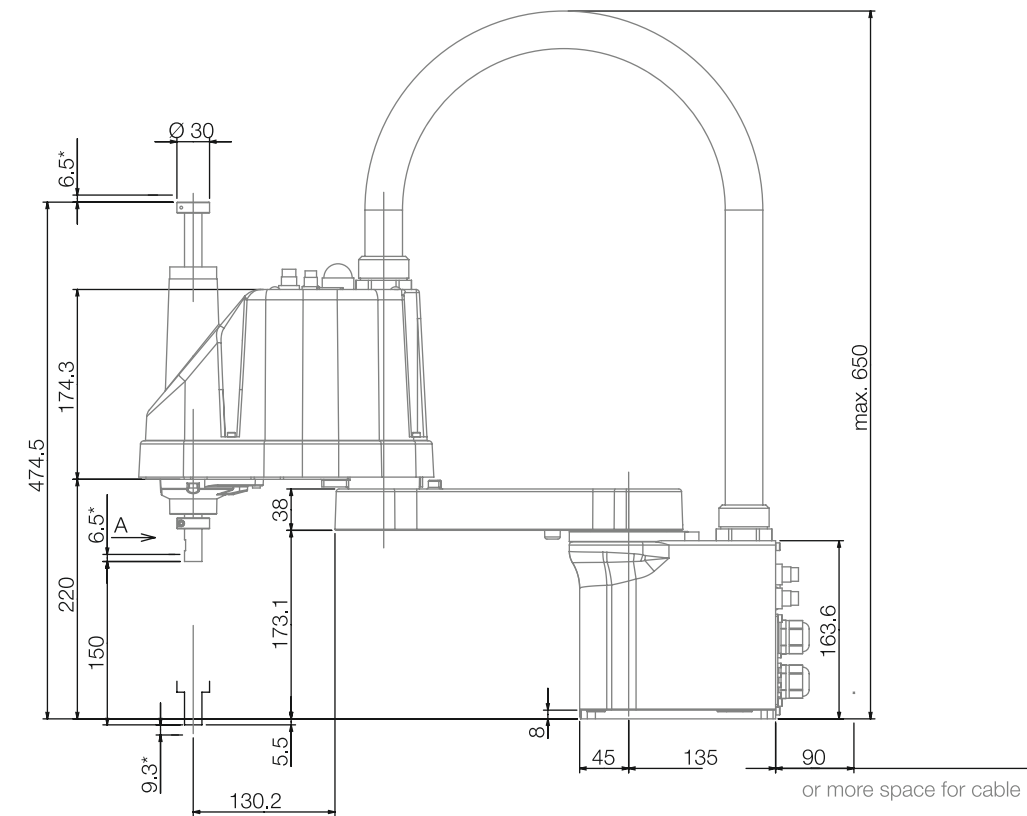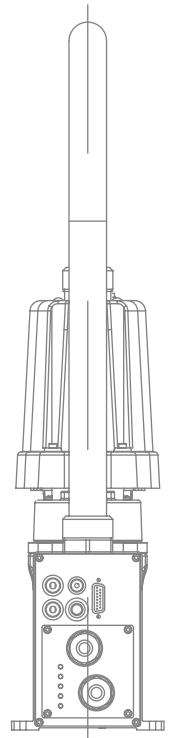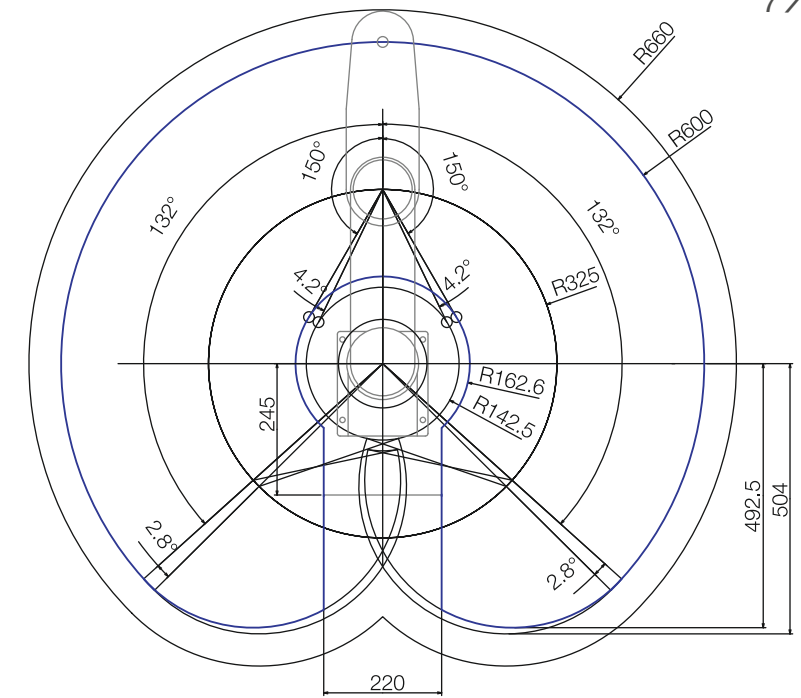|	SCARA LIGHT LS3-401S
Design	4 axis
Load capacity	3 kg
Horizontal range	400 mm
Vertical range	150 mm
Arm length	J1 225 mm + J2 175 mm
Range orientation	J4 +/-360°
Horizontal repeatability	J1, J2 +/-0.01 mm
Vertical repeatability	J3 +/-0.01 mm
Orientation repeatability	J4 +/-0.01°
Maximum work area	J1 +/-132°, J2 +/-141° J3 150 mm, J4 +/-360°
Maximum axis speed	J1, J2 6,000 mm/s J3 1,100 mm/s, J4 2,600°/s
Permissible moment of inertia	nom. 0.005 kg*m² max. 0.05 kg*m²
Permanent press-in force	100 N
Electrical user cabling	1 D-sub (15-pin)
Pneumatic user cabling	3 (1 x Ø 4 mm and 2 x Ø 6 mm)
Installation type	Floor
External/internal Z axis	Ø 16 h7 / Ø 11 mm
Clean room option	ISO 4
Power and signal cable	3 m
Certificates	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machine Directive 2006/42/EC
Weight	14 kg

