# granto



# Orbital Shaker-Incubators

# Compact shaker-incubator

ES-20 with 10mm orbit

Temperature control range: ambient +5°C to 42°C

#### Shaker-incubator

ES-80 with 20mm orbit

Temperature control range: ambient +5°C to 80°C

#### ES-20

#### Compact shaker-incubator

Versatile and programmable bench-top orbital shaker-incubator for mixing and incubating biological cultures and samples in a variety of flasks and vessels.

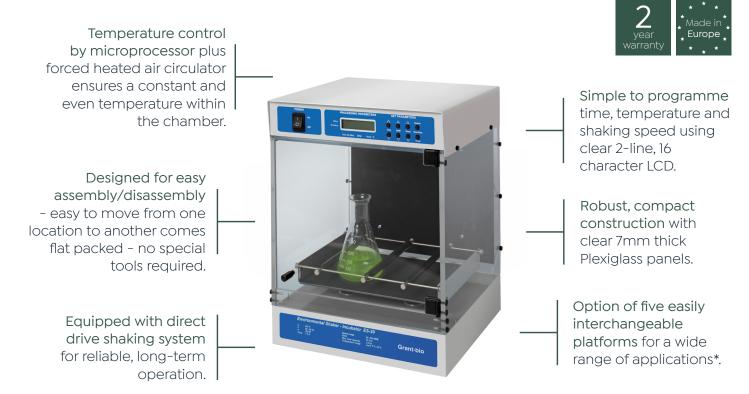
Temperature setting range: +25°C to 42°C (16 min heat up time)

Variable speed: 50 - 250rpm

Digital control of time, temperature and shaking speed for accuracy and repeatability

Interchangeable platforms for shaking/incubating different vessels\*

Load up to 2.5kg



<sup>\*</sup> Platforms sold separately

#### **Applications**

• Life-sciences - suitable for growing cell cultures in flasks, extracting tissue samples at physiological temperatures, sample preparation processes, mixing of biological liquids as well as the incubation and cultivation of biological liquids, growing e-coli, bioluminescence preparation.

#### ES-80

#### Compact shaker-incubator

Stable and reliable with programmable time, temperature and shaking speed. The ES-80 orbital shaker-incubator is ideal for vigorous or even mixing and incubation of samples in a variety of flasks and vessels.

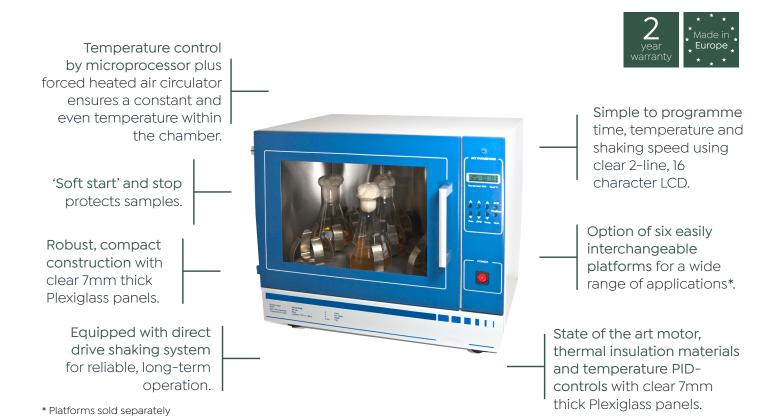
Temperature setting range: +25°C to 80°C

Variable speed: 50 - 250rpm

Digital control of time, temperature and shaking speed for accuracy and repeatability

Interchangeable platforms for shaking/incubating different vessels\*

Load up to 8kg



# Applications

• Life-sciences - cultivation of micro-organisms, cells and eukaryotic cells including animal, plant and insect cells, long-term cell growth projects, more vigorous shaking possible allowing other sample preparation processes including tissue sample extraction at physiological temperatures and up to 80°C, solubility studies, cell culture, staining/destaining, extraction procedures, gel washing, plasmid purification, bacterial suspension, hybridisation, protein expression in bacteria.

# Shaker-Incubators

#### Options and accessories

			ES-20	ES-80
P12-100		Platform with clamps for 12 x 100-150 ml flasks/beakers Dimensions: 250 x 190 mm	•	-
PP4		Flat platform with non-slip rubber mat for Petri dishes and culture flasks Dimensions: 220 x 220 mm	•	-
P6-250		Platform with clamps for 6 x 250-300 ml flasks/beakers Dimensions: 250 x 190 mm		-
PUP-12		Universal platform, with adjustable bars. Dimensions: 270 x 195 mm HB-200 extra holding bars		-
P16-88		Platform with spring holders for up to 88 tubes, 30mm diameter	•	-
PP-400		Flat platform with non-slip rubber mat (360 x 400mm)	_	
P30-100		Platform with clamps for 30 x 100-150ml flasks	=	
P16-250		Platform with clamps for 16 x 250-300ml flasks	_	
P9-500		Platform with clamps for 9 x 500ml flasks	_	
P6-1000		Platform with clamps for 6 x 1000ml flasks	_	
UP-168	5	Universal platform for different flasks Dimensions: 360 x 400mm	_	
		Tight fit clamp for:  1 HSC-50 50 ml - Ø50 mm,  2 HSC-100 100 ml - Ø65 mm,  3 HSC-250 250 ml - Ø85 mm,  4 HSC-500 500 ml - Ø105 mm,  5 HSC-1000 1000 ml - Ø130 mm	-	
TR-21/50		Adjustable tilt test tube rack for 21x 50ml tubes	-	
TR-44/15		Adjustable tilt test tube rack for 44x 15ml tubes	-	

