## High performance, cost effective factory solutions

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# Value and performance

The Epson LS-B series is both powerful and cost-effective with its performance, as well as with its low acquisition and operating costs.

The Epson LS-B 4 axis robot (including a controller) is a worthwhile investment and is designed to work in environments, which were typically reserved for linear systems, or other less flexible machines.

#### Advantages at a glance

Batteryless motor unit Space and energy saving New top-of-arm layout Built-in camera cable Reduced cable height



#### Batteryless motor unit

Minimise downtime and reduce overall cost of ownership.

#### Built-in camera connector

It all comes integrated with an RJ45 Ethernet connector for easy vision system setup.

#### User-friendly top-of-arm layout

An extra ethernet port and screw holes make for easy top of arm equipment mounting and welcome extratime saving. Everything is spaced out for easier than ever access.

#### **Reduced cable height**

The space-saving, compact design cuts cabling down to size: ideal for hard to reach work cell layouts.



## The range

#### Advanced Epson LS-B Series

Precision guaranteed. The four LS-B models vary in load capacity and range. Each robot is also available in a cleanroom version.

#### What's included:

- Epson robot and controller
- 1 Epson RC+ program CD including simulator
- 2 mounting bracket sets for the RC90 robot controller
- 1 set of 3m power 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 controller
- 1 USB programming cable (RC90)
- User manuals on CD
- 1 Installation/safety manual



LS3-B SCARA Robot Payload: 3kg Range: 400mm Standard Version or Cleanroom Version



LS6-B SCARA Robot Payload: 6kg Range: 500mm, 600mm and 700mm Standard Version or Cleanroom Version

#### **Optional extras:**

Extended power and signal cable (5m/10m)

Tool adapter for easy installation of end effectors on Z axis



LS10-B SCARA Robot Payload: 10kg Range: 600mm, 700mm and 800mm Standard Version or Cleanroom Version



LS20-B SCARA Robot Payload: 20kg Range: 800mm and 1000mm Standard Version or Cleanroom Version



Model name		LS3-B	-	
Model number		LS3-B401S (LS3-B401C)		
Arm length	(J1+J2) mm	400		
Payload*1	Rated (kg)	1		
Fayloau	Max. (kg)	3		
	(J1+J2) mm	+/- 0.01		
Repeatability	(J3) mm	+/- 0.01		
	(J4) deg	+/- 0.01		
Standard cy	cle time (s)*2	0.42		
	(J1+J2) mm/s	7200		
Max. operation speed	(J3) mm/s	1100		
	(J4) deg/s	2600		
(J4) allowable	Rated (kg m²)	0.005		
moment of inertia*3	Max. (kg m²)	0.05		
(J3) down force (N)		100		
Installation Environment		Standard or Clean (ISO4, Not ESD applied)		
Mountir	ng type	Floor		
Weight (kg) (cabl	es not included)	14		
Applicable	Controller	RC90-B		
Installed wire fo	r customer use	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1		
Installed pneumatic tube for customer use		Ø6mm x2, Ø4mm x1: 0.59Mpa (6kgf/cm²)		
Power (V)		AC200-240		
Power Consumption*4	(kVA)	1.1		
Cable length (m)*5		3, 5, 10		
Safety standard		EU Directive Complied *5, KC, KCs		
		ANSI/RIA R15.06-2012, NFPA 79 (2007 Edition)		

J1 = Axis 1 J3 = Axis 3

\*1 : Do not apply the load exceeding the maximum payload.

\*2 : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed). Rounded down to the third decimal place.

\*3 : If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

\*4 : It depends on operating environment and operation program.

