

PERFORMANCE ON DESIGN CURVE AT 1770 RPM

	Shut Off	Design [2]	Run Out [5]		
Flow (USGPM)	0.0	1050.0	1368.0	Best Efficiency	79.70 % at 913.0 USgpm
TDH-Bowl (ft)	169.0	104.0	61.9	Design Flow % BEP	115.01 %
TDH-Disch Flange (ft)	168.2	103.8	62.0	Pump Efficiency	78.13 %
Bowl Efficiency (%)	-	78.60	64.80	Overall Efficiency	0.00 %
Power (Hp)	27.7	35.0	33.0	NOL Power	35.0 Hp at 1058.0 USgpm
NPSHr (ft) [1]	-	12.6	25.7	Specified NPSH Ratio	1.1
NPSH Margin (ft) [1]	-	19.6	6.5	Thrust Load Power Loss	0.14212 Hp
Hydraulic Thrust(lb)	1625.0	998.0	594.0	Total Flow Derate Factor	1.00
Thrust (lb)	1784.5	1124.1	698.4	Total Head Derate Factor	1.00
Pressure-Bowl (psi)	73.2	45.0	26.8	Total Efficiency Derate Factor	1.00
Pressure-Disch Flange (psi)	72.8	44.9	26.8	Actual Submergence	-6.38 in
Min Submergence (Inch) [3]	-	26.95	31.63	Shaft Friction Power Loss	0.00 Hp
Friction Loss (ft) [4]	-	0.21	0.36	Min Flow (MCSF)	228.0 USgpm
Lineshaft Elongation (Inch)	0.00000	0.00000	-	kWh per 1000 gal	0.00000
Column Elongation (Inch)	0.00000	0.00000	-	Impeller Running Clearance	0.13 in
Lateral (Inch)	0.13000	0.13000	-		

[1] at 1st impeller eye [2] rated values [3] from pump suction inlet [4] from bowl to disch flange [5] per published data

OPERATING CONDITIONS

Specified Flow	1050.00 USgpm
Specified TDH	100.00 ft
Rated Speed	1770 RPM
Atmospheric Pressure	14.70 psi
Min. Recommended Sump Depth	0.25 ft
NPSHa at 1st Impeller	32.2 ft
NPSHa at Grade	34.0 ft
Operational Design	Constant Speed

FLUID CHARACTERISTICS

Fluid	Water
Fluid Temperature	68.0 °F
Specific Gravity	1.0000
Viscosity	1.0017 cP
Vapor Pressure	0.3393 psi
Density	62 lbs/ft³

MATERIALS & DIMENSIONS

Bowl Data

Bowl Material	Cast Iron with Glass Enamel
Impeller Material	Bronze
Bowlshaft Material	416SS
Impeller Attachment	Taper Lock
Taperlock Material	Carbon Steel
Suction Type	Bell
Suction Material	Cast Iron
Bowl Bolting Material	316SS
Sand Collar	304SS
Pipe Plug	Iron
Suction Bearing	Bronze
Intermediate Bowl Bearing	Bronze

Bowl Data

Strainer Type	Clip-On Bell Type Strainer
Strainer Material	304LSS
Impeller Trim	8.31 in
Bowl Pressure Limit	390 psi
Model Max Sphere Size	0.94 in
Available Lateral	0.85 in
Bowl Shaft Diameter	1 15/16 in [49.2 mm]
Impeller Balance	Manufacturer's Standard
Impeller Design	Enclosed
Bowl Shaft Power Limit	586.08 Hp
Bowl Assembly Provided By	Xylem

Bowl Specials

Column Data

Column Type	Flanged
Column Diameter	10 in [254 mm]
Lineshaft Diameter	1 1/2 in [38.1 mm]
Lineshaft Coupling Type	Threaded

Column Data

Lineshaft Coupling Material	416SS
Lubrication Method	(Open LS) Product Lube
Column Assembly Provided By	Customer

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	
Tag	
PO Number	
Serial Number	



