



General Operation

Operating panel	Membrane keypad with 4 arrow, 7 function, and 11 number keys
Display	4 lines by 20 characters LCD
Self-diagnosis	Checks filter disk, plate transport, electronics, main PC board, battery, memory, and the optional internal printer (when available)
Warm-up time	3 min
Reading speed	
Fast read mode	6 sec single wavelength, 10 sec dual wavelength
Step read mode	15 sec single wavelength, 30 sec dual wavelength
Mixing capability	3-speed setting, programmable time 0–999 sec
Compatible plates	Polystyrene flat-, U-, and V-bottom plates, 8- and 12-well strip plates
Assay blanks	User-defined or stored assay template
Data storage buffer	Last 10 plate data for endpoint, or last 30 plate data for kinetic reads
Report types	Raw absorbance, matrix limit, cutoff, concentration, curve fit, difference, and kinetic
Internal printer (optional)	Thermal printer with 112 mm paper width, 40 column, 9 x 8/ (graphic/text mode) dot matrix
Computer interface	Bidirectional RS-232C serial communication port, 9-pin D-sub plug
Memory backup	5-year lithium battery

Ordering Information

Catalog #	Product Description
168-1000	Model 680 Microplate Reader, 100–240 V, 50/60 Hz, includes 415, 450, 490, and 655 nm filters (installed), power cord, spare fuse, dust cover, instructions
168-1001	Model 680 Microplate Reader with Temperature Control, 100–240 V, 50/60 Hz, includes 415, 450, 490, and 655 nm filters (installed), power cord, spare fuse, dust cover, instructions
168-1002	Model 680 Microplate Reader with Internal Thermal Printer, 100–240 V, 50/60 Hz, includes 415, 450, 490, and 655 nm filters (installed), 1 roll of printer paper, power cord, spare fuse, dust cover, instructions
168-1003	Model 680 Microplate Reader with Temperature Control and Internal Thermal Printer, 100–240 V, 50/60 Hz, includes 415, 450, 490, and 655 nm filters (installed), 1 roll of printer paper, power cord, spare fuse, dust cover, instructions
168-1011	405 nm Filter, for Model 680 reader
168-1013	415 nm Filter, for Model 680 reader
168-1020	450 nm Filter, for Model 680 reader
168-1028	490 nm Filter, for Model 680 reader
168-1038	540 nm Filter, for Model 680 reader
168-1040	550 nm Filter, for Model 680 reader
168-1044	570 nm Filter, for Model 680 reader
168-1049	595 nm Filter, for Model 680 reader
168-1056	630 nm Filter, for Model 680 reader
168-1061	655 nm Filter, for Model 680 reader
168-1080	750 nm Filter, for Model 680 reader
168-1005	PC Serial Cable, for Model 680 reader
168-1006	Replacement Lamp for Model 680 Reader
168-1007	Printer Paper for Model 680 Reader, 2 rolls
170-9520	Microplate Manager® 5.2/PC Data Analysis Software

For other filter wavelengths, please inquire.

Optical

Photometric methods	Single and dual wavelength
Photodetectors	8 silicon photodiode detectors for measurement, 120 reference
Light source	Tungsten halogen 20 W, 3,000 hr life
Spectral range	400–750 nm
Filter capacity	8 interference filters
Bandwidth	10 nm
Standard filters	415, 450, 490, and 655 nm
Optional filters	405, 540, 550, 570, 595, 630, and 750 nm; for additional filters, please inquire

Technical

Indication range	0.000–3.500 OD
Resolution	0.001 OD
Accuracy	±1.0%, or 0.010 from 0.000 to 3.000 OD at 490 nm
Linearity	±1.0% from 0.000 to 2.000 OD, ±2.0% from 2.000 to 3.000 OD
Reproducibility	1.0%, or 0.005 OD from 0.000 to 2.000 OD, 1.5% from 2.000 to 3.000 OD
Channel-to-channel error	1.5%, or 0.005 OD from 0.000 to 3.000 OD
Stability and drift	0.010 OD at OD = 1 with single wavelength reading

Physical

Optional Incubator

Temperature control	25°C or ambient + 5°C, up to 45°C
Incubator set point	25–45°C, 0.1°C step
Accuracy	±0.5°C when set point = 37°C at ambient temperature of 25°C
Well-to-well uniformity	±0.7°C when set point = 37°C at ambient temperature of 25°C
Warm-up time	<5 min when set point = 37°C at ambient temperature of 25°C

Others

Electrical voltage	100–240 VAC, 50/60 Hz
Power consumption	100 VA maximum
Dimensions	34 x 33 x 15 cm (W x D x H)
Weight	5 kg (basic reader); 5.5 kg (fully loaded reader)
Operating temperature	5–35°C
Storage temperature	-20 to 50°C
Operating and storage humidity	0–95% relative humidity without condensation

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Web site www.bio-rad.com USA (800) 4BIORAD Australia 02 9914 2800 Austria (01)-877 89 01 Belgium 09-385 55 11 Brazil 55 21 507 6191
Canada (905) 712-2771 China (86-21) 63052255 Denmark 45 44 52-1000 Finland 358 (0)9 804 2200 France 01 47 95 69 65 Germany 089 318 84-177
Hong Kong 852-2789-3300 India (91-124) 6398112/113/114, 6450092/93 Israel 03 951 4127 Italy 39 02 216091 Japan 03-5811-6270
Korea 82-2-3473-4460 Latin America 305-894-5950 Mexico 52 5 534 2552 to 54 The Netherlands 0318-540666 New Zealand 64-9-4152280
Norway 47-23-38-41-30 Portugal 351-21-472-7700 Russia 7 095 721 1404 Singapore 65-2729877 South Africa 00 27 11 4428508 Spain 590 5200
Sweden 46 (0)8-55 51 27 00 Switzerland 061 717-9555 United Kingdom 0800-181134

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