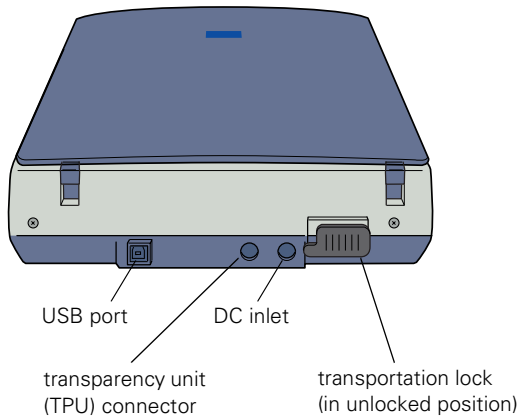
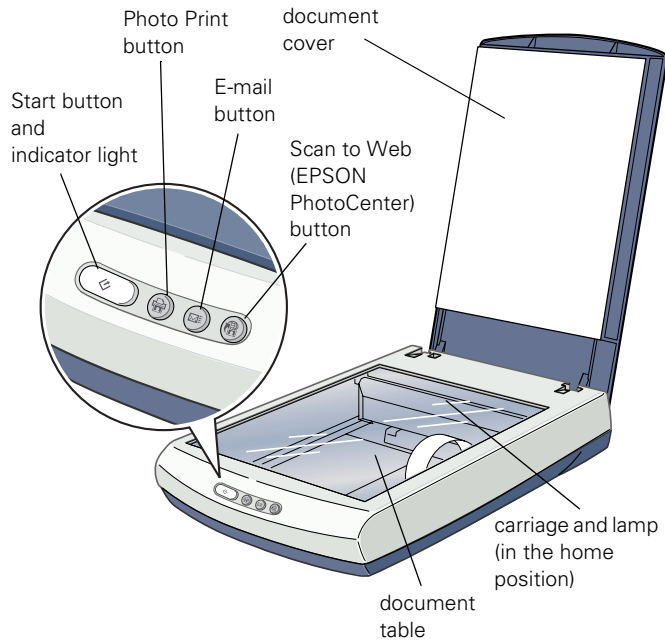
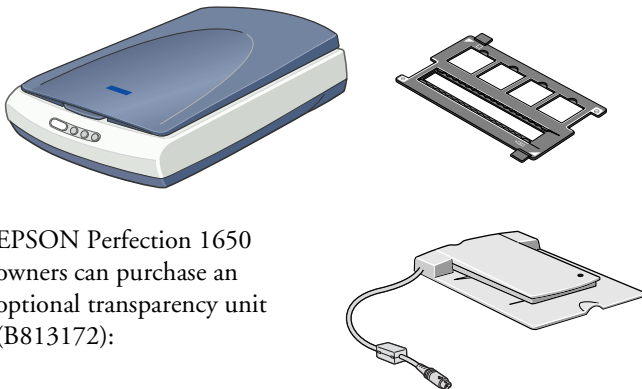


Scanner Parts



The EPSON Perfection 1650 PHOTO has a transparency unit built into the scanner lid and holder for 35 mm film and slides:



EPSON Perfection 1650 owners can purchase an optional transparency unit (B813172):

Scanner Specifications

Basic Specifications

Scanner type	Flatbed, color
Photoelectric device	Color CCD line sensor
Effective pixels	13600 × 18720 pixels at 1600 dpi, 100% scaling
Maximum document size	US letter or A4 size (8.5 × 11.7 inches [216 × 297 mm])
Optical resolution	1600 dpi
Maximum resolution*	1600 dpi (main scan) × 3200 dpi hardware (sub scan)
* The maximum hardware resolution of 1600 × 3200 dpi is achieved using EPSON's Micro Step Drive™ technology.	
Maximum interpolated resolution	12,800 dpi
Output resolution	50 to 12,800 dpi (50 to 6400 dpi in 1 dpi increments, 9600 dpi and 12,800 dpi performed with zoom function)
Speed (1600 dpi, draft mode)	Color: 10 msec/line Grayscale: 3.3 msec/line
Command level	ESC/I-B8, FS
Zoom	50 to 200% in 1% increments
Pixel depth	16 bits per pixel
Brightness	7 levels
Line art settings	Fixed threshold TET (Text Enhancement Technology, enable/disable selectable)
Digital halftoning	AAS (Auto Area Segmentation), enable/disable selectable 3 error diffusion modes (A, B, and C) and 4 dither patterns (A, B, C, and D) for bi-level and quad-level data (2 downloadable dither patterns)
Gamma correction	2 type for CRT display 3 types for printer output 1 type for user-defined

