

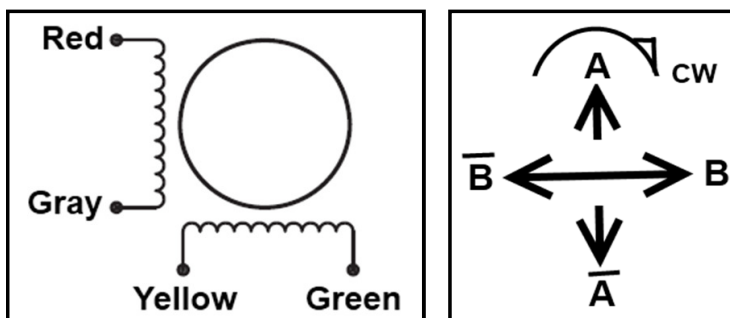
Honlite HSP Series Peristaltic Pump

Model: HSP-12-120-NPT-4-T

Motor Character

Items	Descriptions	Unit	Specifications
1	Rate Voltage	VDC	12
2	Current @1000pps	A/Phase	0.8
3	Current @ 20pps	A/Phase	2 (with Honltie driver)
4	Maximum Current @ 0pps	A/Phase	6 (with regular driver)
5	Coil Resistance	Ω / Phase	2 \pm 7%
6	Number of Phases	/	2
7	Step Angle	Degree/Step	1.8
8	Excitation Method	/	2 Phase
9	Drive Mode	/	Bipolar Driver
10	Pull-In Torque	kgf-cm	\geq 3.5 @300pps
11	Holding Torque	kgf-cm	\geq 5
12	Max. Starting Frequency	PPS	\geq 1000
13	Insulation Class	/	Class B for Coil
14	Operating Temperature	$^{\circ}$ C	0~55

Motor Wire Connection



Pin No	Color	Phase				
1	Red	A	ON1			ON8
2	Gray	\overline{A}		ON4	ON5	
3	Yellow	B	ON2	ON3		
4	Green	\overline{B}			ON6	ON7

Flow Out (1.8 $^{\circ}$ per step)	ON1-ON2, ON3-ON4, ON5-ON6, ON7-ON8
Reverse (1.8 $^{\circ}$ per step)	ON8-ON7, ON6-ON5, ON4-ON3, ON2-ON1



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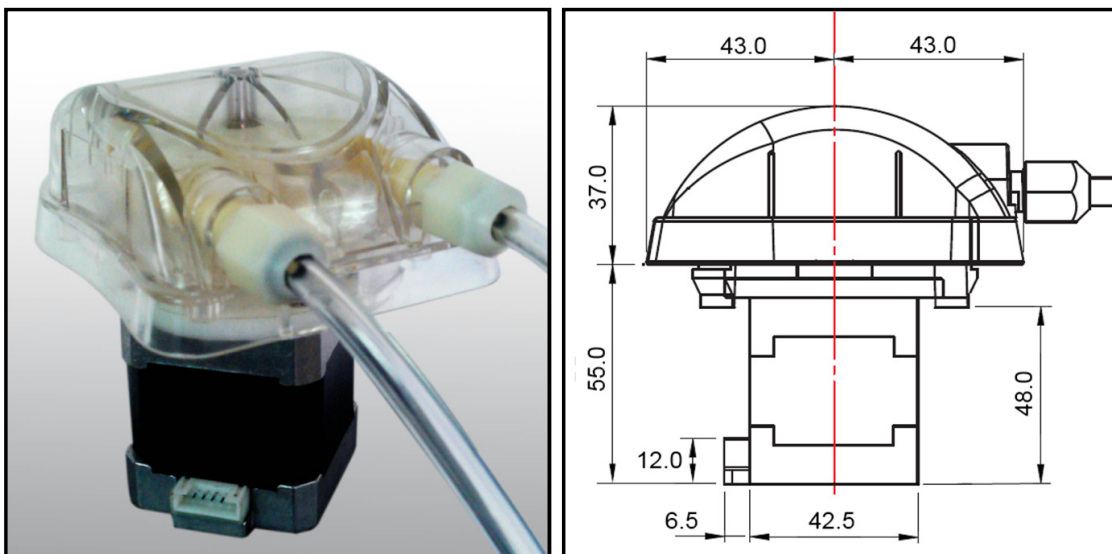
Contact: Joe Lee

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Model: HSP-12-120-NPT-4-T

Pump Photo and Dimensions



Honlite Peristaltic Pump	Unit	Model Number
		HSP-12-120-NPT-4-T
Input Voltage	V	DC 12V
Flow Rate @ 0pps (Testing with regular water)	ml/min	0
Flow Rate @ 1000pps (Testing with regular water)	ml/min	240 +/- 3%
Number of Rollers	/	4
Maximum Output Liquid Pressure	PSI	30
Recommend Output liquid pressure	PSI	18
Maximum Lifting Distance	M	3
Peristaltic Tubing	Inch	PharMed 1/8"(ID) x 1/4"(OD) Meets USP Class VI, FDA and NSF criteria
External Tubing	Inch	12" PVC tube x 2
Operation Temperature (Environment)	°C	-10 ~ +50
Storage Temperature (Environment)	°C	-20 ~ +80
Motor Type	/	DC Stepping Motor
Motor Insulation	/	Material Comply with UL Insulation Class B
Motor Protection	/	None
Water Proof	/	None
Expecting Life of Inner Tubing	Loading Hours	800
Expecting Life of Pump	Loading Hours	3000
Operation Duty Cycle	/	Continuous
Loading Noise (Testing Distance = 30CM)	dB	58 Maximum
Motor Power Wire	/	Optional
Net Weight	g	230
Pump Head Pannel Dimension	mm	87(W) x 76(L) x 37(H)
Pump Outline Dimension	mm	87(W) x 76(L) x 92(H)