\*5 : Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

J2 = Axis 2 J4 = Axis 4





#### Working range, Epson SCARA LS3-B

			LS3-B401*
а	Arm #1 + Arm #2 length (mm)		400
b	Arm #1 length (mm)		175
С	Arm #2 length (mm)		225
d	(J1) motion angle (deg)		132
е	(J2) motion angle (deg)		141
f	Motion range (deg)		141.6
g	Motion range at the rear (deg)		325.5
h	Angle of the (J1) mechanical stop (deg)		2.8
i	Angle of the (J2) mechanical stop (deg)		4.2
j	Mechanical stop area (mm)		128.8
k	Mechanical stop area at the rear (mm)		333.5
	(10) motion range (mm)	Standard	150
[[]	(J3) motion range (mm)	Clean	120
	Distance from the base	Standard	5.5
n	mounting face (mm)	Clean	9.5
	(J3) mechanical stop	Standard	6.5
þ	area upper end (mm)	Clean	10.5
a	(J3) mechanical stop	Standard	6.5
Ч	area lower end (mm)	Clean	10.5
A = Cer B = Mot	ntre of Joint #3 C = Maximum range tion range D = Base mounting face	E = Area limited	by a mechanical stop

Side view



**Rear view** 



#### Flange (standard)



#### Flange (cleanroom)



Detailed view from A



Model name			LS6-B	-		
Model number		LS6-B502S (LS6-B502C)	LS6-B602S (LS6-B602C)	LS6-B702S (LS6-B702C)		
	Rated (kg)		2			
Payload	Max. (kg)		6			
Arm leng	th (J1+J2)	500	600	700		
	(J1)	225	325	425		
	(J2)		275			
	(J1+J2) mm		+/- 0.02			
Repeatability	(J3) mm		+/- 0.01			
	(J4) deg		+/- 0.01			
Standard cy	/cle time (s)*2	0.41	0.42	0.43		
	(J1) deg		+/- 132			
Max motion range	(J2) deg		+/- 150			
max. motion range	(J3) mm	200 (Clean 170)				
	(J4) deg		+/- 360			
	(J1+J2) mm/s	7120	7850	8590		
Max. operation speed	(J3) mm/s		1100			
	(J4) deg/s		2000			
(J4) allowable	Rated (kg m²)		0.01			
moment of inertia*3	Max. (kg m²)		0.12			
(J3) dowr	n force (N)		100			
Mounti	ng type		Floor			
Installation I	Environment	Star	ndard or Clean (ISO4, Not ESD a	oplied)		
Weight (kg) (cables not included)		17	17	18		
Applicable Controller			RC90-B			
Cable length (m)*4			3, 5, 10			
Installed wire for customer use		D	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1			
Installed pneumatic tube for customer use			Ø6mm x2, Ø4mm x1			
Safety standard		EU Directive Complied *5, KC, KCs				
		ANSI/RIA R15.06-2012, NFPA 79 (2007 Edition)				

J1 = Axis 1 J3 = Axis 3

J2 = Axis 2 J4 = Axis 4

\*1 : Do not apply the load exceeding the maximum payload.

\*2 : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed). Rounded down to the third decimal place.

\*3 : If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

\*4 : Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

\*5 : Because the robot is built and used in the customer's equipment, therefore robot shipment includes a 'Declaration of Incorporation of Partly Completed Machinery'.





Side view



#### **Rear view**



#### Working range, Epson SCARA LS6-B

A = Centre of Joint #3 B = Motion range C = Maximum range D = Base mounting face

			LS6-B502*	LS6-B602*	LS6-B702*
а	Arm #1 + Arm #2 length (mm)		500	600	700
b	Arm #1 length (mm)		225	325	425
С	Arm #2 length (mm)			275	
d	(J1) motion angle (deg)			132	
е	(J2) motion angle (deg)			150	
f	Motion range (deg)		138.1	162.6	232
g	Motion range at the rear (deg)		425.6	492.5	559.4
h	Angle of the (J1) mechanical stop (deg)			2.8	
i	Angle of the (J2) mechanical stop (deg)			4.2	
j	Mechanical stop area (mm)		121.8	142.5	214
k	Mechanical stop area at the rear (mm)		433.5	504	574.5
m (J3) motion range (mm)		LS6-B**2S		200	
		LS6-B**2C		170	
Distance from the base		LS6-B**2S		51	
11	mounting face (mm)	LS6-B**2C		530	
2	(J3) mechanical stop	LS6-B**2S		10	
ρ	area upper end (mm)	LS6-B**2C		6	
a	(J3) mechanical stop	LS6-B**2S		11.8	
q	area lower end (mm)	LS6-B**2C		9.8	

E = Area limited by a mechanical stop

#### Flange (standard)



Flange (cleanroom)



