

## Pump Performance Datasheet

Customer :	Quote Number / ID :	1141840
Customer ref. / PO :	Model :	4012A-4P-15HP LCSE
Tag Number : Hurley Engineering	Stages :	1
Service : HYDRONIC	Based on curve number :	RC9919-SS-9.49 Rev 0
Quantity : 1	Basic model number :	-
	Date last saved :	03/30/2020 5:26 PM

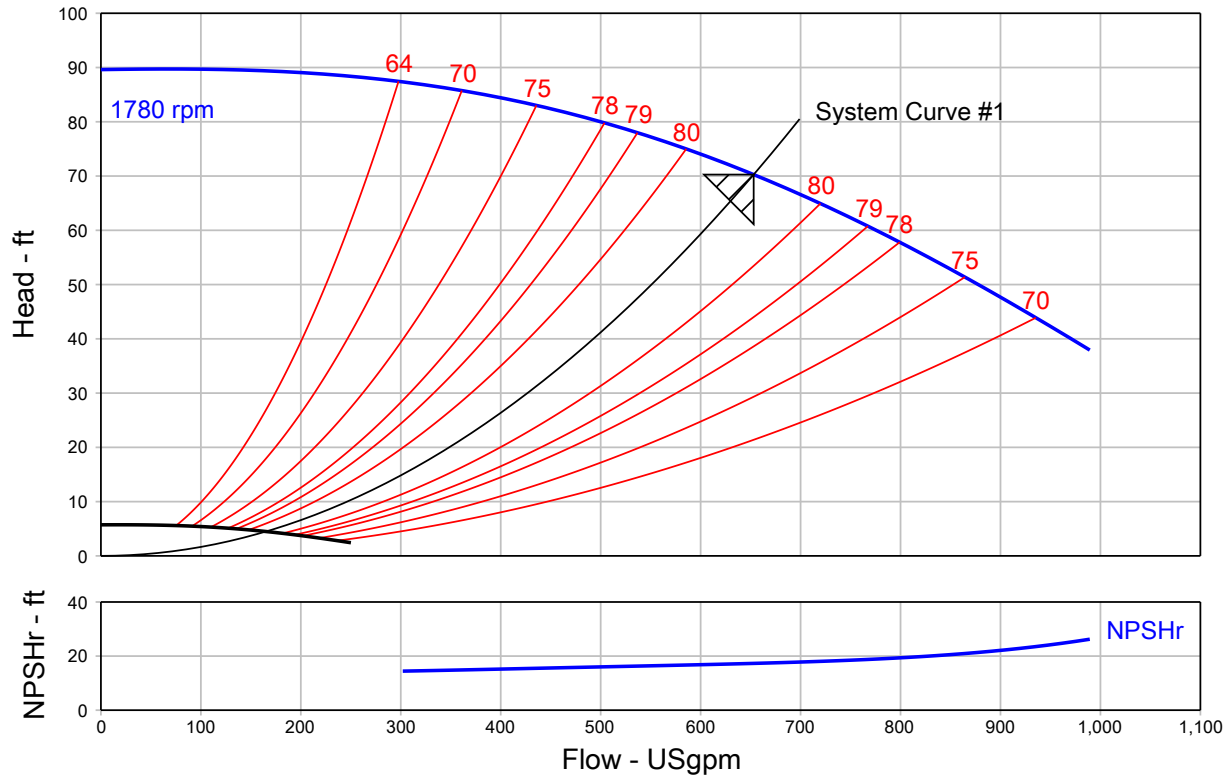
Operating Conditions		Liquid	
Flow, rated	: 653.1 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 70.27 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 70.27 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
		Viscosity, rated	: 1.00 cP
		Vapor pressure, rated	: 0.34 psi.a

Performance		Material	
Speed, rated	: 1780 rpm	Material selected	: Cast Iron
Speed, maximum	: 1780 rpm		
Speed, minimum	: 450 rpm		
Impeller diameter, rated	: 9.49 in		
Efficiency	: 80.50 %		
NPSH required / margin required	: 17.29 / 0.00 ft		
nq (imp. eye flow) / S (imp. eye flow)	: 36 / 104 Metric units		
MCSF	: 238.5 USgpm		
Head maximum, rated speed	: 89.73 ft		
Head rise to shutoff	: 27.53 %		
Flow, best eff. point	: 653.1 USgpm		
Flow ratio, rated / BEP	: 100.00 %		
Speed ratio (rated / max)	: 100.00 %		
Head ratio (rated speed / max speed)	: 100.00 %		
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		