EPSON Perfection 1650/1650 PHOTO

Color correction	1 type for CRT display 3 types for printer output 1 type for user-defined (only user-defined color correction is available in EPSON TWAIN)
Interface	USB (Type B receptacle connector)
Light source	White cold cathode fluorescent lamp
Reliability	30,000 cycles of carriage movements (main unit MCBF)
Dimensions	EPSON Perfection 1650 Width: 10.9 inches (27.6 cm) Depth: 17.7 inches (45.0 cm) Height: 3.7 inches (9.3 cm) EPSON Perfection 1650 PHOTO Width: 10.9 inches (27.6 cm) Depth: 17.7 inches (45.0 cm) Height: 4.6 inches (11.6 cm)
Weight	EPSON Perfection 1650 Approx. 5.7 lb (2.6 kg) EPSON Perfection 1650 PHOTO Approx. 6.8 lb (3.1 kg)

Electrical

Input voltage range	DC 24 V
Rated input current	0.8 A
Power consumption	EPSON Perfection 1650 Approx. 15 W operating approx. 17 W with optional TPU approx. 6 W in power saving mode EPSON Perfection 1650 PHOTO Approx. 15 W operating approx. 6 W in power saving mode

Note: Check the label on the back of the scanner for voltage information.

Environmental

Temperature	Operation: 41 to 95 °F (5 to 35 °C) Storage: -13 to 140 °F (-25 to 60 °C)
Humidity (without condensation)	Operation: 10% to 80% Storage: 10% to 85%
Operating conditions	Ordinary office or home conditions; avoid extreme dust, direct sunlight, and strong light sources.

Safety Approvals

Safety Standards

120 V model	UL 1950
	EMC FCC part 15 subpart B class B CSA C108.8 class B

USB Interface

Interface type	Universal Serial Bus Specification Revision 1.1
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Configuration

Element	Description
Configuration	Characteristics: Self-powered Remote wake up feature: Not supported Maximum power consumption from VBUS: 2mA (5V)
Interface	No alternate setting Class: Vendor specific
Endpoint 1	Bulk IN transfer Maximum data transfer size: 64 bytes
Endpoint 2	Bulk OUT transfer Maximum data transfer size: 64 bytes
String Descriptor	Language ID: US English 1: Manufacturer: "EPSON" 2: Product: "EPSON Scanner"

Electrical standard	Full Speed mode (12Mbit/s) of Universal Serial Bus Specification Revision 1.1
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Connector type	One receptacle (Type B)
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Connector pin arrangement

Pin number	Signal	Connector
1	VCC	
2	-DATA	
3	+DATA	
4	GND	

Initialization methods	The scanner can be initialized (returned to a fixed set of conditions) in the following ways:
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Hardware initialization	<input type="checkbox"/> The scanner is plugged in. <input type="checkbox"/> The USB cable is unplugged, then plugged into the USB port on the scanner.
Software initialization	<input type="checkbox"/> Software sends the ESC @ (initialize the scanner) command. <input type="checkbox"/> The scanner receives a Bus Reset from the USB interface.

