Pump Performance Datasheet

Customer	:	Quote number	:
Customer reference	:	Size	: LVI 150-400
Item number	: Default	Stages	: 1
Service	:	Based on curve number	: LVI 150-150-400-4-60
Quantity	: 1	Date last saved	: 16 Nov 2023 8:23 PM

Operating Conditions

Flow, rated	: 411.3 m3/h
Head, rated (requested)	: 49.80 m
Head, rated (actual)	: 49.80 m
Suction pressure, rated / max	: 0.00 / 0.00 bar.g
NPSH available	: Ample
Site Supply Frequency	: 50 Hz

Performance

Speed criteria	: Synchronous
Speed	: 1460 rpm
Impeller dia.	: 414 mm
Impeller diameter, maximum	: 414 mm
Impeller diameter, minimum	: 331 mm
Efficiency	: 78.08 %
NPSH required / margin required	: 3.58 / 0.00 m
nq (imp. eye flow) / S (imp. eye flow)	: 26 / 189 Metric units
MCSF	: -
Head max.	: 61.82 m
Head rise to shutoff	: 24.12 %
Flow, best eff. point	: 411.3 m3/h
Flow ratio, rated / BEP	: 100.00 %
Diameter ratio (rated / max)	: 100.00 %
Head ratio (rated dia / max dia)	: 100.00 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

Liquid

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.0 mm
Solids concentration, by volume	: 0.00 %
Temperature	: 20.00 deg C
Fluid density	: 0.999 / 0.999 kg/dm3
Viscosity	: 1.00 cSt
Vapor pressure, rated	: 0.00 bar.a