SUBMITTAL

Quote ID: 9001-240923-021:0:1 QTY: 1
VIT-BAF 13CLC, 2 Stages

Motor Data

Driver Type	Vertical Hollow Shaft Motor
Motor Provided By	Customer

Motor Data

Motor Mounted By	Customer
------------------	----------

Motor Specials

Coating Data

Bowl OD	Tnemec 21 (NSF 61), Liquid
---------	----------------------------

Coating Data

	Epoxy (8 mils)
--	----------------

Testing Data

Performance Testing	Bowl Assembly Only	Non-Witness	Lab Motor	Full Speed
Hold Shipment for Testing Approval	Yes			
Acceptance Grade	1U			

Accessories

Engineering Services

NSF 61 Certified Construction	Approved
-------------------------------	----------

Engineering Services Notes

Miscellaneous Specials

Assembly and Crating

Assembly	Fully Assembled
Crating	Domestic Skid

Assembly and Crating Notes

In general, pumps are crated and shipped fully assembled* via standard freight methods (LTL/LCL) if overall crated length is 20 ft or less and weight is 2500 lbs or less. Up to 45 ft and 4000 lbs can still be fully assembled but will ship via dedicated freight methods (FTL/FCL/flatbed/air/special). Otherwise, each sub-assembly (bowl, column, and head) is crated separately ("column loose"). *Motors, suction cans, mechanical seals, spare parts, and other special items are crated separately. Coordinate specific expectations with the factory at time of order.

Weight Data

Total Bowl Weight	479 lbs
-------------------	---------

Weight Data

Total Weight	479 lbs
--------------	---------

Comments

INFO, WARNING & ERROR MESSAGES

Our offer does not include specific review and incorporation of any Statutory or Regulatory Requirements, and the offer is limited to the requirements of the design specifications. Should any Statutory or Regulatory requirements need to be reviewed and incorporated, then the Customer is responsible to identify those and provide copies for review and revision of our offer.

Our quotation is offered in accordance with our comments and exceptions identified in our proposal and governed by our standard terms and conditions of sale – Xylem Americas. Available here: <https://www.xylem.com/en-us/support/xylem-americas-standard-terms-and-conditions/>

For units requiring a factory performance test, all performance tests will be conducted per ANSI/HI 14.6 standards unless otherwise noted. As a standard, test results for the primary design point meeting grade 2B tolerances for pumps with a rated shaft power of 134 hp or less and grade 1B for greater than 134 hp will be considered passing. If secondary or tertiary design points are required to be tested, these will be subject to grade 3B tolerances. For testing of more than 3 points, consult the factory. Other acceptance grades are available and must be

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	
Tag	
PO Number	
Serial Number	

clearly noted and mutually agreed upon between the Customer and Xylem before release to manufacture.

Holding shipment for testing approval allows 2 weeks of calculated production lead time for the approval process. If shipment approval has not been obtained by 4 weeks after submission of passing test results, Xylem reserves the right to ship product on purchase orders less than or equal to \$10,000 USD without explicit approval, or to impose storage fees until shipment approval is granted on purchase orders greater than \$10,000 USD. For planned approval processes exceeding 2 weeks, please consider that additional lead time and coordinate expectations with the factory, including storage fees. For faster shipment, select "No" to the hold shipment for testing approval option.

For units not requiring a factory performance test, product performance can be expected to meet 3B tolerances primarily due to the variability of field conditions. Field-measured performance may vary from factory-measured performance or published data as a result of unknown or unpredictable system conditions and measurement variability. If field performance testing is required after installation, factory performance testing before shipment is strongly recommended. Field performance test results do not constitute a warranty claim unless verified by Xylem.

The information provided in this submittal is published data nominally representative of the selected pump model's performance characteristics. If factory performance testing is included, actual as-tested performance curves for each tested pump will be provided after testing is complete. Impeller trim diameter is subject to change to meet intended design conditions.