AC Adapter Specifications

Basic Specifications

Temperature	Operation: 41 to 95 °F (5 to 35 °C)
Dimensions	2.3 × 4.3 × 3.4 inches (5.8 × 10.8 × 3.4 cm)

Electrical

Rated input voltage	100 to 120 V
Rated input current	0.7 A
Rated output voltage	DC 24 V
Rated output current	0.8 A (1.0 A max.)
Rated frequency	50 to 60 Hz
Input frequency range	49.5 to 60.5 Hz

Safety Approvals

Safety standards	UL 1950 UL 1310 CSA C22.2 No. 950, No 223
EMC	FCC part 15 subpart B class B CSA C108.8 class B

Integrated Transparency Unit Specifications

If you have the EPSON Perfection 1650 PHOTO, the transparency unit is built into the scanner lid.

Electrical	Supply voltage: DC 24 V ±10% V Rated current: 0.5 A
Temperature	Operation: 41 to 95 °F (5 to 35 °C) Storage: -13 to 140 °F (-25 to 60 °C)
Humidity (without condensation)	Operation: 10% to 80% Storage: 10% to 85%
Document specifications	35 mm strip film (negative, positive) 35 mm slides (negative, positive)
Readable area	1.9 × 9.1 inches (48.26 × 231.1 mm)

Optional Transparency Unit Specifications

If you have the EPSON Perfection 1650, you can purchase a separate transparency unit (B813172) to scan positive and negative transparent materials—35 mm slides, filmstrips, and film up to 4 × 5 inches in size.



This transparency unit is a separate piece; it is not part of the scanner lid as it is with the EPSON Perfection 1650 PHOTO.

Dimensions	Width: 8.7 inches (222 mm) Depth: 12.0 inches (305 mm) Height: 1.4 inches (36 mm)
Weight	1.5 lb (0.7 kg)
Maximum readable area	3.6 × 4.6 inches ([93 × 118 mm] size of 4 × 5-inch film holder opening)
Electrical	Supply voltage: DC 24 V ±10% V Rated current: 0.5 A
Reliability	10,000 hours for light source
Temperature	Operation: 41 to 95 °F (5 to 35 °C) Storage: -13 to 140 °F (-25 to 60 °C)
Humidity (without condensation)	Operation: 10% to 80% Storage: 10% to 85%
Operating conditions	Ordinary office or home conditions; avoid extreme dust, direct sunlight, and strong light sources.
Document specifications	Transparencies up to 4 × 5 inches (negative film, positive film) 35 mm strip film (negative, positive) 35 mm slides (negative, positive) Brownie size strip film (120/220 size, 6 × 9 cm)



Scanner Buttons

The scanner's buttons let you perform one-touch scanning with EPSON Smart Panel™. The buttons are described below:



Start	Press the Start button on the scanner to start EPSON Smart Panel (default).
Photo Print	Press the Photo Print button to automatically scan and print a photo.
E-Mail	Press the E-Mail button to scan your image and send it as an e-mail attachment.
Scan to Web	Press the Scan to Web button to scan an image and upload it to the EPSON photo-sharing site, EPSON PhotoCenter SM .

Using EPSON Smart Panel

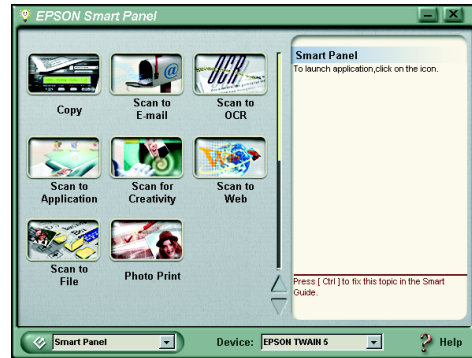
Follow these steps to use EPSON Smart Panel to scan documents or photos:

1. Place the original document(s) face down on the document table.
2. Do one of the following to open the Smart Panel:
 - Press the  Start button on your scanner.
 - Click the  Smart Panel icon on the desktop.
 - On a Macintosh®, you can also open the Apple® menu and select EPSON SMART PANEL.