Material

Material selected	: Standard

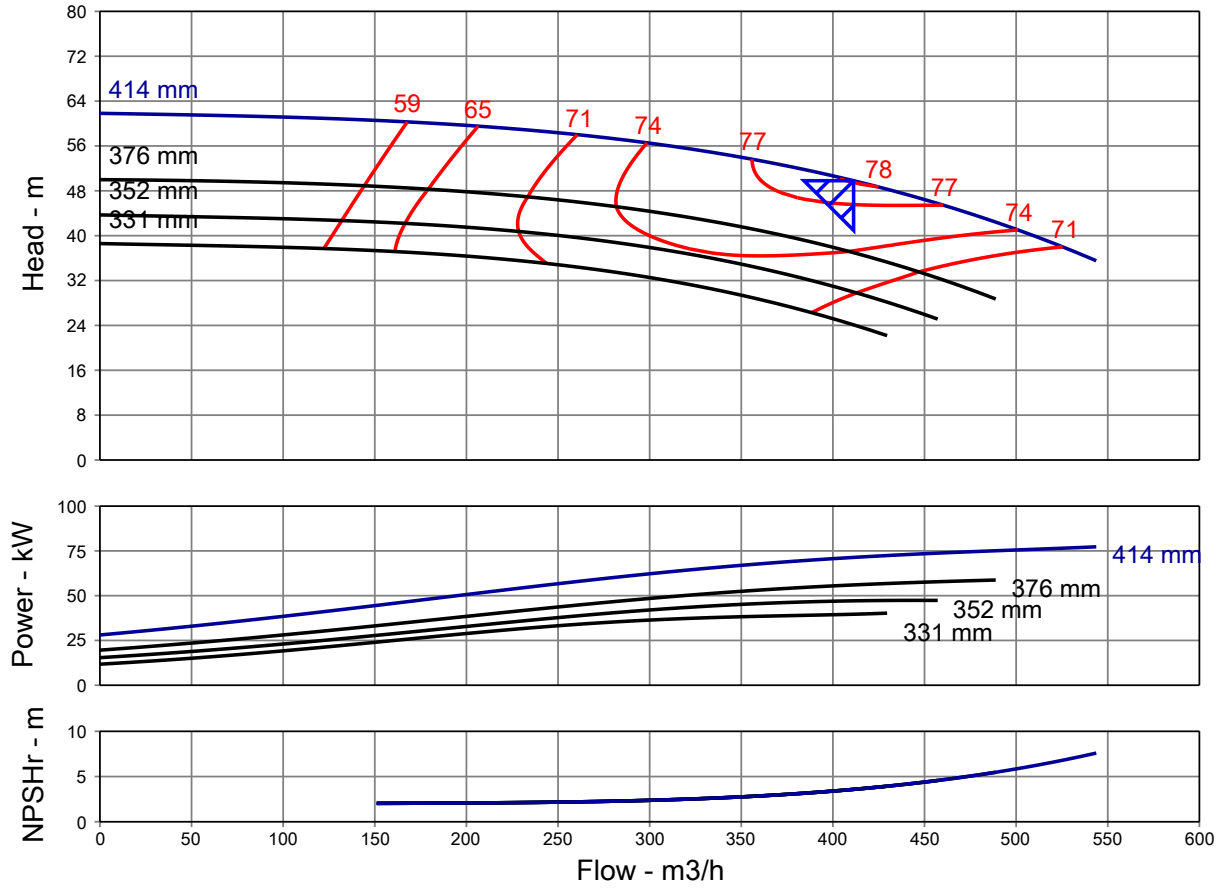
Pressure Data

Maximum working pressure	: 6.05 bar.g
Maximum allowable working pressure	: 16.00 bar.g
Maximum allowable suction pressure	: 2.50 bar.g
Hydrostatic test pressure	: 24.00 bar.g

Driver & Power Data (@Max density)

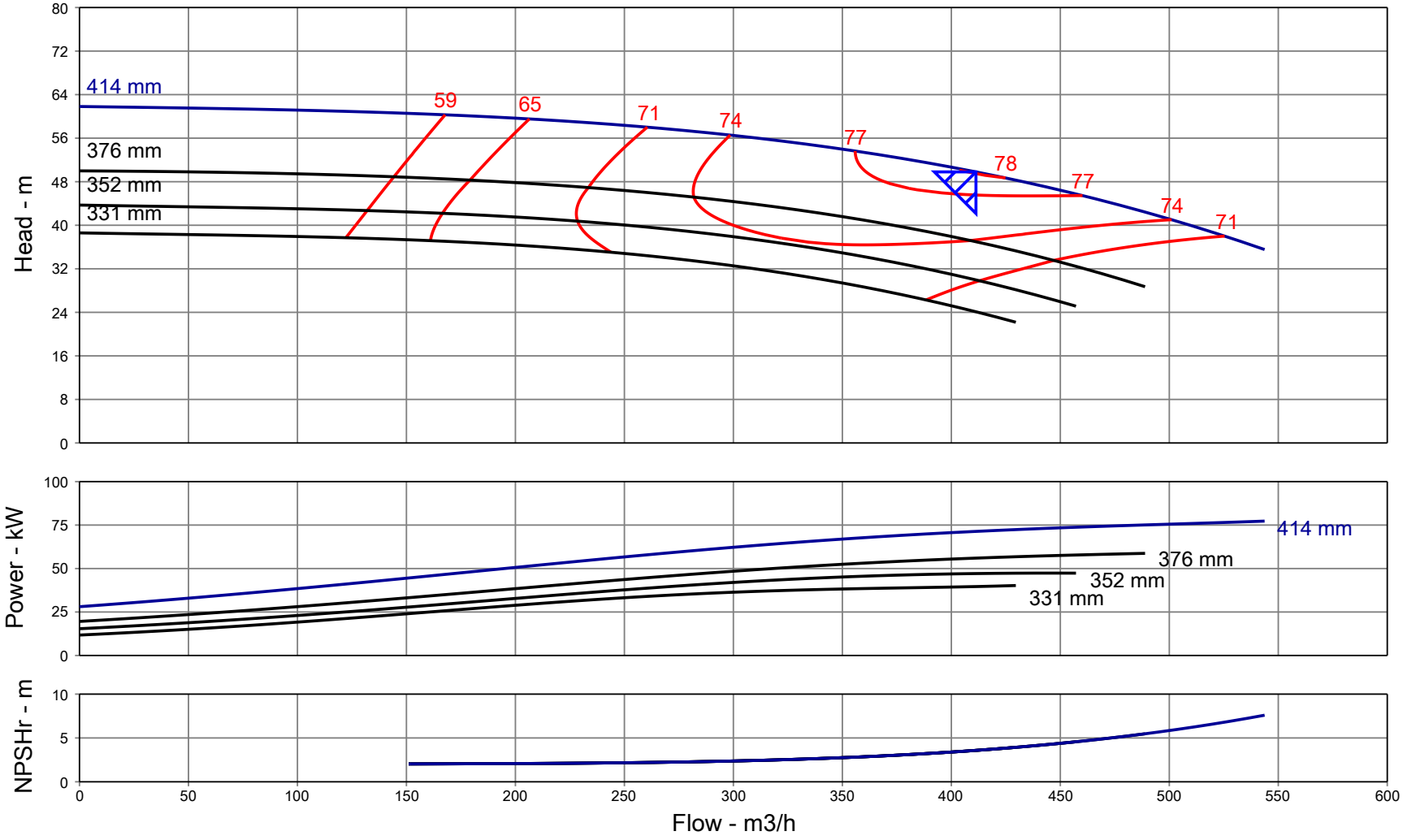
Driver sizing specification	: Maximum power
Margin over specification	: 0.00 %
Service factor	: 1.00
Power, hydraulic	: 55.72 kW
Power, rated	: 71.36 kW
Power, maximum	: 77.28 kW
Motor rating	: 89.48 kW / 120 hp