Work area

Top view

Side view

Rear view

*mechanical stopper
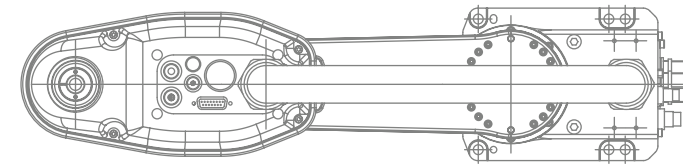
DESIGNS OF THE
SCARA LIGHT LS6

	SCARA LIGHT LS6-602S
Design	4 axis
Load capacity	6 kg
Horizontal range	600 mm
Vertical range	200 mm
Arm length	**J1** 325 mm + **J2** 275 mm
Range orientation	**J4** +/-360°
Horizontal repeatability	**J1, J2** +/-0.02 mm
Vertical repeatability	**J3** +/-0.01 mm
Orientation repeatability	**J4** +/-0.01°
Maximum work area	**J1** +/-132°, **J2** +/-150° **J3** 200 mm, **J4** +/-360°
Maximum axis speed	**J1, J2** 6,800 mm/s **J3** 1,100 mm/s, **J4** 2,000°/s
Permissible moment of inertia	nom. 0.001 kg*m² max. 0.12 kg*m²
Permanent press-in force	100 N
Electrical user cabling	1 D-sub (15-pin)
Pneumatic user cabling	3 (1 x Ø 4 mm and 2 x Ø 6 mm)
Installation type	Floor
External/internal Z axis	Ø 20 h7 / Ø 14 mm
Clean room option	ISO 4
Power and signal cable	3 m
Certificates	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machine Directive 2006/42/EC
Weight	17 kg

