

10 Technical data

10.1 Power supply

Power supply	100 to 240 V \pm 10 % / 50 to 60 Hz \pm 5 %
Overvoltage category	IEC 61010-1 category II
Degree of contamination:	IEC 61010-1 category II
Power consumption	approx. 20 W during operation, approx. 10 W in standby mode
Permitted mains interruption	approx. 10 ms at 90 V approx. 20 ms at 220 V
Fuses	T 1A/250 V, 5 mm x 20 mm (2 off)

10.2 Ambient conditions

Operation	Ambient temperature: 15 to 35 °C Rel. humidity: 15 to 70% Atmospheric pressure: 86 to 106 kPa
Storage	Ambient temperature: -25 to 70 °C Rel. humidity: 15 to 70% Atmospheric pressure: 30 to 106 kPa
Not tropicalized. Protect against direct sunlight.	

10.3 Weight / dimensions

Weight	3 kg (packaged: 4.8 kg)
Dimensions	Width: 200 mm (packaged: 290 mm) Depth: 320 mm (packaged: 430 mm) Height: 100 mm (packaged: 200 mm)
Space required	Width: 400 mm (or 650 mm including printer) Depth: 500 mm

10.4 Interfaces

Interface for printer and PC	serial RS-232
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The printer to be connected must meet the requirements of EN 60950 or UL 1950.

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10.5 Photometer

Measuring principle	Absorption single beam photometer with reference beam and several fixed wavelengths
Light source	Xenon flash light
Monochromator	Holographic concave grating
Beam receiver	Silicon photo diodes
Wavelengths	230, 260, 280, 340, 405, 490, 550, 595, 650 nm
Wavelength selection	Dependent on method, controlled by program
Spectral bandwidth	5 nm at 230 to 340 nm 7 nm at 405 to 650 nm
Systematic wavelength error	± 1 nm at 230 to 280 nm ± 2 nm at 340 to 650 nm
Photometric measuring range	Quartz glass cuvette: <ul style="list-style-type: none"> • A = 0 to 3, except: • A = 0 to 2 at 340 nm • Only for dye methods: A = 0 to 2 at 550/650 nm UVette (Eppendorf): <ul style="list-style-type: none"> • A = 0 to 2.5 at 230 nm • A = 0 to 2.6 at 260 nm • A = 0 to 2.8 at 280 nm • Other values see quartz glass cuvette
Reading accuracy	$\Delta A = 0.001$
Random photometric error	≤ 0.002 at A = 0 ≤ 0.005 at A = 1
Systematic photometric error	$\pm 1\%$ at A = 1
Stray light component	$< 0.05\%$

10.6 Other technical parameters

Cuvette material	For DNA, RNA, Oligo, Protein UV, Assay 340: Quartz glass or UV transparent plastic (UVette by Eppendorf) For OD600, Bradford, Lowry, BCA, Assay 405, Assay 490: Glass or plastic
Cuvette shaft	12.5 mm x 12,5 mm, not temperature-controlled
Overall cuvette height	Min. 36 mm
Height of the light beam in the cuvette	8.5mm
Light beam in the cuvette	Width: 1 mm Height: 1.5 mm
Keyboard	19 foil keys
Display	Illuminated graphic display, 33 mm x 60 mm
Operator guidance language	English, French, German
Result output	Via display and printer: Absorbance, concentration, ratio, FOI
Standards and regulations	According to VDE, CE, IEC 1010-1

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10.7 Application parameters

Method memory	32 preprogrammed, modifiable method programs
Measuring methods	End point against blank Dye methods: parallel measurement of biomolecule and dye label
Method-dependent evaluation	absorbance concentration via factor concentration via calibration with 1 to 10 standards: <ul style="list-style-type: none"> • single point calibration (1 standard) • linear regression (2 to 10 standards) • non-linear regression (polynome of 3rd degree; 4 or 5 to 10 standards (see <i>Evaluation procedure</i> on page 43)). • 1x, 2x or 3x measurement for nucleic acids: <ul style="list-style-type: none"> • ratio 260/280 • ratio 260/230 • molar concentration • total yield for dye methods: <ul style="list-style-type: none"> • FOI (frequency of incorporation; marking density)
Calibration memory	For all calibration methods
Measured value memory	For 100 results with absorbance and ratio values, sample number, sample dilution, date and time