



ESElog – Fluorescence Detector

The ESElog is a high-performance fluorescence instrument for measurement of up to 2 fluorescent dyes and is designed for use in a wide range of laboratory applications. Due to the lack of moving parts, the low operating voltage, and the confocal optics, this product can be easily and rapidly integrated into various measurement processes. The ESElog is available as a standard product or can be customized.

1 Technical specifications

1.1 Performance

Definition	Description
Absolute detection limit	e.g. $<10^{-9}$ mol/l fluorescein-sodium in 0.1 M sodium hydroxide
Dynamic range	0 .. 2500 a.u.* linear range Adjustable range via Software by factor 10 Adjustable range via hardware by factor 1000
Noise level	<3 a.u. *
Excitation	High performance-LED with feedback loop for stabilization
Detection	High amplification with low-noise, precision Si-Photodiode
Measurement intervals	0.1 seconds to hours Signal settling time ("On-Delay"): 300 ms Signal fall time ("Off-Delay"): 300 ms Measurement frequency in "scan mode": 100 Hz
Detection area	1 mm ² to 25 mm ² (depends on working distance and used front lens)
Distance (detector/object)	6 mm to 24 mm (depends on used front lens)
Available excitation wavelengths**	365 nm .. 680 nm (two different spectral excitation wavelengths per detector)
Available detection wavelengths**	460 nm .. 820 nm (two different spectral detection wavelengths per detector)

* a.u. = arbitrary unit

**Typical dyes: Alexa Fluor® 647, Pacific Blue EGFP, 5- FAM™, ROX, HEX, Cy³, Cy5, TAMRA, FITC

1.2 Environmental operating conditions

Definition	Description
Temperature range	+15°C to +35°C
Air humidity	20% - 80% rel. humidity, without condensation
Air pressure	300 - 1060 hPa

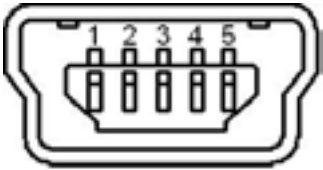
1.3 Mechanics

Definition	Description
Housing	Aluminium, nickel-plated
Dimensions (without adapter)	82x52x17.8 mm ³
Weight	135 g

1.4 Electronics

Definition	Description
Power supply	+5 V DC $\pm 5\%$, ripple ≤ 20 mV
Power input	Detector: 50 mA max LED: ≤ 150 mA (depending on LED)
Interface	Serial, 57600 baud, 1 start byte, 8 data bytes, no parity, 1 stop byte
Interface models	TTL-level (3.3 V/5 V tolerant) RS232-level
Connector	USB connection via a 5 pin mini-USB jack.

2 USB 2.0 Mini-B port

	Pin	Name	Description
	1	VCC	Power supply (+5V)
	2	D-	Inverted data line
	3	D+	Non-inverted data line
	4	NC	Not connected
	5	GND	Common ground for signal and power

3 Physical dimensions