Work area

R660
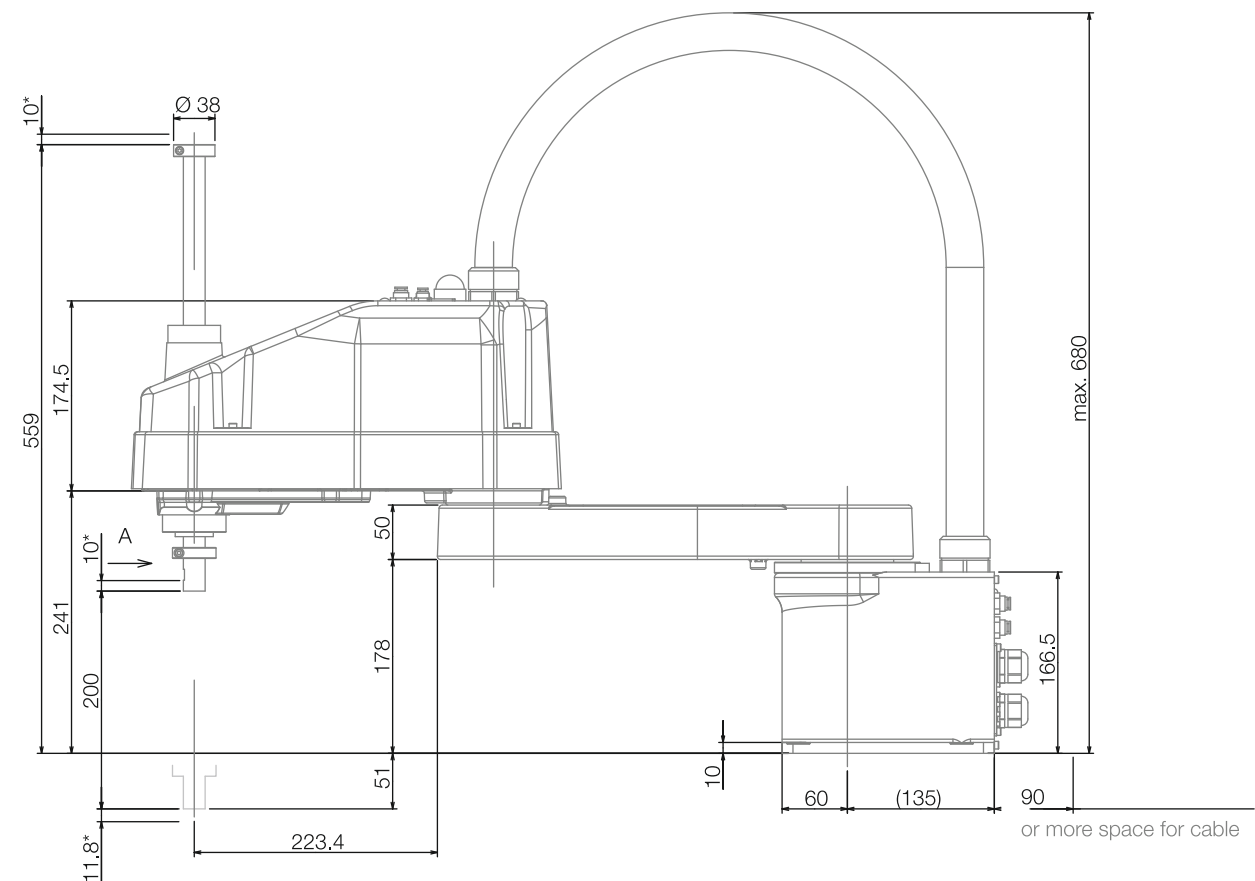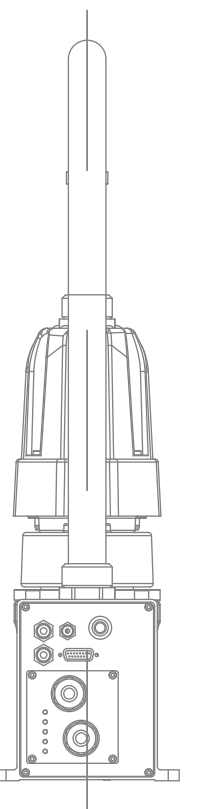R600
R325
R162.6
R142.5
132° 150° 150° 132°
4.2° 4.2°
245
2.8° 2.8°
492.5
504
220