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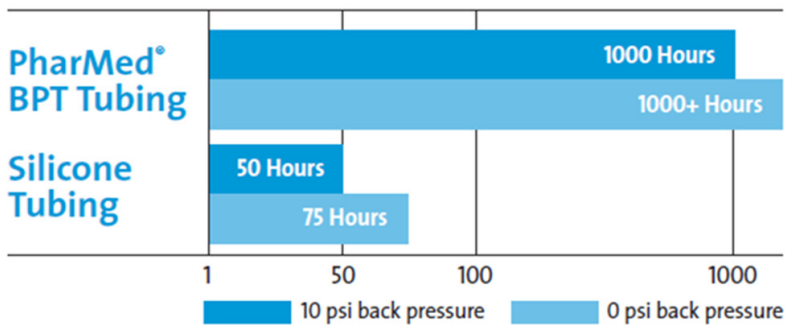
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PharMED® Tubing Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 15 Sec	D2240-02	64
Tensile Strength, psi	D412-98	1,000
Ultimate Elongation, %	D412-98	375
Tensile Stress, @ 100% psi	D412-98	410
Tensile Set(@75% of Ultimate Elongation), %	D412-98	47
Tear Resistance lb-f/inch	D1004-94	120
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-02 Method B	27
Specific Gravity	D792-00	0.98
Water Absorption, % 24 hrs. @ 23°C	D570-98	0.30
Brittle Point, °F (°C)	D746-98	-75
Low Temp. Flex at -40°F (-40°C)	D380-94	Passed
Flame Resistance Classified	UL94-HB	Passed
Heat Resistance, °F (°C)	—	275 (135)
Dielectric Strength, v/mil	D149-97a	535
Color		Cream

Comparative Peristaltic Pump Tubing Life

The table below depicts hours until failure of 1/4" ID x 3/8" OD tubing. In each case, a 3-roller pump head was utilized operating at 600 rpm under room temperature (73° F). Tubing failure is measured in hours of use prior to rupture.



The performance of tubing in peristaltic pumping applications is affected by the conditions of use and equipment utilized, along with size and wall thickness of the tubing tested. The data above is presented for information only and should not be utilized for specification purposes.

PharMed is a trade mark of Saint-Gobain Plastic Corporation



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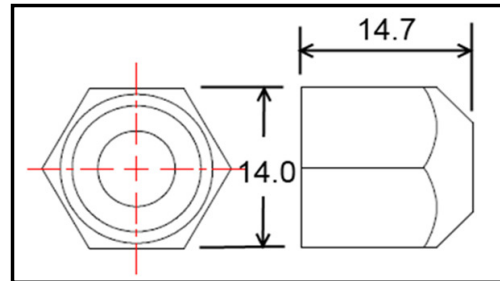
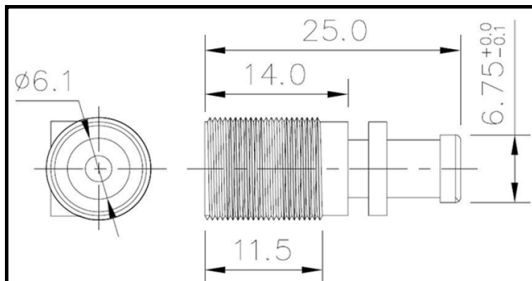
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Various Tubing for Selection

Tube Type	Part Number	Tube Size				Working Pressure Saint-Gobain	
		ID		OD		73°F	60°F
	Saint Gobain	Inch	mm	Inch	mm	psi	psi
Tygon LFL	AVW42007	1/8		1/4		33	10
	AVW42012	3/16		5/16		25	7
	AVW42017	1/4		3/8		20	6
Tygoprene XL-60	AN800007	1/8		1/4		20	
	AN800012	3/16		5/16		13	
	AN800017	1/4		3/8		15	
Fluran F-5500-A	AGN00007	1/8		1/4		19	13
	AGN00012	3/16		5/16		15	9
	AGN00017	1/4		3/8		13	8
Norprene A-60-G	AFL00007	1/8		1/4		19	
	AFL00008	1/8		3/8		34	
	AFL00012	3/16		5/16		13	
	AFL00013	3/16		3/8		19	
	AFL00015	3/16		9/16		34	
	AFL00017	1/4		3/8		10	
	AFL00018	1/4		7/16		15	
	AAL00007	1/8		1/4		19	
Norprene A-60-F	AAL00012	3/16		5/16		13	
	AAL00017	1/4		3/8		10	
Norprene A-60-Fl.	APW00019	1/4		1/2		125	
PharMed BPT	AY242007	1/8		1/4		24	
	AY242012	3/16		5/16		17	
	AY242017	1/4		3/8		13	
	AY242019	1/4		1/2		24	
Tygon F-4040-A	AAG00007	1/8		1/4		50	
	AAG00012	3/16		5/16		35	
	AAG00017	1/4		3/8		30	
Versilic 60	760330		4		7		
	760350		4		8		
	760360		4		10		

External NPT Connector



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