ETL 200 Series

FEATURES

> Dual spring-loaded occlusion for maximum tube lifetime and accuracy
> Easy tube loading with one movement
> Usage of bridged tubing
> Stepper motor
> Controller board available

BASE MODEL



TYPICAL APPLICATIONS

> Transfer of fluids in analytical and biopharma processes
> Dispensing of reagents in in-vitro diagnostics (IVD)



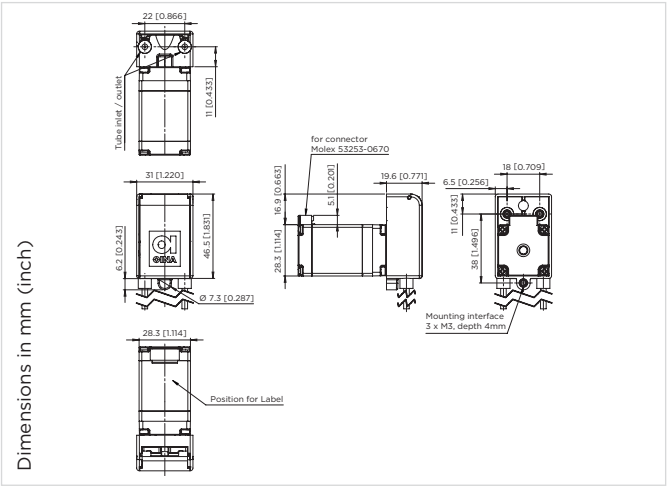
Peristaltic

ETL200

24 V DC with stepper motor
Circuit board recommended for test purposes

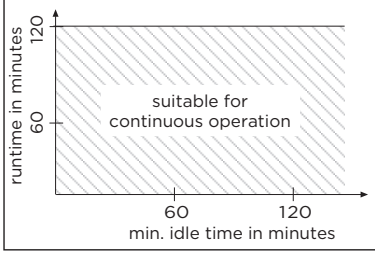
Flow	0 – 60 ml/min





Hydraulic performance & order numbers	Flow/revolution ml/rev	Min. Flow @ 0.15 rpm ml/min	Max. Flow @ 400 rpm ml/min
Pharm-A-Line™ 1.0 x 1.05 mm Part number	0.04 ml/rev 59005820	0.006	16
Pharm-A-Line™ 2.0 x 1.05 mm Part number	0.12 ml/rev 59005810	0.018	48
Pharm-A-Line™ 2.5 x 1.05 mm Part number	0.15 ml/rev 59005800	0.0225	60

Drive: Stepper motor



Electrical Data

Motor type	Stepper motor, stepping angle 1.8°
Nominal voltage	24 V DC
Motor speed	0.15 - 480 rpm
Max. recommended motor speed intermittent operation	400 rpm
Max. recommended motor speed continuous operation	200 rpm
Max. current consumption	1100 mA (with optional controller board)
Motor insulation class	B
Inductance at 1 kHz, 1 V	5.1 mH
Winding resistance	7.2 Ω

General Data

Max. suction height	9 m H_2O
Max. pressure height	20 m H_2O
Max. ambient temperature	40 °C
Media temperature	50 °C (short t. 90 °C)
Ambient temperature	5 - 40 °C
Media temperature	5 - 80 °C
Weight	250 g

Duty cycles

Tube lifetime	
Pharm-A-Line™	3500 h [1]
Drive	
Stepper motor	10000 h

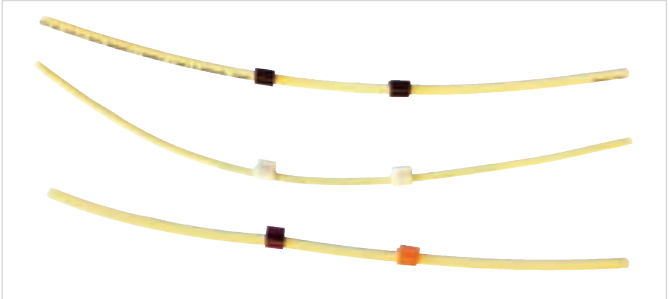
[1] tested at 100 rpm

Options

6 roller configuration for low pulsation
Silicone tubing
Drive kit (incl. controller board, motor connection cable, power cable, manual) – part number 39999800
Manual potentiometer with cable – part number 39999890

Spare parts ETL200

Tubing



Tubing	Inner diameter (ID) x wall thickness	Part number	Stopper colour
Pharm-A-Line™	1.0 x 1.05 mm	59999020	White
Pharm-A-Line™	2.0 x 1.05 mm	59999010	Purple
Pharm-A-Line™	2.5 x 1.05 mm	59999000	Purple / Orange

General Tubing Information

Tubing Properties	
Tube	**Characteristics**
Pharm-A-Line™	High quality for medical, laboratory and research use Homogeneous structure and therefore comparatively better chem. resistance Autoclavable Biocompatible Long lifetime