Top view

Side view

Rear view

Ø 38
10*
559
174.5
241
200
10*
A
50
178
166.5
max. 680
51
10
11.8*
223.4
60
(135)
90
or more space for cable

* mechanical stopper
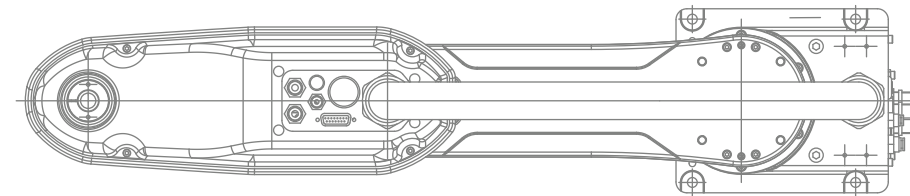
DESIGNS OF THE
SCARA LIGHT LS20

	SCARA LIGHT LS20-A04S
Design	4 axis
Load capacity	20 kg
Horizontal range	1,000 mm
Vertical range	420 mm
Arm length	J1 550 mm + J2 450 mm
Range orientation	J4 +/-360°
Horizontal repeatability	J1, J2 +/-0.025 mm
Vertical repeatability	J3 +/-0.01 mm
Orientation repeatability	J4 +/-0.01°
Maximum work area	J1 +/-132°, J2 +/-152° J3 420 mm, J4 +/-360°
Maximum axis speed	J1, J2 11,250 mm/s J3 2,020 mm/s, J4 1,400°/s
Permissible moment of inertia	nom. 0.05 kg*m² max. 0.45 kg*m²
Permanent press-in force	250 N
Electrical user cabling	1 D-sub (9-pin), 1 D-sub (15-pin)
Pneumatic user cabling	4 (2 x Ø 4 mm and 2 x Ø 6 mm)
Installation type	Floor
External/internal Z axis	Ø 25 h7 / Ø 18 mm
Clean room option	ISO 4
Power and signal cable	3 m
Certificates	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-2012 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) CE Marking - Machinery, Low Voltage, EMC Directive
Weight	50 kg