Pressure Data	
Maximum working pressure	: 38.83 psi.g
Maximum allowable working pressure	: 175.0 psi.g
Maximum allowable suction pressure	: 175.0 psi.g
Hydrostatic test pressure	: 263.0 psi.g

Driver & Power Data (@Max density)	
Motor sizing specification	: Max power (non-overloading)
Margin over specification	: 0.00 %
Service factor	: 1.00 (used)
Power, hydraulic	: 11.58 hp
Rated power (based on duty point)	: 14.39 hp
Max power (non-overloading)	: 14.97 hp
Nameplate motor rating	: 15.00 hp / 11.19 kW (Fixed)

Energy Indexes	
PEI (VL)	: 0.49
ER (VL)	: 51



## Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD

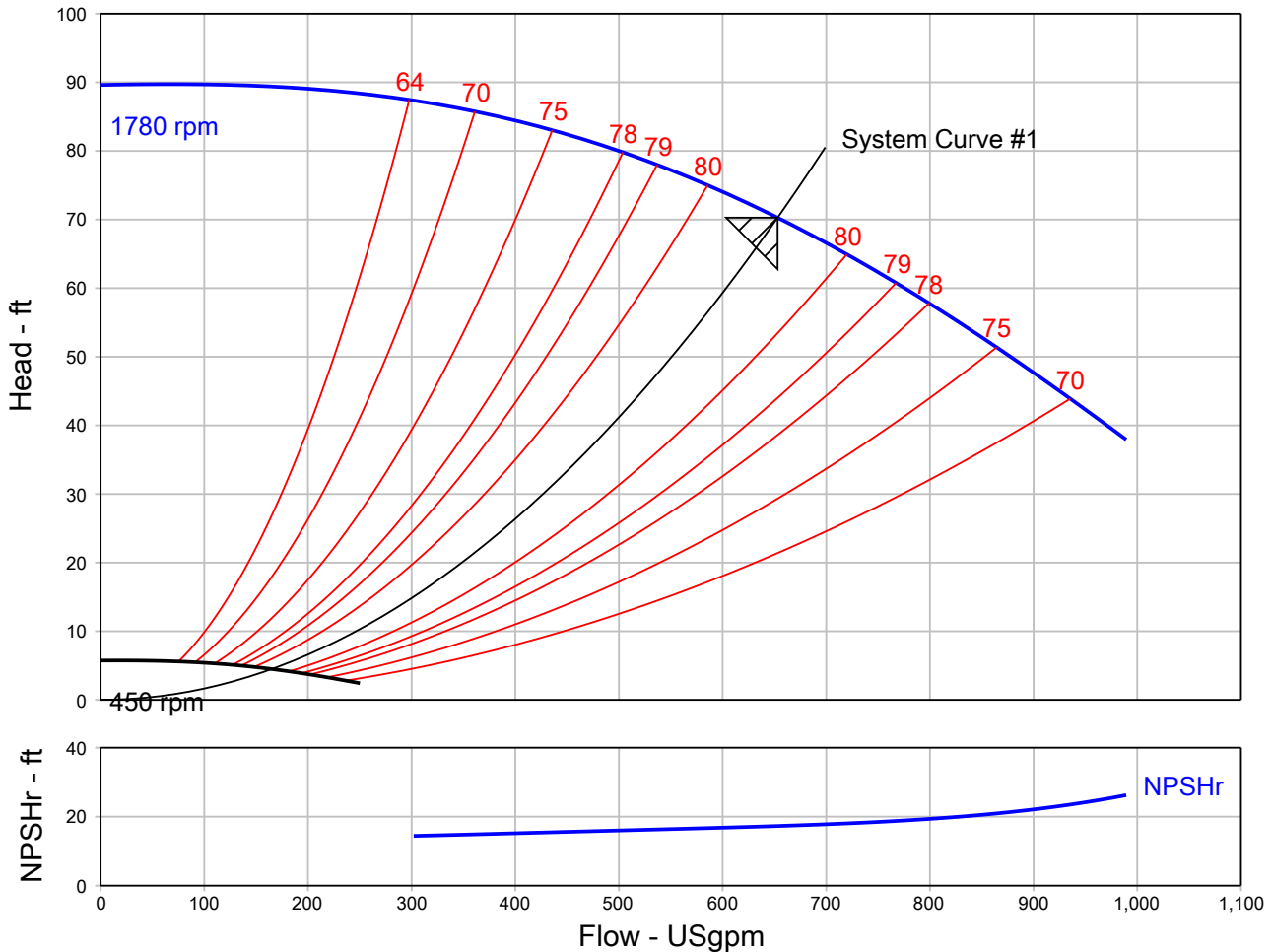
QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	QUANTITY 1
	SERVICE HYDRONIC	
REPRESENTATIVE	SUBMITTED BY	DATE
ENGINEER	APPROVED BY	DATE
CONTRACTOR	ORDER #	DATE