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Pump Performance Curve

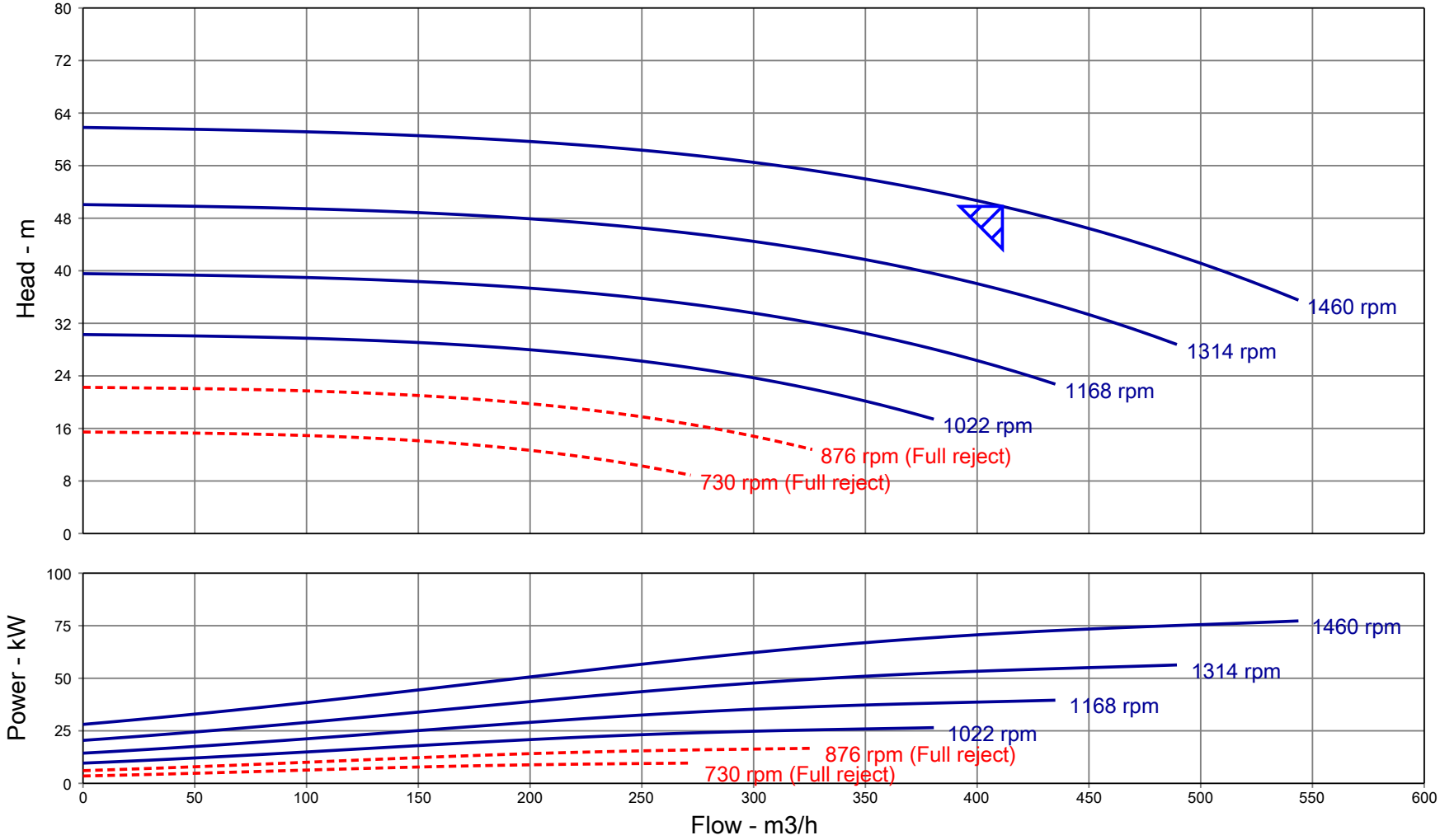
Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Customer	:	Size	: LVI 150-400	Flow, rated	: 411.3 m3/h
Customer reference	:	Stages	: 1	Head, rated	: 49.80 m
Item number	: Default	Speed	: 1460 rpm	Fluid density	: 0.999 / 0.999 kg/dm3
Service	:	Based on curve number	: LVI 150-150-400-4-60	Viscosity	: 1.00 cSt
Quantity	: 1	Efficiency	: 78.08 %	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Quote number	:	Power, rated	: 71.36 kW		
Date last saved	: 16 Nov 2023 8:23 PM	NPSH required	: 3.58 m		