Detailed view from A



Model name			LS10-B			
Model number		LS10-B60*S (LS10-B60*C)	LS10-B70*S (LS10-B70*C)	LS10-B80*S (LS10-B80*C)		
Arm length (J1+J2)		600	700	800		
Daylood*1	Rated (kg)		5			
Fayloau	Max. (kg)		10			
	(J1+J2) (mm)	+/- 0.02	+/- 0.02	+/- 0.025		
Repeatability	(J3) mm		+/- 0.01			
	(J4) deg		+/- 0.01			
Standard cy	rcle time (s)*2	Less than 0.389	Less than 0.409	Less than 0.449		
	(J1+J2) mm/s	9100	9800	10500		
Max. operation speed	(J3) mm/s		1100			
	(J4) deg/s		2500			
Join#4 allowable	Rated (kg m²)	0.02				
moment of inertia*3	Max. (kg m²)	0.3				
(J3) dowr	n force (N)		200			
Mounti	ng type		Floor			
Installation Environment		Standard or Clean (ISO4, Not ESD applied)				
Weight (kg) (cables not included)		22	22	23		
Applicable	Controller	RC90-B				
Cable ler	ngth (m)*4	3, 5, 10				
Installed wire fo	or customer use	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1				
Installed pneumatic tube for customer use		Ø6mm x2, Ø4mm x1				
Power (V) AC200-240						
Power Consumption*4	(kVA)	1.8				
Cable length (m)*5		3, 5, 10				
Safety standard		EU Directive Complied *5, KC, KCs				
		ANSI/RIA R15.06-2012, NFPA 79 (2007 Edition)				

J1 = Axis 1 J3 = Axis 3

J2 = Axis 2 J4 = Axis 4

\*1 : Do not apply the load exceeding the maximum payload.

\*2 : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed).

\*3 : If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

SEG Internal Info:

\*4 : It depends on operating enviroment and operation program.

\*5 : Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.



Side view



## Working range, LS10-B602S



С

Rear view



#### Working range, Epson SCARA LS10-B

			LS10-B60**	LS10-B70**	LS10-B80**
а	Arm #1 + Arm #2 length (mm)		600	700	800
b	Arm #1 length (mm)		225	325	425
С	Arm #2 length (mm)			275	
d	(J1) motion angle (deg)			132	
е	(J2) motion angle (deg)			150	
f	Motion range (deg)		138.1	162.6	232
g	Motion range at the rear (deg)		425.6	492.5	559.4
h	Angle of the (J1) mechanical stop (deg)			2.8	
i	Angle of the (J2) mechanical stop (deg)			4.2	
j	Mechanical stop area (mm)		121.8	142.5	214
k	Mechanical stop area at the rear (mm)		433.5	504	574.5
	LS10-B**2S		200		
[[]	(J3) motion range (mm)	LS10-B**3S		300	
n Distance from the ba mounting face (mn	Distance from the base	LS10-B**2*		53	
	mounting face (mm)	LS10-B**3*		153	
р	(J3) mechanical stop area upper end (mm)	LS10-B***S		4	
q	(J3) mechanical stop area lower end (mm)			3	

#### Flange (standard)



Detailed view from A

Flange (cleanroom)



A = Centre of Joint #3 B = Motion range C = Maximum range D = Base mounting face

E = Area limited by a mechanical stop

Detailed view from A



Model name		LS2	0-B		
Model number		LS20-B804S (LS20-B804C)	LS20-BA04S (LS20-BA04C)		
Arm length (J1+J2)		800	1000		
Devide e el*1	Rated (kg)	1	0		
r ayıdau	Max. (kg)	2	0		
	(J1+J2) (mm)	+/- 0	.025		
Repeatability	(J3) mm	+/- (	0.01		
	(J4) deg	+/- (	D.01		
Standard cy	rcle time (s)*2	0.39	0.43		
	(J1+J2) mm/s	9940	11250		
Max. operation speed	(J3) mm/s	2300			
	(J4) deg/s	1400			
(J4) allowable	Rated (kg m <sup>2</sup> )	0.05			
moment of inertia*3	Max. (kg m²)	1			
(J3) dowr	n force (N)	250			
Mounti	ng type	Flo	Floor		
Installation E	Environment	Standard or Clean (ISO4, Not ESD applied)			
Weight (kg) (cables not included)		48	51		
Applicable	Controller	RC90 (nonpolarity)			
Installed wire fo	or customer use	D-sub 15 pin x1, 9 pin x1, RJ45 8 pin (CAT 5e) x1			
Installed pneumatic t	ube for customer use	Ø6mm x2, Ø4mm x1			
Power (V)		AC200-240			
Power Consumption*4	(kVA)	2.	4		
Cable length (m)*5		3, 5, 10			
Safety standard —		EU Directive Complied <sup>∗5</sup> , KC, KCs			
		ANSI/RIA R15.06-2012, NFPA 79 (2007 Edition)			