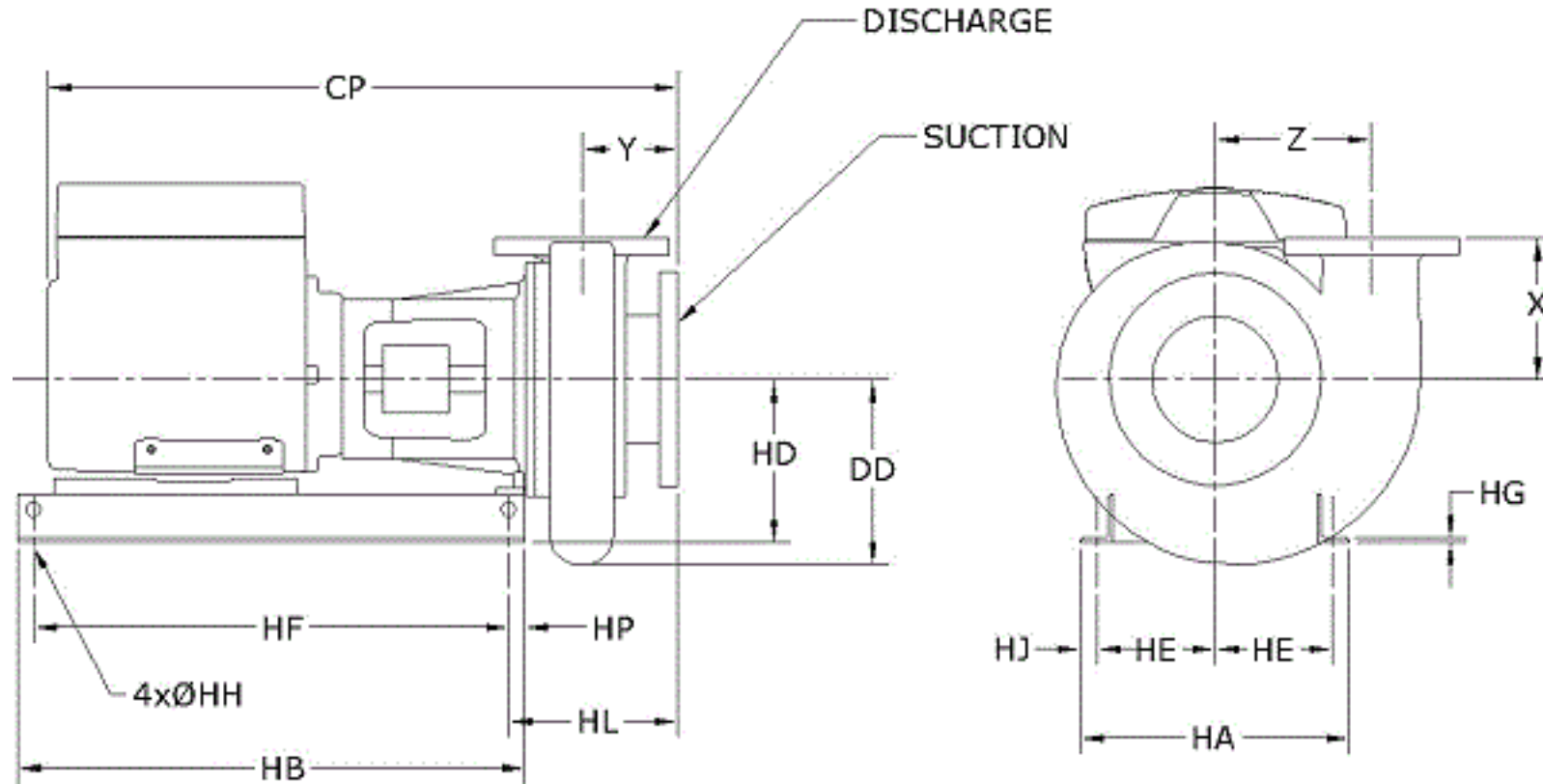
**LCSE 4012A-4P-15HP**  
**1780 rpm**

Part Number N/A

Conditions of Service		Pump Data		Motor Data	
Flow	653.1 USgpm	Impeller Diameter	9.49 in	Motor HP	15 HP
Head	70.27 ft	Efficiency	80.5 %	BHP	14.39
Liquid	Cold Water	Suction	5 in.	Enclosure	TEFC
Temperature	68.00 deg F	Discharge	4 in.	Voltage	460 V
NPSHr	17.29 ft	PEI (VL)	0.49	Phase	3 Phase
Viscosity	1.00 cP	ER (VL)	51	Cycle	60
Specific Gravity	1.000 SG			Frame Size	254TC



**Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD**



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Units	Frame	Suct	Disch	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z
inches	254TC	5	4	41.00	10.70	17.00	32.00	11.00	7.50	30.00	0.25	0.63	1.00	8.75	1.00	10.00	5.18	8.38

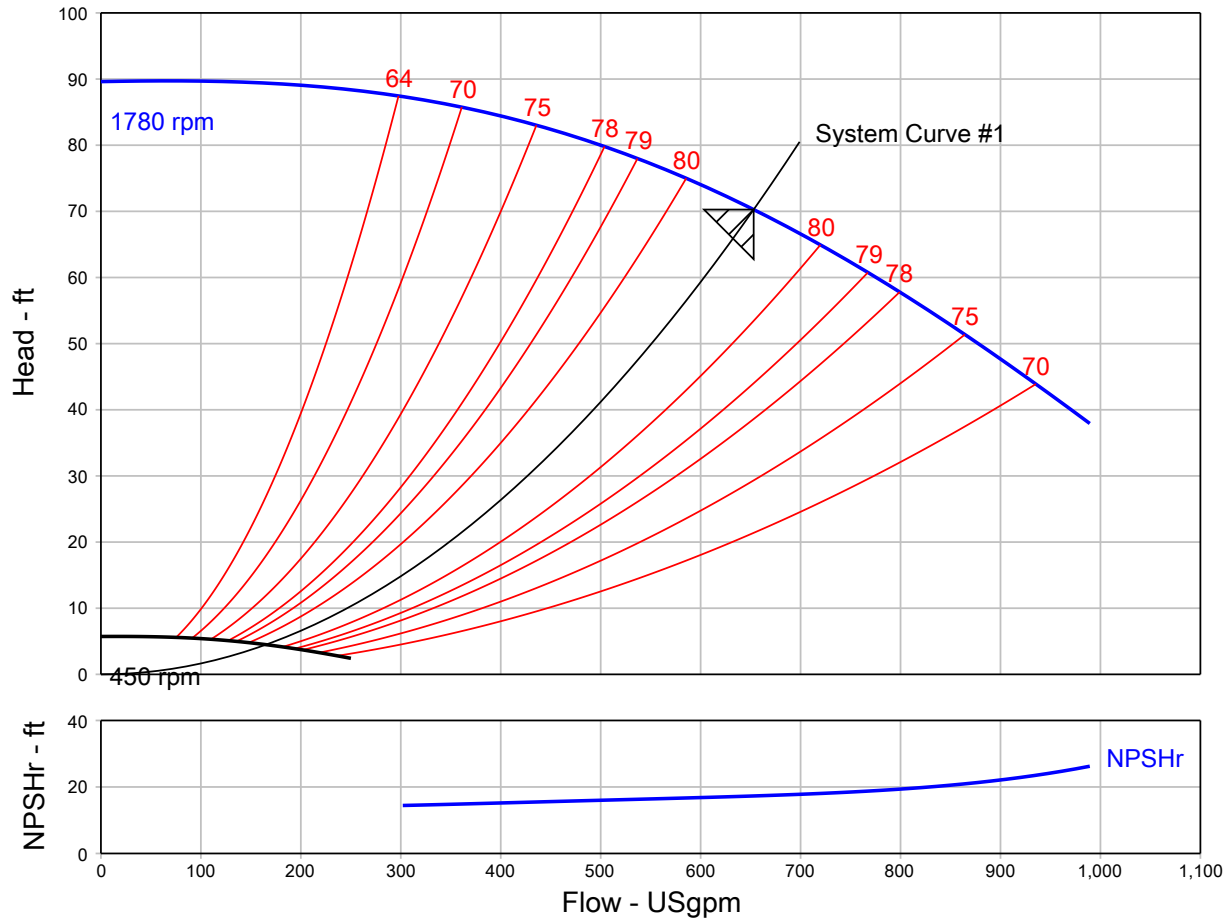
**Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD**