Multi-Speed Performance Curve

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Customer	:	Stages	: 1	Nominal speed	: 1460 rpm
Customer reference	:	Based on curve number	: LVI 150-150-400-4-60	Flow, rated	: 411.3 m3/h
Item number	: Default	Efficiency	: 78.08 %	Head, rated	: 49.80 m
Service	:	Power, rated	: 71.36 kW	Speed	: 1460 rpm
Quantity	: 1	NPSH required	: 3.58 m	Impeller dia.	: 414 mm
Quote number	:	Site Supply Frequency	: 50 Hz	Fluid density	: 0.999 / 0.999 kg/dm3
Date last saved	: 16 Nov 2023 8:23 PM			Viscosity	: 1.00 cSt
Size	: LVI 150-400			Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00

Life Cycle Cost Datasheet

Customer	:	Quantity	: 1	Size	: LVI 150-400
Customer reference	:	Quote number	:	Stages	: 1
Item number	: Default	Date last saved	: 16 Nov 2023 8:23 PM	Speed	: 1460
Service	:				

Load Profiles and Energy Costs

Expected pump life: 20 years	Load Profile #1	Load Profile #2	Load Profile #3	Load Profile #4	Load Profile #5	Total
Flow: (m3/h)	7.69	-	-	-	-	-
Operation: (hours per year)	8,760	-	-	-	-	8,760
Energy cost, present value ($ per kWh)	0.1	-	-	-	-	-
Speed (rpm)	1460	-	-	-	-	-
Head (m)	61.78	-	-	-	-	-
Efficiency (%)	4.49	-	-	-	-	-
Power, rated (kW)	28.77	-	-	-	-	-
Motor efficiency (%)	100.00	-	-	-	-	-
Drive/gear efficiency (%)	100.00	-	-	-	-	-
System curve		-	-	-	-	-
Energy, total (kWh)	5,039,812.8	-	-	-	-	5,039,812.8
Energy cost, per year	$ 25,199.06	-	-	-	-	$ 25,199.06
Energy cost, total present value	$ 377,945.11	-	-	-	-	$ 377,945.11

Life Cycle Cost Calculation

Additional Annual Costs			Additional One-time Costs, Year 0			Interest and Inflation Rates		
Routine maintenance cost	:	0.00	Initial investment cost	:	0.00	Interest rate, %	:	6.00
Repair cost	:	0.00	Installation and commissioning cost	:	0.00	Inflation rate, %	:	3.00
Operating cost	:	0.00	Other one-time costs, year 0	:	0.00	**Total Net Present Value Costs**		
Downtime cost	:	0.00	**Additional One-time Costs, Year 20**			Total energy cost	:	$ 377,945.11
Environmental cost	:	0.00	Decommissioning cost	:	0.00	Total additional annual cost	:	$ 0.00
Other annual costs	:	0.00	Other one-time costs, year 20	:	0.00	Total additional one-time cost	:	$ 0.00
Total, present value	:	$ 0.00	Total, present value	:	$ 0.00	Total life cycle cost	:	$ 377,945.11