Choice of tubing depending on flow medium		
		Pharm-A-Line™
Acids	weak medium strong	very good good not recommended
Alkaline solution	weak medium strong	very good very good good
Hydrocarbons	aliphatic aromatizised halogenated	not recommended
Standards/physiological behaviour		USP, class VI ISO 10993 Parts 4, 5 FDA (21 CFR 177.2600)
Chemical structure		thermoplastic elastomer on PP-Basis

Chemical Compatibility

Chemical Resistance of Tubing Materials
N = Novoprene Nor = Norprene® Ph = PharMed BPT / Pharm-A-Line™ S = Silicone

	N	Ph/Nor	S		N	Ph/Nor	S
Acetaldehyde	C	C	C	Hydrogen peroxide	A	A	C
Acetate	C	B	D	Hydrogen sulphide	A	A	C
Acetic acid	A	A	A	Isoprophyl alcohol	A	B	A
Acetic anhydride	A	A	C	Jodine	A	A	C
Acetone	C	C	A	Kaliumhydroxyde	A	A	C
Aluminium chloride	A	A	D	Ketones	C	C	–
Aluminium sulfate	A	A	A	Lactic acid	A	A	C
Ammonia	A	A	C	Magnesium chloride solution	A	A	A
Amyl acetate	C	B	C	Mercury salts	A	A	C
Amyl alcohol	A	C	C	Methanol	A	A	A
Amyl chloride	C	C	C	Methyl ethyl ketone	B	C	C
Aniline	A	B	C	Nitrous acid 10 %	B	A	C
Aqua regia	C	C	C	Oil, animal	B	B	B
Arsenic acid	C	C	A	Oil, hydraulic	C	C	D
Barium hydroxide	A	A	A	Oil, linseed	B	B	A
Benzaldehyde	C	C	C	Oil, mineral	C	C	C
Benzene	C	C	C	Oil, vegatable	C	B	A
Benzoic acid	A	B	B	Oleic acid	C	C	C
Benzylalcohol	–	A	B	Oxalic acid	B	B	B
Bleaching agent	B	A	A	Paraffins	C	C	–
Boric acid	A	A	A	Perchloric acid	C	C	C
Break liquid	A	A	A	Perchloroethylene	C	C	C
Bromine	C	C	C	Petrol	C	C	C
Butane	A	A	C	Phenol	A	A	C
Butanol	B	C	C	Phosphoric acid, 25 %	A	A	C
Calcium hypochlorite	A	A	B	Photograpic solutions	B	B	A
Carbon disulphide	C	C	C	Phtalic acid, 9 %	–	A	A
Chloracetic acid	A	B	–	Potassium salts	A	A	A
Chlorine, liquid	C	C	C	Pyridine	C	C	C
Chlorobenzene	C	C	C	Soap solution	A	A	A
Chloroform	C	C	C	Sodium carbonate	A	A	A
Chromic acid 50 %	C	C	C	Sodium chloride	A	A	A
Chromium salts	A	A	C	Sodium hydroxide 40 %	A	A	B
Citric acid	B	B	A	Sodium hypochlorite <5%	A	A	B
Cyclohexane	C	C	C	Sodium hypochlorite 12 %	A	A	B
Diesel fuel	C	C	C	Sodium salt	A	A	A
Ethanol	A	A	C	Stearic acid, 5 %	B	A	B
Ether	C	C	C	Sulphurdioxide, wet gas	A	A	B
Ethyl alcohol	A	A	A	Sulphuric acid, 30 %	A	A	C
Ethyl chloride	A	A	C	Sulphuric acid, 75-100%	C	C	C
Ethylene glycol	–	A	A	Sulphurtrioxide	–	B	–
Ferric sulfate	A	A	A	Tannic acid	A	B	A
Fluor silicium acid	C	C	–	Tetrahydrofurane	C	C	C
Fluoroboric acid, 48 %	B	B	–	Toluole	C	C	C
Formaldehyde	B	C	B	Trichloroehtylene	B	B	C
Formamide	A	B	–	Turpentine	C	C	C
Formic acid	A	B	A	Urea	A	A	A
Furfural	C	C	–	Uric Acid	A	A	–
Hydrochloric acid	A	A	C	Xylene	C	C	C
Hydrocyanic acid	A	A	C	Zinc chloride	B	B	B

A = small or no effect
B = minor or moderate effect
C = severe effect
D = no reliable data, please test before use
– = no available data

Norprene®, PharMed BPT®, Norton Co. Reg. TM's,

The material resistance is influenced by temperature and concentration of the medium.
The data have to be seen as indications and do not guarantee the material properties.

Notes

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PUMP AND COMPRESSOR SOLUTIONS FOR OEMS WORLDWIDE

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