<b>QUOTE NUMBER / ID 1141840</b>	<b>UNIT TAG Hurley Engineering</b>	<b>LCSE 4012A-4P-15HP</b>
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<b>MATERIALS OF CONSTRUCTION</b>			
<b>PART</b>	<b>MATERIAL</b>	<b>PART</b>	<b>MATERIAL</b>
Rotation Options	Clockwise	Impeller Washer	S.S., AISI-303
Base/Stand Type	Steel Base / Cast Iron	Impeller Key	Steel, AISI 1045
Bushing	Vesconite	Coupling Options	Rigid Aluminum Axially Split Coupling
Wear Ring Material	Vesconite	Pump Coatings	Standard Paint
Seal Type	Type 21	Seal Material	Ceramic/Carbon/Buna
O-Rings	Buna N	Casing	Cast Iron, ASTM-A48, CL 30
Backplate/Seal Plate	Cast Iron, ASTM-A48, CL 30	Seal Flush Options	External Flush, plastic tubing
Gaskets	Vegetable Fiber	Motor Bracket	Cast Iron, ASTM-A48, CL 30
Casing Bolts	Steel, Grade 5	Impeller	Stainless Steel, AISI-304
Impeller Cap Screw	S.S., AISI-303		

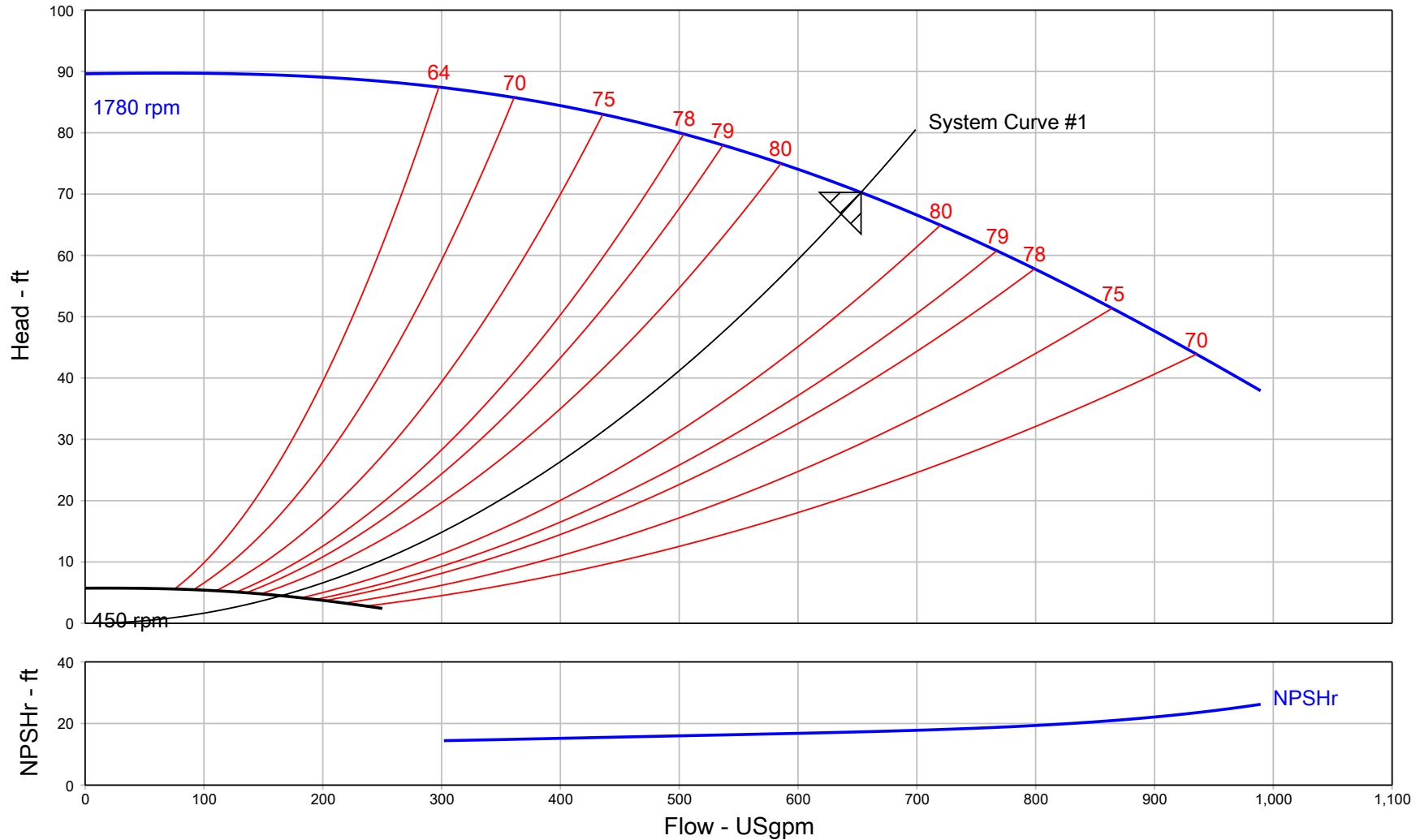
\* All materials based on STANDARD configuration