J1 = Axis 1 J3 = Axis 3

\*1 : Do not apply the load exceeding the maximum payload.

\*2 : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed).

\*3 : If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

\*4 : It depends on operating enviroment and operation program.

Internal use only:

\*5 : Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

J2 = Axis 2 J4 = Axis 4



#### Working range, LS20-B



#### Side view



**Rear view** 



#### Flange (standard)



#### Flange (cleanroom)



Detailed view from A

#### Working range, Epson SCARA LS20-B

			LS20-B804*	LS20-BA04*
а	Arm #1 + Arm #2 length (mm)		800	1000
b	Arm #1 length (mm)		350	550
С	Arm #2 length (mm)		4	50
d	(J1) motion angle (deg)		10	32
е	(J2) motion angle (deg)		15	52
f	Motion range (deg)		216.5	260.7
g	Motion range at the rear (deg)		684.2	818
h	Angle of the (J1) mechanical stop (deg)			2
i	Angle of the (J2) mechanical stop (deg)		3	.6
j	Mechanical stop area (mm)		195.3	232.8
k	Mechanical stop area at the rear (mm)		693.1	832.1
m	(10) motion range (mm)	LS20-B***S	420	
	(JS) MOUOITTAIIge (MIM)	LS20-B***C	39	90
n Distance from mounting f	Distance from the base	LS20-B***S	26	6.5
	mounting face (mm)	LS20-B***C	33	3.7
р	(J3) mechanical stop	LS20-B***S	2	4
	area upper end (mm)	LS20-B***C	3	.2
a	(J3) mechanical stop	LS20-B***S	(	3
q	area lower end (mm)	LS20-B***C	1	.8

A = Centre of Joint #3 B = Motion range

C = Maximum range D = Base mounting face

E = Area limited by a mechanical stop

## RC90-B controller



	RC90-B controller
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-bits Microprocessor
Hardware Option	Teach Pendant 2
Expansion card options	<ul> <li>I/O expansion</li> <li>24/16, 2 additional cards possible</li> <li>I/O slave fieldbus cards</li> <li>EtherCat, DeviceNet, Profibus, ProfiNet, CC-Link, Ethernet / IP, 1</li> <li>additional card of each type possible</li> <li>I/O fieldbus master cards</li> <li>Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible</li> <li>RS-232C serial interface</li> <li>2 channels per card, 2 additional cards possible</li> </ul>
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 180mm
Price	Included in SCARA Light price

Small, compact and flexible, the RC90-B is ideal for small work cells and can be installed in a control cabinet. This flexible application can be operated as a stand alone or integrated system.

Use as a slave within a network or as a master to control multiple robots and peripheral devices. It comes with serial interfaces, expansion I/O cards and an Ethernet port, but should you require additional inputs/outputs, you can expand your system cost-effectively and flexibly to suit your needs.



TP2 mobile operating unit



I/O expansion

I/O expansion card

I/O expansion cable kit

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



#### **RS-232C** serial interface



**Fieldbus cards** 

Slave Profibus, ProfiNet, DeviceNet, CC-Link, EtherCat

EtherNet/IP

Master Profibus, DeviceNet, Ethernet/IP

## Epson RC+ 7.0 development interface powerful, efficient, intuitive

Thanks to its intuitive Windows control interface, open structure and integrated image processing, programming applications is incredibly quick and easy.

The unique Epson-developed SPEL+ script language, enables you to program a wide range of robot motions. from 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 any robot implementation.

#### Integrated software tools for the Epson RC+ 7.0 development environment

#### Command

One-line command editor.