The  Start button is set to open EPSON Smart Panel by default. However, you can assign the  Start button to automatically open any of the Smart Panel applications.

3. Click the icon for your desired scanning application. The window for that option appears and lets you adjust settings for your scan. Follow the on-screen steps for each option.



Keep the following in mind when using Smart Panel:

- If you select Copy or Photo Print, make sure your printer is turned on and the correct paper type and size is loaded in your printer.
- Scan to E-mail requires a MAPI-compliant e-mail program (AOL is not MAPI compliant).

For instructions on using each of the Smart Panel applications, see the electronic manual for EPSON Smart Panel.

Selecting TWAIN Settings

The illustration below shows the different settings you can adjust in the EPSON TWAIN window, and the preferred order you should adjust them in. Detailed descriptions are given in the electronic *Reference Guide*. Manually adjust settings in the EPSON TWAIN window in the following order:



The most important thing to remember when scanning is to select the correct image type and best resolution for your scan. For more detailed information on making settings in EPSON TWAIN driver, see the electronic *Reference Guide*.

- 1 Select the basic settings:
Document Source
Image Type
Destination
Resolution

- 2 Preview your image (default)

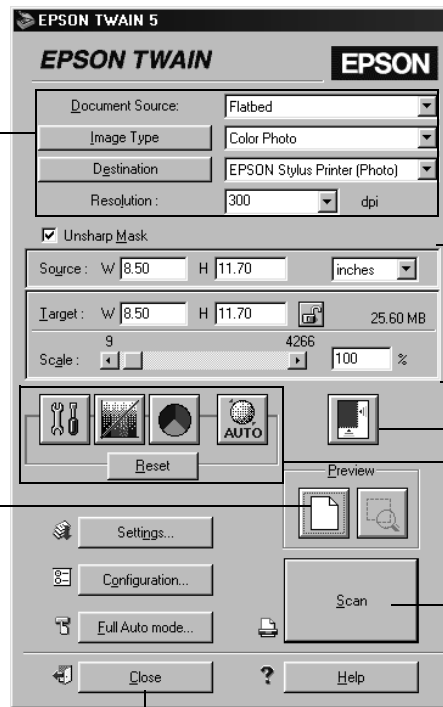
- 3 Automatically set the scan area for your image using Auto Locate

- 4 Size or scale the image


- 5 Customize your settings and configuration, and use color management


- 6 Scan the image into your application

- 7 Close EPSON TWAIN



Scanner Light

The scanner has one indicator light. (The indicator light is part of the  Start button.)

The  light indicates the status of the scanner, as described below.

Light	Color	Status
On	Green	The scanner is ready to scan images.
Flashing	Green	The scanner is initializing or is busy scanning.
Flashing	Red	<p>If you are using the EPSON Perfection 1650 PHOTO and are scanning transparencies, make sure you've removed the reflective document mat.</p> <p>The scanner may not be properly connected to the computer. Unplug the scanner from its power source, remove the USB cable, and then plug them back in.</p> <p>If this does not eliminate the error, one of the following may be the problem and you need to consult your dealer or EPSON:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The fluorescent lamp needs to be replaced. <input type="checkbox"/> The scanner is malfunctioning.
Off	—	The scanner or AC adapter is unplugged.

Related Documentation

CPD-12466	EPSON Perfection 1250/1650 <i>Start Here</i> poster
CPD-12467	EPSON Perfection 1250/1650 <i>Scanner Basics</i>
CPD-12468	EPSON Perfection 1250/1650 scanner software CD-ROM
—	<i>Reference Guide</i> (HTML)
—	EPSON Smart Panel <i>User's Manual</i> (HTML)
TM-PERF1650	EPSON Perfection 1650/1650 PHOTO Service Manual
PL-PERF1650	EPSON Perfection 1650 Parts List
PL-PHOTO1650	EPSON Perfection 1650 PHOTO Parts List
PL-B813172	Optional Transparency Unit Parts List