**Pump Performance Curve**



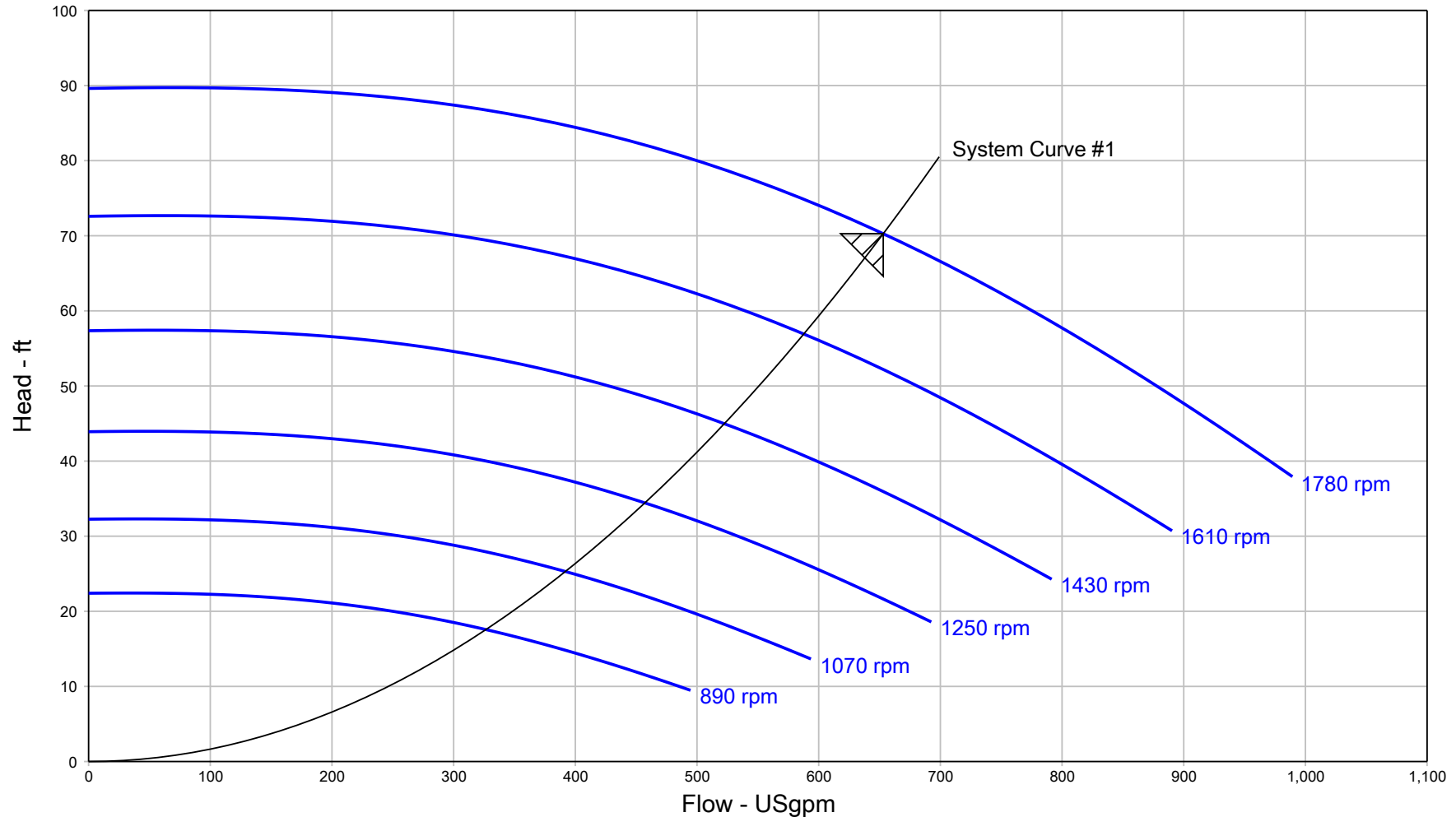
Customer :	Model :	4012A-4P-15HP LCSE
Customer ref. / PO :	Stages :	1
Tag Number : Hurley Engineering	Speed, rated :	1780 rpm
Service : HYDRONIC	Based on curve number :	RC9919-SS-9.49 Rev 0
Quantity : 1	Efficiency :	80.50 %
Quote Number / ID : 1141840	Rated power (based on duty point) :	14.39 hp
Date last saved : 03/30/2020 5:26 PM	NPSH required :	17.29 ft
Flow, rated : 653.1 USgpm	Viscosity :	1.00 cP
Differential head / pressure, rated : 70.27 ft	Cq/Ch/Ce/Cn [ANSI/Hi 9.6.7-2010] :	1.00 / 1.00 / 1.00 / 1.00
Fluid density, rated / max : 1.000 / 1.000 SG	Impeller diameter, rated :	9.49 in
	PEI (VL) :	0.49
	ER (VL) :	51

