

Pump Selection Table

Norus Single Phase 115 Volt Pumps

Model	UPC Code	HP	Amps	Disch	Solids	Flow in GPM / GPH @ ft of head										Shut Off	Average Monthly Operating Cost *	
						5'	10'	15'	20'	25'	30'	35'	40'	45'				
50CR2.15S	737212911045	1/5	3.0	2"	1-1/4"	GPM	45	30	15								19'	\$22.36
						GPH	2700	1800	900									
50CR2.25S	737212911052	1/3	4.4	2"	1-1/4"	GPM	66	50	35	22	13					28'	\$32.78	
						GPH	3960	3000	2100	1320	780							
50CR2.4S	737212911069	1/2	5.5	2"	1-1/4"	GPM	87	71	58	42	30	18				36'	\$40.98	
						GPH	5220	4260	3480	2520	1800	1080						
50CR2.75S	737212911076	1	10	2"	1-1/4"	GPM	112	100	88	80	68	53	38	25	12	48'	\$74.50	
						GPH	6720	6000	5280	4800	4080	3180	2280	1500	720			
50CRXP2.75S*	737212911083	1	11	2" *	1-1/4"	GPM	170	145	110	80	35				26'	\$81.95		
						GPH	10200	8700	6600	4800	2100							

* 3" discharge adapter included

CVC Cast Iron Single Phase 230 Volt Pump

Model	UPC Code	HP	Amps	Disch	Solids	Flow in GPM / GPH @ ft of head										Shut Off	Average Monthly Operating Cost *
						5'	10'	15'	20'	25'	30'	35'	40'	50'			
65CVC41.5S-2	737212911090	2	10	3"	2"	GPM	265	230	195	165	130	95	40			37'	\$149.40
						GPH	15900	13800	11700	9900	7800	5700	2400				

CNL Cast Iron Three Phase 230 Volt Pumps*

Model	UPC Code	HP	Amps	Disch	Solids	Flow in GPM / GPH @ ft of head										Shut Off	Average Monthly Operating Cost *	
						5'	10'	15'	20'	25'	30'	35'	40'	45'	50'			
65CNL41.5T-2*	737212911106	2	6.5	3"	2"	GPM	410	345	285	225	160	95	50			38'	\$168.00	
						GPH	24600	20700	17100	13500	9600	5700	3000					
80CNL42.2T-2*	737212911113	3	8.9	3"	2"	GPM	485	440	385	330	270	215	150	90	15	47'	\$230.00	
						GPH	29100	26400	23100	19800	16200	12900	9000	5400	900			
80CNL43.7T-2 *	737212911120	5	15	4"	2.5"	GPM		700	660	580	490	410	330	250	160	100	58'	\$389.00
						GPH		42000	39600	34800	29400	24600	19800	15000	9600	6000		
100CNL45.5T-2 *	737212911137	7.5	20.5	4"	2.5"	GPM		850	790	730	660	600	530	450	360	300	68'	\$531.00
						GPH		51000	47400	43800	39600	36000	31800	27000	21600	18000		
100CNL47.5T-2*	737212911144	10	29	4"	2.5"	GPM			900	870	830	775	710	650	560	500	83'	\$734.00
						GPH			54000	52200	49800	46500	42600	39000	33600	30000		

Highest Efficiency

Medium Efficiency

Lowest Efficiency

* Three phase pumps require a variable speed control panel when used on single phase 230 volt power.

Toll Free: 877-213-3598 Fax: 801-676-4696

Distributed exclusively by Fielding Pump company,

8510 Sandy Parkway, Sandy Utah 84070

Pump selection for a water feature

On average, use 1,200 GPH per horizontal foot of waterfall to give you a 1/2" depth of water. This is a conservative selection. For a more aggressive look and sound use 2,400 GPH for a 1" depth.

Step 1. Determine desired flow & thickness

GPH / ft	Smooth Weir	Rough Stone
1200	1/2"	3/8"
2400	1"	5/8"

Step 2. Calculate pump flow.

Desired Flow from step 1 X Width of falls in feet = Pump Flow

Step 3. Determine Vertical lift

Vertical lift is the actual elevation gain from the pond level to the top of the water fall. Note: The submersible pump only pushes the water from the surface of the pond, not the pump level.

Vertical lift =

Step 4. Pump selection

Pump Flow from Step 2 GPH Vertical lift from Step 3 Head

Use the data above to select a pump from the pump performance chart on the opposite page. **Note: When selecting pumps always round up to the higher flow and head.**

Step 5. Select pipe size *

Determine your total pipe length, add 5' of pipe for every valve and fitting in the system. **Note: When selecting pipe round up on flow and pipe length.**

Pump Flow		Total Pipe Length						
GPM	GPH	20'	40'	60'	80'	100'	150'	200'
17	1000	2"	2"	2"	2"	2"	2"	2"
33	2000	2"	2"	2"	2"	2"	3"	3"
50	3000	2"	2"	2"	3"	3"	3"	3"
67	4000	2"	3"	3"	3"	3"	3"	3"
83	5000	3"	3"	3"	3"	3"	3"	4"
100	6000	3"	3"	3"	3"	3"	4"	4"
117	7000	3"	3"	3"	4"	4"	4"	4"
133	8000	3"	3"	3"	4"	4"	4"	4"
150	9000	3"	3"	4"	4"	4"	4"	4"
167	10000	3"	3"	4"	4"	4"	4"	6"
250	15000	3"	4"	4"	6"	6"	6"	6"
333	20000	4"	4"	6"	6"	6"	6"	6"

* Selecting pipe size from the above table will keep friction losses below 2' per 100' of pipe. If other than above pipe size is used, a more extensive friction loss calculation must be performed.

Other considerations for pump flow

To maintain good biological activity, it is recommended that you circulate your pond at least once per hour. It is a good idea to give yourself a 25% margin of error.

Calculating Total Pond Volumes

Rectangular pond volume:
Length x width x avg. depth x 7.48 =
Total gallons in pond

Circular pond volume:
Radius x radius x 3.14 x depth x 7.48 =
Total Gallons in pond

Stream Volume:
Length x Width x Depth x 7.48 =
Total Volume in Stream

Containment for a pond-less feature:
Total gallons in stream x 2.5 =
Total gallons of containment

Cost to operate a 115 volt pump.*

Amps	Watts	Cost/Month
1	115	\$7.45
2	230	\$14.90
3	345	\$22.36
4	460	\$29.81
5	575	\$37.26
6	690	\$44.71
7	575	\$37.26
8	690	\$59.62
9	805	\$67.07
10	920	\$74.52

*Based on \$.09 cents per KW hour.

Abbreviations

GPH	Gallons Per Hour
GPM	Gallons Per Minute
TDH	Total Dynamic Head
PSI	Pounds Per Square Inch
FNPT	Fem. Nat. Pipe Thread
MNPT	Male Nat. Pipe Thread
A	Amps
V	Volts
KW	Kilowatts
HP	Horsepower

Toll free: 877-213-3598 Fax: 801-676-4696

Distributed exclusively by Fielding Pump Company 8510 Sandy Parkway, Sandy Utah 84070