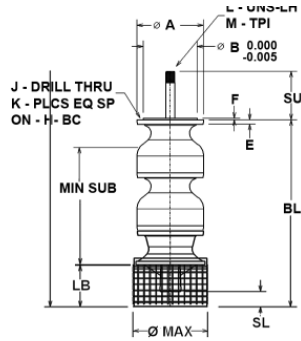
Special requests are subject to further review after receipt of customer purchase order during the factory's order entry and design engineering processes. If NSF 61 certified construction is required, an additional audit will be completed. The Xylem team will communicate any discrepancies and possible changes. Xylem certifies that the materials specified with a NSF 61 certified construction are in compliance with NSF/ANSI/CAN 61 Drinking Water System Components - Health Effects. In compliance with NSF, Xylem vertical turbine pumps are assembled in NSF certified facilities in our Vertical Turbine Global Center of Excellence in Lubbock, TX, or our Vertical Column Pump factory in Pewaukee, WI. For more information, see our official listing here: <https://info.nsf.org/Certified/PwsComponents/Listings.asp?Company=1D860&Standard=061>

Customer is responsible for verifying that the recommendations made and the materials selected are satisfactory for the Customer's intended environment and Customer's use of the selected pump. Customer is responsible for determining the suitability of Xylem recommendations for all operating conditions within Customer's and/or End User's control. Xylem disclaims all warranties, express or implied warranties, including, but not limited to, warranties of merchantability and fitness for a particular purpose, and all express warranties other than the limited express warranty set forth in the attached standard terms and conditions of sale – Xylem Americas attached hereafter.

Xylem does not guarantee any pump intake configuration. The hydraulic and structural adequacies of these structures are the sole responsibility of the Customer or his representatives. Further, Xylem accepts no liability arising out of unsatisfactory pump intake field operating conditions. The Customer or his representatives are referred to the Hydraulic Institute Standards for recommendations on pump intake design. To optimize the hydraulic design of a field pump intake configuration, the Customer should strongly consider performing a detailed scale model pump intake study. However, the adequacies of these recommendations are the sole responsibility of the Customer.

Xylem's standard enamel paint offering is a coating applied at no extra charge and is intended to provide a limited cosmetic improvement over the bare metal product. The coating will not prevent rust, corrosion, or fading. Fading, flaking, chipping, or bleeding rust can be expected within 3 months of exposure to weather or other elements. For applications where visual aesthetics or corrosion resistance is important, please consider one of our protective coating options.

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED	
Certified By	
Project	
Tag	
PO Number	
Serial Number	



DIMENSIONS

J [Mounting Flange Hole Dia]	0.68 in
K [Mounting Hole Places]	8
H [Mounting Flange Bolt Circle]	11.25 in
COL [Column Diameter]	10.00 in
MIN SUB [Minimum Submergence]	26.95 in
LB [Length to Bottom]	6.38 in
MAX [Max Assembly OD]	12.38 in
BL [Bowl Assembly Length]	34.20 in
A [Flange OD]	12.37 in
B [Register OD]	10.12 in
F [Bowl Register Height]	0.25 in
E [Bowl Flange Thickness]	0.75 in
L [Shaft Turndown Size]	1.50 in
M [Threads Per Inch]	10
SU [Shaft Stickup]	8.00 in
SL [Suction Length]	0.82 in

PUMP DATA

Column Diameter	10 in [254 mm]
Lineshaft Diameter	1 1/2 in [38.1 mm]
Specified Flow	1050.00 USgpm
Specified TDH	100.00 ft
Motor Manufacturer	
Driver Type	Vertical Hollow Shaft Motor
Motor Speed	1770 RPM

WEIGHTS

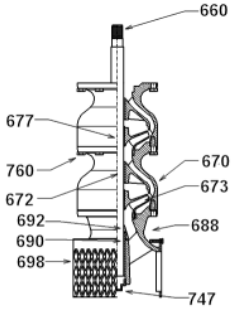
Total Bowl Weight	479 lbs
Total Weight	479 lbs

NOTES

1	Total Pump Length ± 1.0 inch.
2	Tolerance on all dimensions is .12 or ± .12 inch per 5 ft, whichever is greater.
3	All dimensions shown are in inches unless otherwise specified.
4	Drawing not to scale.
5	½" NPT – Gauge Conn (plugged)
6	Driver may be rotated at 90° intervals about vertical centerline for details refer to driver dimension drawing.
7	Refer to product IOM for impeller setting requirements.
8	This assembly has been designed so that its natural frequency responses avoid the specific operating speeds by an adequate safety margin. The design has assumed the foundation to be rigid.