Rear view

Work area

Top view

Side view
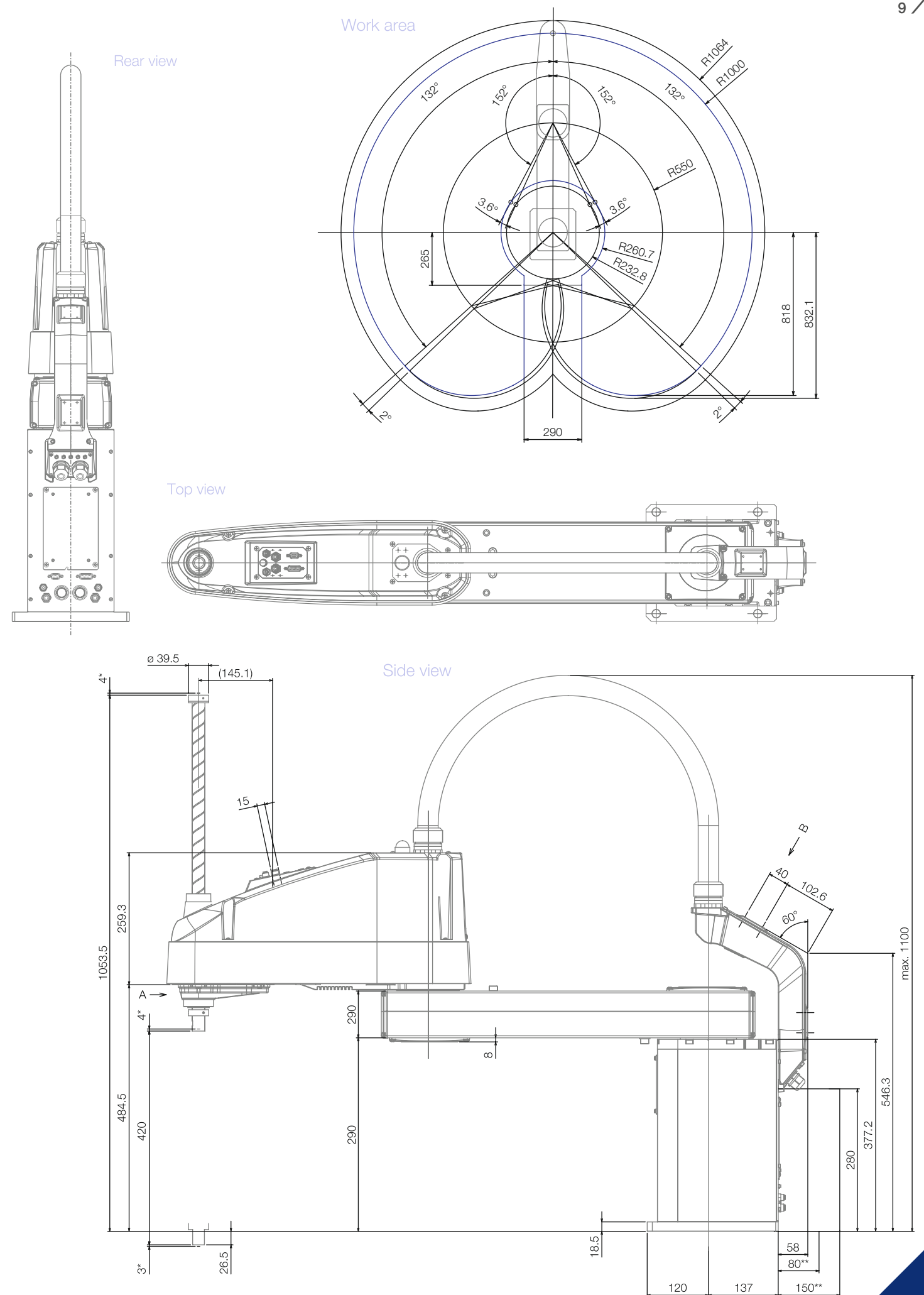
*mechanical stopper   **or more space for cable

J1 = Axis 1   J2 = Axis 2   J3 = Axis 3   J4 = Axis 4

A TRUE SPACE-SAVING MIRACLE:
RC90 CONTROL

The small, intelligent solution is already included in the Epson LS package. Its compact dimensions make the RC90 ideal for small work cells and it can also be installed in a control cabinet.

Flexible application as slave or master
The Epson RC90 can be operated as a stand-alone or integrated system, as a slave within a network, or as a master to control multiple robots and peripheral devices. It has **serial interfaces, expansion I/O cards, and an Ethernet port.** Should you require additional inputs and outputs, you can expand your system cost-effectively and flexibly to suit your needs.

Thanks to its intuitive Windows control interface, open structure and integral image processing, programming applications is incredibly easy and quick.
This is further supported by the special Epson-developed SPEL+ script language, which is very easy to learn. Its range of commands enables you to program a very wide range of robot motions – from a simple pick & place application to complex multi-manipulator line control.
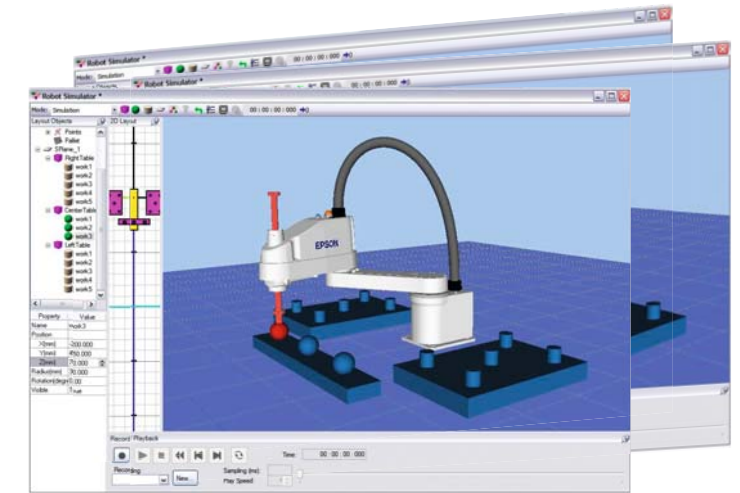
The Epson RC+ Simulator allows you to carry out risk-free testing, comparison, and process visualisation, before actual robot implementation.