#### Compiler

Programme checking (syntax, definition, value range, and many more).

#### Debugger

Programme 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. Allows you to 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 power 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)

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)

Reliably detect fonts and symbols and check printing - even under challenging conditions.

#### PG motion system

Read conveyor speeds via encoders.

#### RC+ API

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.

## About Epson

Epson Robotic Solutions is one of the leading suppliers of high-tech robot systems that are renowned worldwide for their reliability. The product range includes six-axis, SCARA, entry-level LS-, T- and VT-series robots. Also, the special Epson-developed Spider and N-series robots as well as the pioneering Dual Arm robot. Added to this are image processing controls and the Epson Force Sensor for force-controlled applications.

This gives Epson Robotic Solutions one of the most comprehensive ranges of high-precision industrial robots in the world, making them a technological pioneer for intelligently controlled automation processes.

#### **Technological pioneer**

#### 1982

Epson SCARA robots freely available in Japan for the first time

#### 1986

First cleanroom robot class 1

1997

First PC-based controller

#### 2008

Inventor of the right or left arm-optimised G3 SCARA robot

#### 2009

Inventor of the spider – a unique SCARA robot with no dead zones

#### 2013

First application of Epson QMEMS<sup>®</sup> sensors in robotics, reducing 6-axis kinematics vibrations

#### 2014

Epson Compact Vision CV2: Epson's own ultra-fast image processing computer

#### 2016

Epson N2 series: World's first 6-axis robot with folding arm – extremely compact and space-saving

#### 2017

Epson Dual Arm robot with an arm geometry inspired by human physiology, as well as integrated sensors such as cameras, force sensors, and accelerometers

#### Pre- and after-sales support

Feasibility studies for maximum planning and project security

Support for planning and implementation

Introductory seminars, programming/maintenance courses, operator training

Inspection and individual maintenance concepts

Hotline service, on-site repair service

Central spare part stocking

# Ensure your production line hits top gear

#### Epson robot systems: precise, fast and reliable

Our robots pallet, saw, mill, drill, grind, assemble, move and build together. They work precisely and at a breathtaking speed in all these and many other applications – often for up to 24 hours a day.

Our product portfolio includes one of the most extensive SCARA model ranges worldwide, 6-axis robots, controllers and software.





#### **Epson Spider robots**

The economic miracle. Thanks to its unique design, the Epson Spider can reach every corner of its workspace while achieving unmatched cycle times.

#### **Epson SCARA robots**

Precise working even at high speeds. Compact and powerful, Epson has the world's largest range of SCARA robots – with over 400 models.

#### Discover the full potential of your Epson robot systems

As a service, we offer a comprehensive pre and after-sales support program, including:

Feasibility studies for maximum planning and project security

Support for planning and implementation

Introductory seminars, programming/maintenance courses, operator training

Inspection and individual maintenance concepts

Hotline service, on-site repair service

Central spare part stocking



#### **Epson controllers**

Strong performance in a small space. Epson controllers are based on a robust, integrated system and can control manipulators and peripherals.



#### Epson 6-axis robot

Flexibility through rotating axes. Unrivalled point and track accuracy enable complex work processes to be precisely executed.

### Epson Industrial Solutions Centre – find your solution







![](_page_19_Picture_4.jpeg)

Experience all our Epson robots in action. Build, simulate and improve your automation application in a workshop cell, 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.

#### Make an appointment

Call us on +49 2159 538 1800

or send an email to info.rs@epson.de

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Epson America Inc. www.epsonrobots.com Seiko Epson Corp http://global.epson.com/products/robots/ Epson China Co, Ltd. www.epson.com.cn/robots/

#### Committed to corporate and social responsibility

Epson is committed to developing environmentally conscious products, which means that sustainability is considered from conception to completion. We help customers recognise the environmental gains brought on by technology, whether it is redefining manufacturing through innovative robotics, saving energy with our office printing technology or revolutionising textile printing with digital solutions.

We are committed to all 17 United Nations' sustainable development goals and to the aims of the circular economy. We offer sustainable innovations because we recognise that the choices we make as organisations, individuals or a society will be essential to our shared success.

The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States www.un.org/sustainabledevelopment

![](_page_19_Picture_18.jpeg)

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