

# 15 Densitometers

## Densitometers

DEN-1 for 0.5 - 4.0 McFarland units

DEN-1B for 0.00 - >7.5 McFarland units, battery powered



# Densitometers

## DEN-1 and DEN-1B

Compact and efficient benchtop densitometers for measuring turbidity of cell suspensions in a variety of life-science applications.

The densitometers are designed and factory calibrated to measure turbidity in the range of 0.5 to 4.0 McFarland units (DEN-1) 0.00 to >7.5 McFarland units (DEN-1B) with a small standard deviation. If required, they can deliver a wider measurement range (up to 15.00 McFarland units), but with a greater standard deviation.

- Measurement range: 0.5 to 4.0 McFarland units (DEN-1), 0.00 to >7.5 McFarland units (DEN-1B)
- Measurement time: 1 second
- Precision:  $\pm 3\%$
- Standard deviation at 3.00 McF units:  $\pm 0.1$  McF
- User calibration option



Designed for tubes with an outer diameter of 18 mm. 16 mm tubes can also be accommodated by using the optional tube adaptor D16 (included)

Factory calibrated – retains calibration without power supply. Can be user calibrated with commercial standards or cell suspensions prepared in the laboratory

DEN-1 and DEN-1B units are calibrated for operation in range 0.5-4 McF and 0->7.5McF, but it is possible to measure turbidity from 0McF to 15McF (note: the standard deviation of the values increases).



DEN-1B densitometer shown (suspension turbidity meter)

Readings, conveniently shown in McFarland units, are clearly visible on the bright LED display

Extremely compact design with small footprint and low profile – fits easily into the smallest workspace

Powered by 3 x AA batteries (DEN-1B only) or via external 12v power supply



Note: 1 McF unit is approximately equal to  $3^8 \times 10$  CFU/ml

### Applications:

- Life-science - typical applications include determining concentration of cells (bacterial and yeast cells) in the fermentation process, detecting the susceptibility of micro-organisms to antibiotics, identifying micro-organisms with various test systems, and measuring optical density at fixed wavelength

Densitometers » DEN-1 and DEN-1B » Specifications

Densitometers – specification

		Densitometers	
		DEN-1	DEN-1B
		 <p>h: 75 mm d: 115 mm w: 165 mm weight: 0.7 kg</p>	 <p>h: 75 mm d: 115 mm w: 165 mm weight: 0.7 kg</p>
Light source		LED	
Wavelength	λnm	565 ± 15	
Range	McFarland units	0.3 to 15.0	0.00 to 15.00
Precision		±3%	
Measurement time	sec	1	
Tube diameter,	external diameter	18	
	with D16 adaptor	16	
Sample volume	ml	≥2	
Display / display resolution		LED / 0.1 McF	LCD / 0.01 McF
External power supply		12V	
Independant power supply		-	3 x AA batteries
Ambient temperature range	°C	+ 4 to 40	
Power supply	V	100-240	

Accessories

<p><b>DEN MCF STDS</b> set of liquid McFarland standards in 16mm ø glass tubes. 0.5 / 1.0 / 2.0 / 3.0 / 4.0 can be decanted into an alternative tube (shelf-life no longer valid). Requires D16 adaptor, supplied with DEN-1 / DEN-1B.</p>	•
<p><b>DEN MCF 18 STDS</b> set of gel McFarland standards in 18mm ø glass tubes. 0.0 / 0.5 / 3.0 / 6.0 / &gt;7.5.</p>	•
<p><b>D16</b> spare tube adaptor for tubes with 16mm outer diameter (included as standard)</p>	•