TP2 MOBILE OPERATING UNIT

I/O EXPANSION	RS-232C SERIAL INTER-FACE	FIELD BUS CARDS
I/O expansion card **810.00 Euro**		**Slave** Profibus, ProfiNet, DeviceNet, CC-Link, EtherCat
I/O expansion cable kit **360.00 Euro (block + cable)**		Ethernet/IP
I/O expansion kit		**Master** Profibus, DeviceNet, Ethernet/IP

Integrated software tools for the Epson RC+ 7.0 development environment

COMMAND
One-line command editor

COMPILER
Program checking (syntax, definition, value range, and many more)

DEBUGGER
Program with stop points / step mode

DLL FUNCTIONS
Access to external DLL functions

EDITOR
Create SPEL+ programs:
Online help, syntax check, label lists, detection and colour display of keywords, parameters and comments, parameter list, definition jump

ERROR TEXT EDITOR
Creation of your own, application-specific, error messages

FILE MANAGEMENT
Create and access files and databases (Excel, Access, SQL)

IO LABEL EDITOR
Edit names for I/O / markers / field bus I/O for the data sizes bit, byte, and word

IO MONITOR
Display the status of I/O / markers / field bus I/O for the data sizes bit, byte, and word. You can create special user displays.

MACRO EDITOR
Create a SPEL+ program as a programming aid

ROBOT MANAGER
Contains all information and control elements relevant to robots – inserted in clear windows: Set-up, edit points, loop parameters, tool and robot coordinate systems, load capacity and moment of inertia. The robot trip points can be used to switch motors on and off, complete a reset or complete a home run.

STACK EDITOR
Display the program branches

SYSTEM HISTORY
Record errors, events and warnings (diagnostics)

TASK MANAGER
Display called multi-tasks, traps, and their statuses, display current program line

VARIABLE EDITOR
Display / Edit current variable values

MAINTENANCE MANAGER
Create / Load / Display backups, controller reset

SIMULATOR
Plan and visualise processes, validate programs

Software options

CONVEYOR TRACKING
Synchronise position with conveyor running

EXTERNAL CONTROL POINT (ECP)
ECP allows you to guide the workpiece contour easily and precisely along an external point.

FORCE SENSING
Real-time robot force measurement

GUI BUILDER
For the fast, easy creation of your own user interface based on the Epson SPEL+ programming language

OPTICAL CHARACTER RECOGNITION (OCR)
OCR (Optical Character Recognition) reliably detects fonts and symbols and checks printing – even under challenging conditions.

PG MOTION SYSTEM
Read conveyor speeds via encoders

RC+ API
RC+ API enables you to integrate your application in external software, develop user interfaces, and use databases.

