DEN-1 and DEN-1B, Densitometers (suspension turbidity detector)

Densitometers are designed for measurement of cell suspension's turbidity in the range:

DEN-1: 0.3–5.0 McFarland units (100×10^6–150×10^7 cells/ml);

DEN-1B: 0.0–6.0 McFarland units (0–180×10^7 cells/ml);

Densitometers provide the opportunity to measure solution turbidity in a wider range (up to 15.0 McFarland units) however, it is necessary to remember that in this case the standard deviation values increase.

A densitometer is used for measurement of cell concentration (bacterial, yeast cells) during fermentation process, determination of microorganism sensitivity to antibiotics, microorganism identification using various test-systems, for measurement of absorption at the definite wavelength, as well as for quantitative estimation of concentration of colour solution, absorbing green light.

The operation principle is based on measurement of optical density with digital presentation of results in McFarland units. The unit is calibrated at the factory and keeps calibration without power supply. However, if necessary it is possible to calibrate the unit by 2–6 points in 0.5–5.0 McFarland unit range. Both commercial stand- ards (e.g. produced by BioMerieux, Lachema, etc.) and the cell suspensions prepared in a laboratory can be used for calibration.

DEN-1B

DEN-1

Ⓐ *A-16*

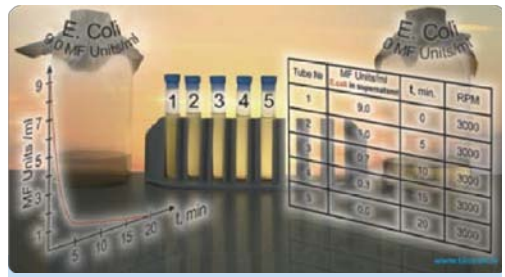
Following calibration kits are available on request:

- **CKG16** for glass tubes with diameter 16 mm;
- **CKG18** for glass tubes with diameter 18 mm.

Two versions of the product are available:

1. **DEN-1** powered from external energy supply;
2. **DEN-1B** powered both from external energy supply and from batteries (AA). Besides, **DEN-1B** operates with higher precision of measurements (up to 0.01 McF).

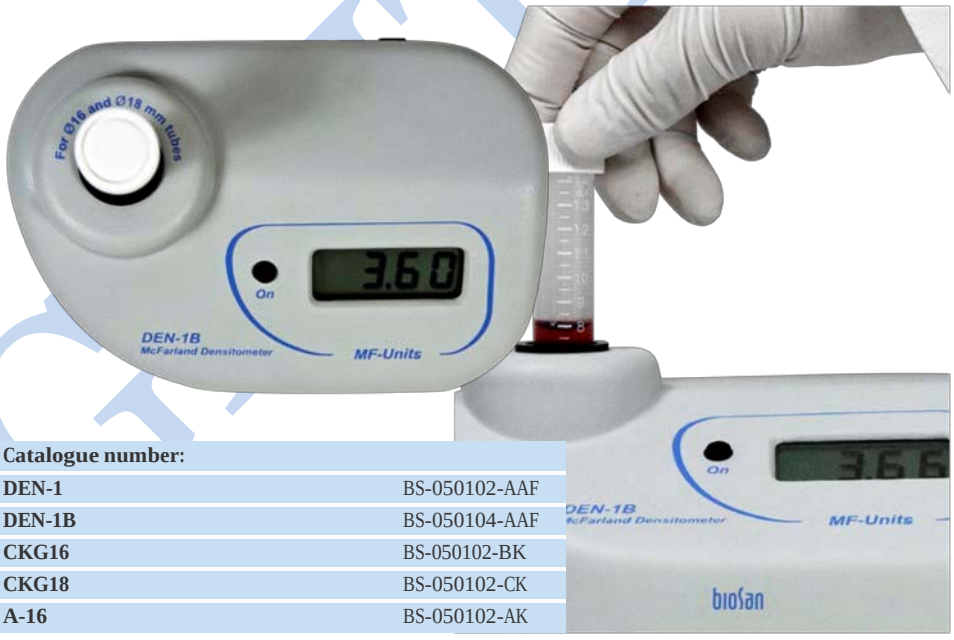
DEN-1B rear side with calibration control



Application of DEN-1 for determining concentration of microbial cells of supernatant in tubes during centrifugation. Turbidity is determined in McFarland units.

Specifications:		
Model	**DEN-1**	**DEN-1B**
Light source	Light diode	
Wavelength	λ = 565 ±15 nm	
Measurement range	0.3–15.0 McF	0.00–15.00 McF
Display resolution	0.1 McF	0.01 McF
Precision	±3%	
Measurement time	1 sec	
Sample volume	not less than 2 ml	
Tube external diameter	18 mm (without adapter) or 16 mm (using A-16 adaptor)	
Display	LED	LCD
McFarland unit standard deviation	0.5 ± 0.1 McF 3.0 ± 0.1 McF 6.0 ± 0.2 McF 7.5 ± 0.2 McF	0.0 ± 0.1 McF 0.5 ± 0.1 McF 3.0 ± 0.1 McF 6.0 ± 0.2 McF 7.5 ± 0.2 McF
Overall dimensions (W × D × H)	165 × 115 × 75 mm	
Weight, not more	0.9 kg	
Independent power supply	—	3 × AA batteries
Input current/power consumption	12 V, 80 mA / 1 W	12 V, 7 mA / 0.1 W
External power supply	Input AC 100-240 V, 50/60 Hz; Output DC 12V	Input AC 100-240 V, 50/60 Hz, Output DC 12V
Standard set	External power supply	External power supply and 3 × AA batteries

DEN-1B



Catalogue number:	
DEN-1	BS-050102-AAF
DEN-1B	BS-050104-AAF
CKG16	BS-050102-BK
CKG18	BS-050102-CK
A-16	BS-050102-AK

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