# Shaker-Incubators

#### Flask clamps

		ES-20	ES-80
FC-100	For 100ml flask	•	•
FC-250	For 250ml flask	•	•
FC-500	For 500ml flask	•	•
FC-1000	For 1000ml flask	•	•
FC-2000	For 2000ml flask	•	

# Shaker-Incubators

#### Technical specifications





	ES-20	ES-80	
	Compact Shaker-Incubator	Shaker-Incubator	
Dimensions h x d x w mm	435 x 340 x 340	510 x 525 x 590	
Weight kg	13.2	41.1	
Temperature range °C	+25 to 42	+25 to 80	
Temperature control range °C	O.1		
Stability ±°C	0.5		
Temperature accuracy at 37°C ±°C	0.5		
Mixing speed control range rpm	50-250 rpm		
Load capacity kg	2.5	8	
Display	2-line, 16 character LCD		
Orbit diameter mm	10	20	
Internal working dimensions (with installed platform) mm (d x w x h)	260 x 305 x 250	450 x 390 x 300	
Timer	1 minute to 96 hours / non-stop		
Power consumption 230V W	170 (1.6A)	450 (2A)	
120V W	160(0.7A)	-	
Nominal operating voltage V	120 or 230 (50/60Hz)	230 (50-60Hz)	
Data Transfer	_		
Stacking	-		

# Contact us today

Grant Instruments (Cambridge) Ltd w. www.grantinstruments.com 29 Station Road, Shepreth, t. +44 (0) 1763 260 811 Cambridgeshire, SG8 6GB

- e. salesdesk@grantinstruments.com
- ► GrantInstruments
- **y** GrantInstrument
- in grant-instruments-cambridge-ltd



Find your perfect solution today

Visit our website - www.grantinstruments.com





# Densitometers

# Densitometers

DEN-1 for 0.00 - 15.00 McFarland units DEN-1B for 0.00 - 15.00 McFarland units, powered by battery or mains

# Densitometers

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 0.00 to 15.00 McFarland units (DEN-1 and DENI-B) with a small standard deviation. The densitometers can deliver a wider measurement range (up to 15.00 McFarland units) with a greater standard deviation.

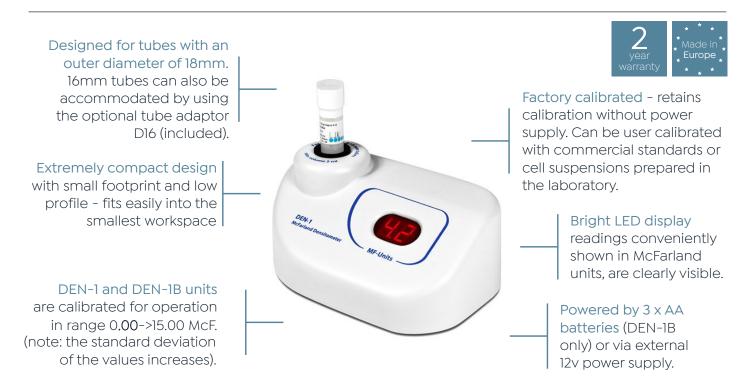
Measurement range: 0.00 to 15.00 McFarland units (DEN-1 and DEN-1B)

Precision: ±3%

Measurement time: 1 second

Standard deviation at 3.00 McFarland units: ±0.1 McF

#### User calibration option

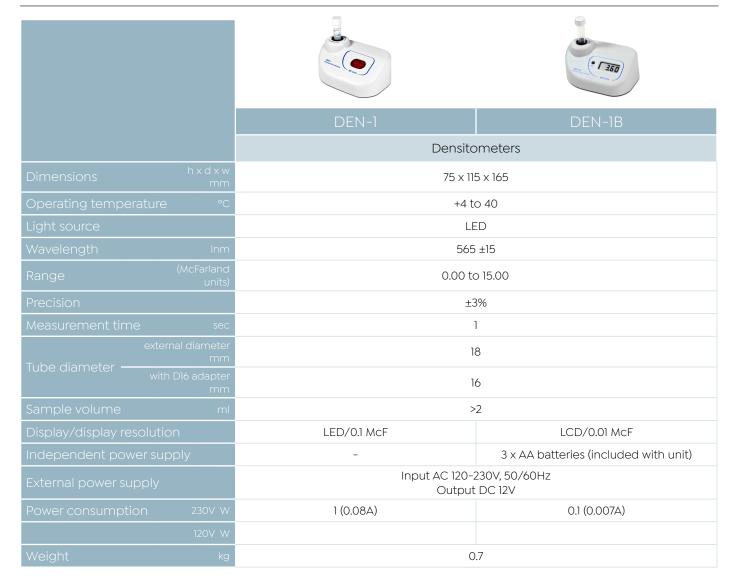


#### **Applications**

• 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**

#### Technical specifications



#### **PCV** series

#### Options and accessories

			DEN-1	DEN-1B
DEN MCF STDS	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			
D16	1	Spare tube adaptor for tubes with 16mm outer diameter – included as standard		

#### Contact us today

Grant Instruments (Cambridge) Ltd 29 Station Road, Shepreth, Cambridgeshire, SG8 6GB

- w. www.grantinstruments.com
- t. +44 (0) 1763 260 811
- e. salesdesk@grantinstruments.com
- ► GrantInstruments
- ■ GrantInstrument
- in grant-instruments-cambridge-ltd