SECURITY OPTION
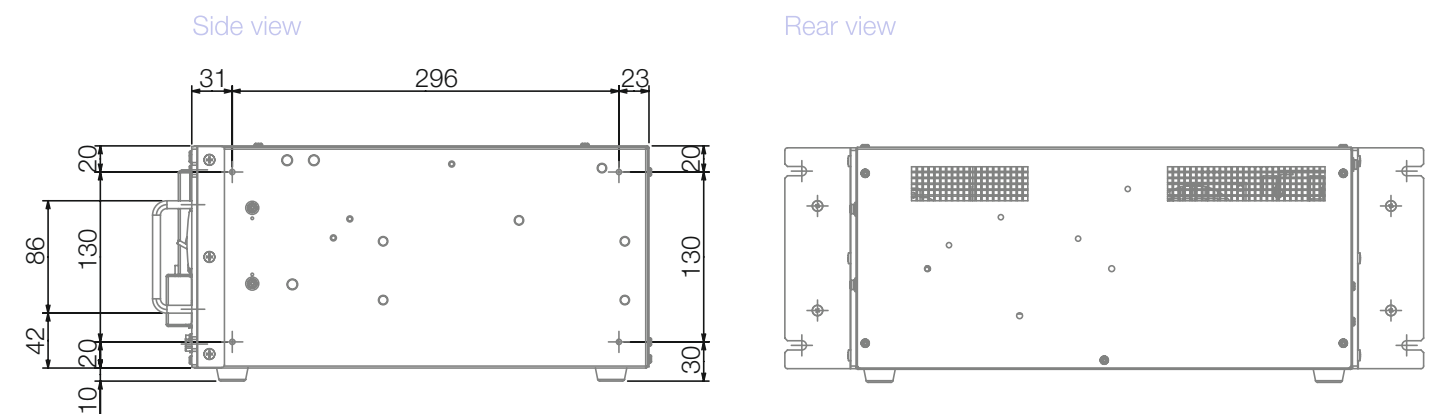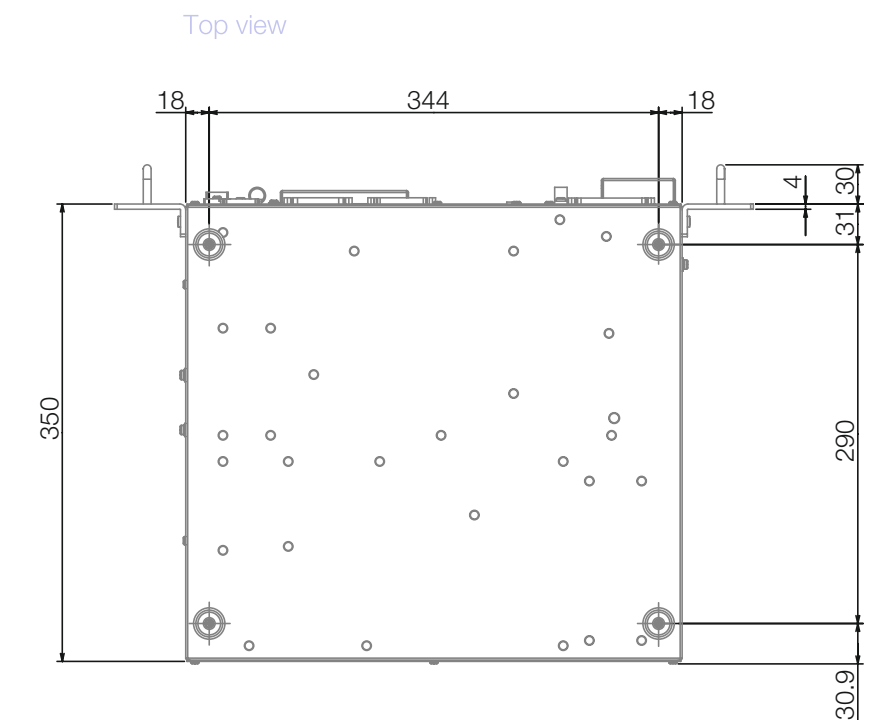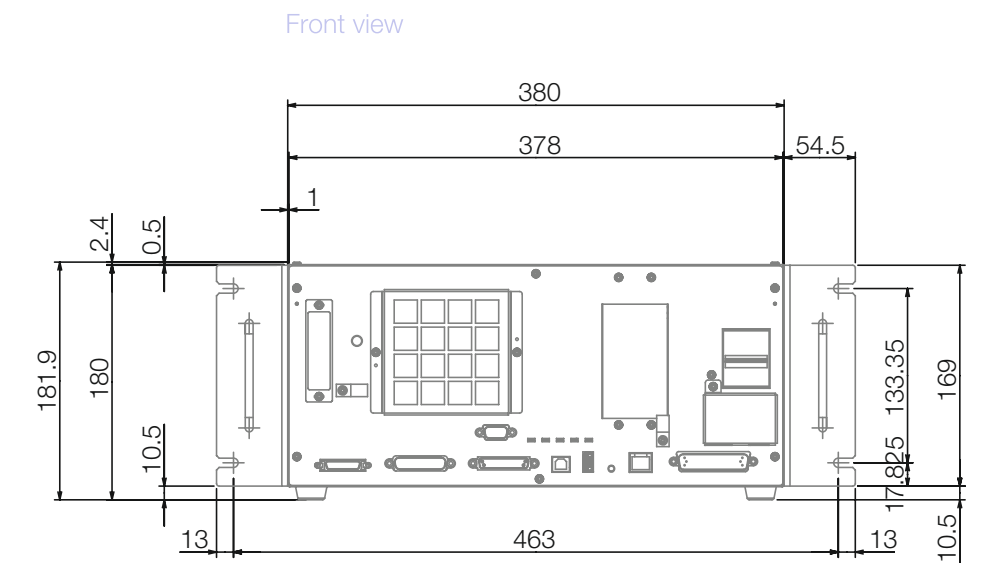Increased security through user management and usage control