**Pump Performance Curve**



Project name : LCSE Project NC	Tag Number : Hurley Engineering	Flow, rated : 653.1 USgpm
Consulting engineer :	Service : HYDRONIC	Differential head / pressure, rated : 70.27 ft
Customer :	Model : 4012A-4P-15HP LCSE	Rated power (based on duty point) : 14.39 hp
Customer ref. / PO :	Quantity : 1	Max power (non-overloading) : 14.97 hp
Quote Number / ID : 1141840	Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY	Efficiency : 80.50 %
Date last saved : 03/30/2020 5:26 PM	Quoted By (Sales Engineer) : Steven Leingang	Impeller diameter, rated : 9.49 in
Based on curve number : RC9919-SS-9.49 Rev 0	Stages : 1	PEI (VL) : 0.49
	Speed, rated : 1780 rpm	ER (VL) : 51

**Multi-Speed Performance Curve**



Project name : LCSE Project NC	Tag Number : Hurley Engineering	Speed, rated : 1780 rpm
Consulting engineer :	Service : HYDRONIC	Flow, rated : 653.1 USgpm
Customer :	Model : 4012A-4P-15HP LCSE	Differential head / pressure, rated : 70.27 ft
Customer ref. / PO :	Quantity : 1	Fluid density, rated / max : 1.000 / 1.000 SG
Quote Number / ID : 1141840	Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY	Viscosity : 1.00 cP
Date last saved : 03/30/2020 5:26 PM	Quoted By (Sales Engineer) : Steven Leingang	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00
	Stages : 1	Based on curve number : RC9919-SS-9.49 Rev 0

**Construction Datasheet**

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDRONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 4012A-4P-15HP LCSE
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY
Date last saved	: 03/30/2020 5:26 PM	Quoted By (Sales Engineer)	: Steven Leingang

Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Grundfos MLE
Suction	5	125# ANSI	-	Frame Size	: 254TC
Discharge	4	125# ANSI	-	Power	: 15.00 hp

Orientation / Configuration	: Horizontal	RPM	: 1800 rpm
Rotation	: Clockwise	Enclosure	: TEFC
Wear Ring Configuration	: Single - Case	Operating Power Supply	: 460/3/60
Discharge Elbow Size	: -	Efficiency	: Energy/IE2
Subplate	: -	Service factor	: 1.15
Sump Depth (feet)	: -	Motor Application	: Suitable for Variable Speed Drive
Bearing Frame	: -	Motor Options/Accessories	: -
Bearing Frame Foot	: -	Cord Length (feet)	: -

Materials	
Case	: Cast Iron, ASTM A48 - Class 30
Motor Bracket	: Cast Iron, ASTM-A48, CL 30
Impeller	: Stainless Steel, AISI-304 (H304)
Impeller Cap Screw and Washer	: Stainless Steel, AISI-303
Impeller Key	: Stainless Steel, AISI 316
Case wear ring	: Vesconite
Impeller wear ring	: -
Pump Shaft	: Stainless Steel, AISI-303
Sleeve	: -
Line Shaft	: -
Column	: -
Discharge Pipe	: -
Discharge Elbow	: -
Suction Elbow	: -
Subplate	: -
Hardware	: Steel, Grade 5
O Rings	: Buna N
Pump Coatings	: Standard Manufacturer's Paint

Baseplate, Coupling and Guard	
Baseplate	: Welded Steel Fabrication
Drip Pan	: No drip pan
Coupling	: Rigid, Axial Split Coupling (aluminum) RASC3
Guard	: OSHA Approved