Pump Performance - Additional Data

Customer	:	Quote number	:
Customer reference	:	Size	: LVI 150-400
Item number	: Default	Stages	: 1
Service	:	Speed	: 1460 rpm
Quantity	: 1	Intellicode	:
		Date last saved	: 16 Nov 2023 8:23 PM

Performance Data

Head, maximum diameter, rated flow	: 49.80 m
Head, minimum diameter, rated flow	: 24.10 m
Head max.	: 61.82 m
Efficiency adjustment factor, total	: 1.00
Power adjustment, total	: 0.00 kW
Head adjustment factor, total	: 1.00
Flow adjustment factor, total	: 1.00
Flow adjustment factor, efficiency only (shift BEP)	: 1.00
Flow adjustment factor, end-of-curve only, total	: 1.00
MCSF adjustment factor	: 1.00
NPSHR adjustment factor, total	: 1.00
NPSHR slope correction factor	: 1.00
User applied performance adjustment comments	:
NPSH margin dictated by pump supplier	: 0.00 m
NPSH margin dictated by user	: 0.00 m
NPSH margin used (added to 'required' values)	: 0.00 m

Mechanical Limits

Torque, rated power, rated speed	: 48.88 kW/1000 rpm
Torque, maximum power, rated speed	: 52.93 kW/1000 rpm
Torque, driver power, full load speed	: 61.29 kW/1000 rpm
Torque, driver power, rated speed	: 61.29 kW/1000 rpm
Torque, pump shaft limit	: -
Radial load, worst case	: -
Radial load limit	: -
Impeller peripheral speed, rated	: -
Impeller peripheral speed limit	: -

Stage, Speed and Solids Limits

Stages, maximum	: 1
Stages, minimum	: 1
Pump speed limit, maximum	: 3600 rpm
Pump speed limit, minimum	: 950 rpm
Curve speed limit, maximum	: 3600 rpm
Curve speed limit, minimum	: 950 rpm
Variable speed limit, maximum	: -
Variable speed limit, minimum	: -
Solids size limit	: 0.0 mm

Typical Driver Data

Driver speed, full load	: 1460 rpm
Driver speed, rated load	: 1460 rpm
Driver efficiency, 100% load	: N/A
Driver efficiency, 75% load	: N/A
Driver efficiency, 50% load	: N/A

Various Performance Data	Flow (m3/h)	Head (m)	Efficiency (%)	NPSHr (m)	Power (kW)
Shutoff, rated diameter	0.00	61.82	-	-	28.06
Shutoff, maximum diameter	0.00	61.82	-	-	28.06
MCSF	-	-	-	-	-
Rated flow, minimum diameter	411.3	24.10	68.03	-	39.63
Rated flow, maximum diameter	411.3	49.80	78.08	-	71.36
BEP flow, rated diameter	411.3	49.80	78.08	3.58	71.36
120% rated flow, rated diameter	493.6	41.89	74.73	5.63	75.26
End of curve, rated diameter	543.7	35.53	68.01	7.59	77.28
End of curve, minimum diameter	429.6	22.18	64.42	3.93	40.23
End of curve, maximum diameter	543.7	35.53	68.01	7.59	77.28
Maximum value, rated diameter	-	61.82	78.08	-	77.28
Maximum value, maximum diameter	-	-	78.08	-	77.28

System differential pressure	@ Density, rated	@ Density, max
Differential pressure, rated flow, rated diameter (bar)	4.88	4.88
Differential pressure, shutoff, rated diameter (bar)	6.05	6.05
Differential pressure, shutoff, maximum diameter (bar)	6.05	6.05

Discharge pressure	@ Suction pressure, rated	@ Suction pressure, max	@ Suction pressure, rated	@ Suction pressure, max
Discharge pressure, rated flow, rated diameter (bar.g)	4.88	4.88	4.88	4.88
Discharge pressure, shutoff, rated diameter (bar.g)	6.05	6.05	6.05	6.05
Discharge pressure, shutoff, maximum diameter (bar.g)	6.05	6.05	6.05	6.05

Ratios

Maximum flow / rated flow, rated diameter	: 132.20 %	Head rated diameter / head minimum diameter, rated flow	: 206.64 %

Pump Performance - Additional Data

Construction		
Vertical In-Line Pump Classifications	: Standard	