VISION GUIDE 7.0
Powerful Epson image processing system

EVERYTHING UNDER CONTROL
AND IN VIEW – RC90 CONTROL

	RC90 CONTROL
Ports	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, 2 additional cards possible **I/O slave field bus cards** EtherCat, DeviceNet, Profibus, ProfiNet, CC-Link, Ethernet/IP, 1 additional card of each type possible **I/O fieldbus master cards** Profibus, DeviceNet, Ethernet/IP, 1 additional card of each type possible **RS-232C serial interface** 2 channels per card, 2 additional cards possible
Software options	RC+ API 7.0 previously VB Guide External Control Point Motion (ECP) GUI Builder
Development environment	Epson **RC+ 7.0**
Programming language	Epson **SPEL+** multitasking-capable
Connection values	AC 200 V to AC 240 V, one-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% – non-condensing
Safety equipment	Emergency Stop button, safety door entry, low power mode, generator brake **Error detection** Encoder cable break **Detectors** Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error
Certifications	CE ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC
Dimensions	380 x 350 x 180 mm
Price plus VAT	**included in SCARA Light price**

Front view

Top view

Side view

Rear view

If you plan to send your system to the USA or Asia, you will generally require a NPN version RC90 Epson control. Should you require this version, please note this on your order. Control retrofit is not possible. Send this an e-mail at: robot.infos@epson.de

SO YOUR PRODUCTION
RUNS AT FULL CAPACITY

EPSON ROBOT SYSTEMS:
ACCURATE, FAST, AND COMPLETELY RELIABLE.

Our robots palletise, saw, mill, drill, grind, install, assemble, and build together. They work with precision and at breathtaking speeds, in these and many other applications – often up to 24 hours a day.

Our product range includes one of the most comprehensive SCARA model ranges worldwide, 6-axis robots, controls, and software.

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

We offer a comprehensive **pre- and after-sales support programme** as a service. This includes:

– Feasibility studies for maximum
  planning and project security

– Support during planning and implementation

– Introductory seminars, programming/maintenance courses,
  operator training

– Inspection and customised maintenance designs

– Hotline service, on site repair service

– Central spare part stocking

EPSON SPIDER ROBOT

The cost-effective wonder: Due to its unique construction, the Epson Spider reaches every corner of its working area, and unprecedented cycle times.

EPSON SCARA ROBOTS

Precise work even at high speeds, compact and powerful. Epson has the largest SCARA robots model range worldwide – with over 300 versions.

EPSON CONTROLS

High performance in the smallest of spaces. The Epson controls are based on a robust, integrated system, and can control manipulators and peripheral devices.

EPSON 6-AXIS ROBOT

Flexibility through rotary-designed axes. Thanks to unprecedented point and path accuracy, complex work processes can be accomplished with precision.

EPSON INDUSTRY SOLUTIONS CENTER –
WE'LL FIND YOUR SOLUTION!

Epson
Industrial
Solutions
Center

Experience all our Epson robots in action. In a workshop cell you can build, simulate and improve your automation application with help from our experts. The cell can be controlled and networked using all conventional fieldbus systems. In addition we can supply you with modern peripherals such as a vision and conveyor tracking system.

WOULD YOU LIKE TO ARRANGE
AN APPOINTMENT?

CALL US AT
+49 2159 538 1800

OR SEND AN E-MAIL TO
info.rs@epson.de

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EPSON®

EXCEED YOUR VISION