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	
Tag	
PO Number	
Serial Number	

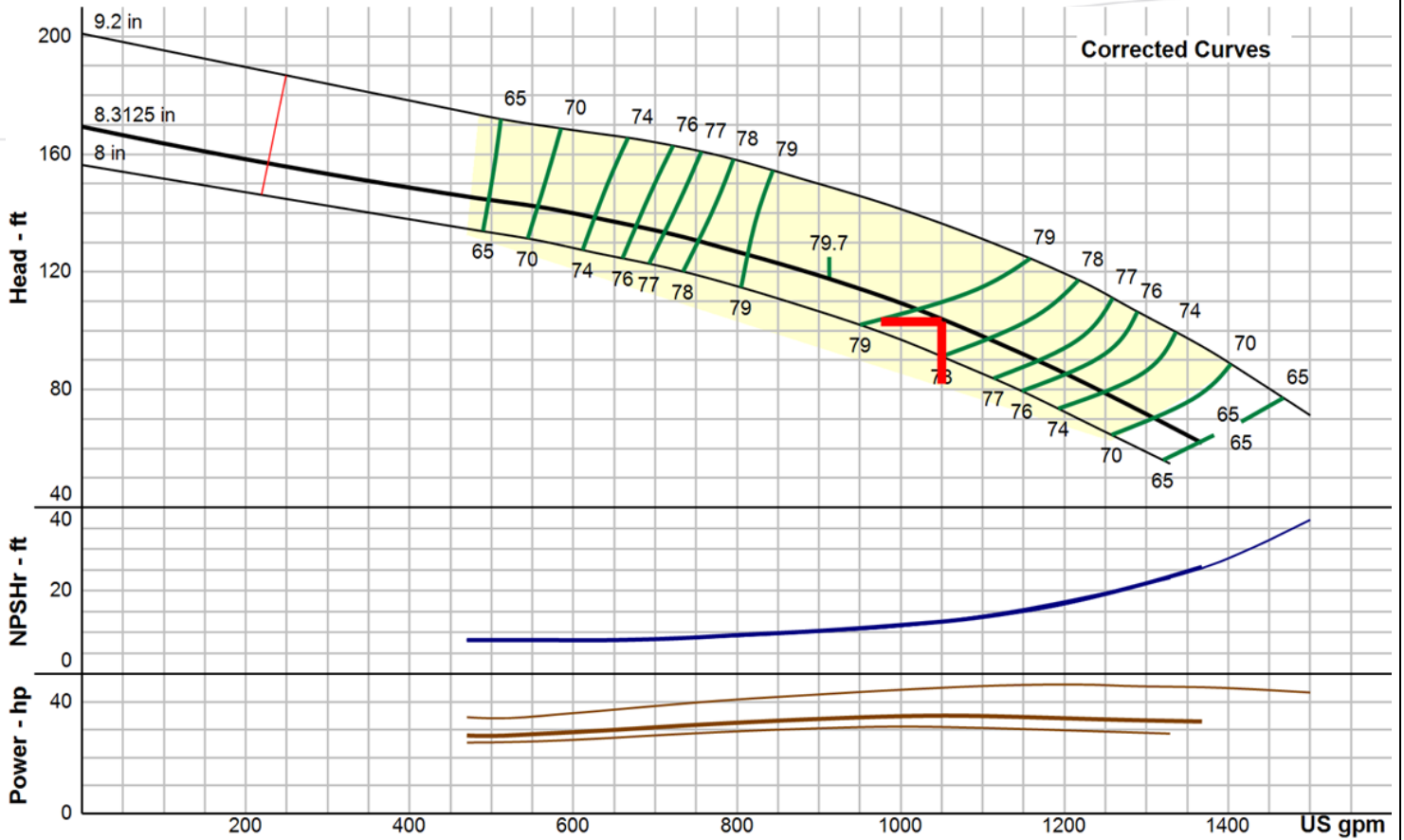


BILL OF MATERIALS

ITEM	PART NAME	CODE	MATERIAL	ASTM#
Bowl Assembly				
660	Bowlshaft	2227	SST 416	A582 S41600
670	Bowl - Intermediate	6911	Cast Iron CL 30 Enamel	A48
672	Bearing - Intermediate Bowl	1618	Bismuth Bronze	B584 Modified
673	Impeller	1398	Silicon Bronze C87610	B584
677	Taperlock - Impeller	2242	Carbon Steel 1018	A108
688	Suction	1003	Cast Iron CL 30	A48 CLASS 30B
690	Bearing - Suction	1618	Bismuth Bronze	B584 Modified
692	Sandcollar	1205	SST 304	A744M
698	Strainer	9724	SST 304L Fab	A182
747	Plug - Pipe	1046	Malleable Iron	A197
760	Capscrew - Hex	2229	SST 316	A276

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	
Tag	
PO Number	
Serial Number	



Curve & hydraulic data presented is nominal performance based on ANSI/HI 14.6 acceptance grade 1U.

Design values are guaranteed within the following tolerances: Flow 0% to + 10%, Head 0% to + 6%, and optionally either Power + 10% or Efficiency - 0% at manufacturer's discretion.

Specified Flow	1050.00 USgpm	Shut Off TDH (Disch Flange)	168.3 ft	Design Curve	
Specified TDH	100.00 ft	Shut Off Pressure (Bowl)	73.2 psi	Allow Service Factor	No
Rated Speed	1770 RPM	Shut Off Pressure (Disch Flange)	72.8 psi	kWh per 1000 gal	0.00000
Atmospheric Pressure	14.70 psi	Run Out Flow	1368.0 USgpm	NPSHr at Design	12.6 ft
