

EFI Spectrometer™ ES-1000 Technical Specifications

Supported measurements modes:

Reflectance single measurement
Reflectance strip measurement with automatic patch detection
Emission

General:

Spectral analyzer: Holographic diffraction grating with diode array
Interface: USB 1.1
Physical dimensions: 151 mm x 66 mm x 67 mm (length x width x height)
6 x 2.6 x 2.6 inches
Weight: 185 g (6.5 oz)
Accessories included: Calibration cradle with white reference; USB cable;
CRT monitor holder; LCD flat panel holder;
Patch positioning guide; Strip positioning guide

Measurements:

Spectral range: 380 - 730 nm
Optical bandwidth: 10 nm
Sampling interval: 3.5 nm (100 bands)
Spectral reporting: 10 nm
Analog / digital converter: 16 bits
Measurement aperture: 4.5 mm
Measurement range: 0...300 cd/m²
Short term repeatability (emission): x, y: +/- 0.002 typical (CRT5000°K white patch 80 cd/m²)
Measurement time (emission): 1 second

Measurements (reflection mode only):

Measurement geometry: 45 / 0 ring optics, DIN 5033
Sample Diameter: Illumination diameter 3 mm; pickup diameter 4.5 mm
Light source: Gas filled tungsten (neutral incandescent lamp Type A)
Filtering: UV filter
Inter-instrument agreement: Average 0.4 Δe*94, max 1.0 Δe*94
(deviation from manufacturing standard at 23°C
for individual measurements on 12 BCRA tiles (D50, 2°))
Short term repeatability: 0.1 Δe*94 (D50, 2°),
(mean value of 10 measurements every 3 seconds on white)
Patch mode measurement time: 0.25 second typical
Strip mode measurement frequency: Up to 100 spectral readings per second
Recommended patch dimensions: 10 mm in scanning direction
Average measurement time: 6 patches per second typical

Power and environmental conditions:

Power required: Powered by USB, no additional charger required
USB 1.1 high power device
Operating temperature: 10°C to 35°C (50°F to 95°F)
Storage temperature: -10°C to 50°C (14°F to 122°F)
Humidity: 0 - 80% non-condensing