NPSHa at Grade	34.0 ft	Run Out TDH (Bowl)	61.9 ft	NPSH Margin at Design	19.6 ft
NPSHa at 1st Impeller	32.2 ft	Run Out TDH (Disch Flange)	62.0 ft	Min Submergence at Design	26.95 in
Fluid	Water	Run Out Pressure (Bowl)	26.8 psi	Actual Submergence	-6.38 in
Fluid Temperature	68.0 °F	Run Out Pressure (Disch Flange)	26.8 psi	Thrust K-Factor	9.5 lbf/ft
Specific Gravity	1.0000	Bowl Efficiency at Design	78.60 %	Thrust at Design	1124.1 lb
Viscosity	1.0017 cP	Best Efficiency	79.70 %	Thrust at Shut Off	1784.5 lb
Vapor Pressure	0.3393 psi	BEP Flow	913.0 USgpm	Thrust at Run Out	698.4 lb
Density	62 lbs/ft ³	Design Flow % BEP	115.01 %	Bowl Material	Cast Iron with Glass Enamel
Design Flow	1050.0 USgpm	Pump Efficiency	78.13 %	Bowl Material Derate Factor	1.00
Min Flow (MCSF)	228.0 USgpm	Friction Loss at Design	0.21 ft	Impeller Material	Bronze
Design TDH (Bowl)	104.0 ft	Power at Design	35.0 Hp	Impeller Matl Derate Factor	1.00
Design TDH (Disch Flange)	103.8 ft	NOL Power	35.0 Hp	Total Flow Derate Factor	1.00
Design Pressure (Bowl)	45.0 psi	Max Power (NOL) Flow	1058.0 USgpm	Total Head Derate Factor	1.00
Design Pressure (Disch Flange)	44.9 psi	Recommended Power	40.00 Hp	Total Efficiency Derate Factor	1.00
Shut Off TDH (Bowl)	169.0 ft	Driver Size Criteria	NOL Power Across		

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	
Tag	
PO Number	
Serial Number	