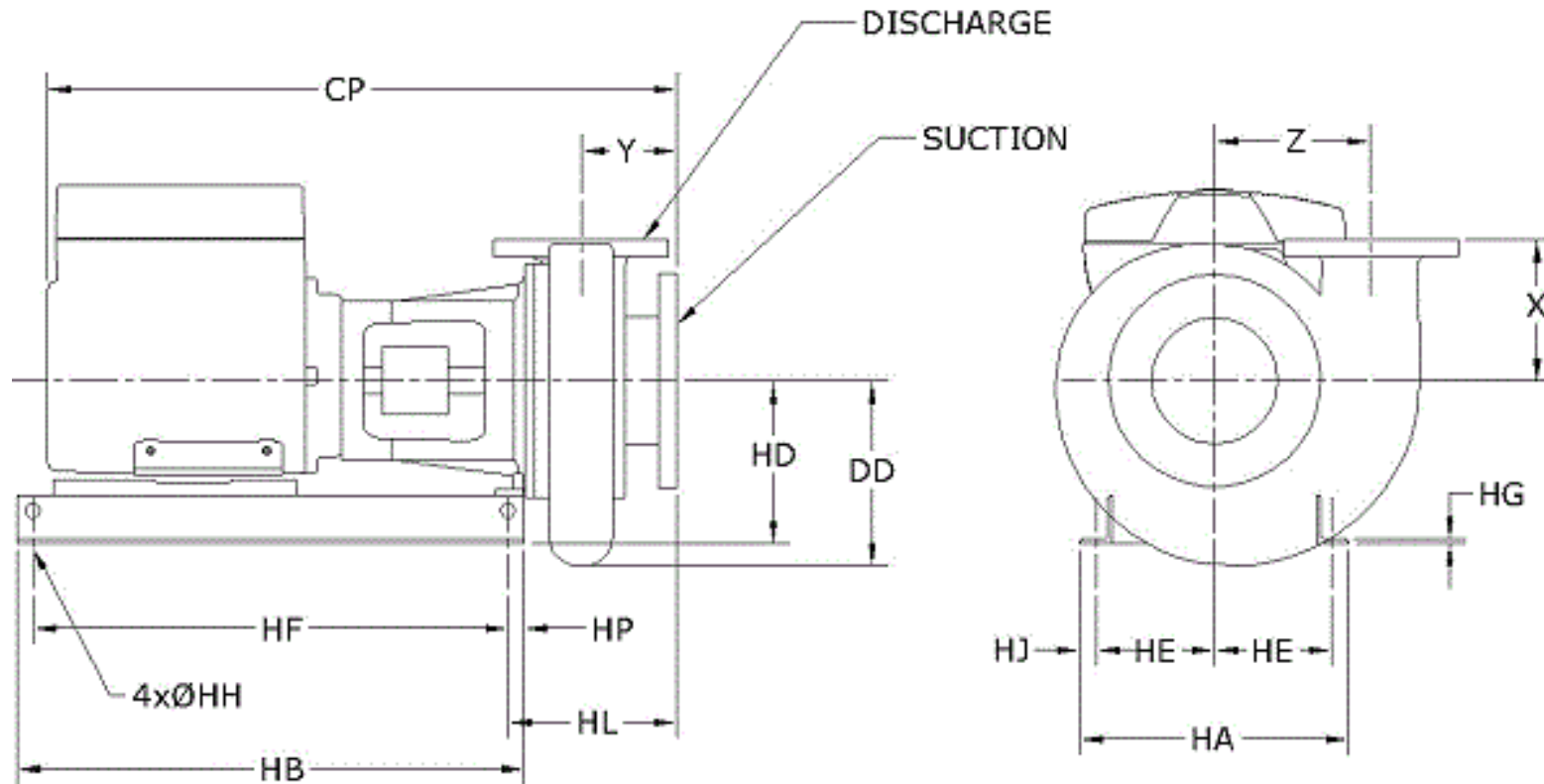
Seal & Packing Construction	
Sealing Method	: Single Seal, Type 21
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware
Packing Gland	: -
Lantern Ring	: -
Recirculation Lines	: Nylon Tubing with Brass Fittings

Weights (Approx.)	
Pump	: 248.0 lb
Baseplate	: 29.00 lb
Driver	: 283.0 lb
Estimated Shipping gross weight	: 560.0 lb



## General Arrangement

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDRONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 4012A-4P-15HP LCSE
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY
Date last saved	: 03/30/2020 5:26 PM	Quoted By (Sales Engineer)	: Steven Leingang



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Units	Frame	Suct(in)	Disch(in)	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z	Weight ea
inches	254TC	5	4	41.00	10.70	17.00	32.00	11.00	7.50	30.00	0.25	0.63	1.00	8.75	1.00	10.00	5.18	8.38	560.0

Conditions of Service				Motor Data			
Flow: 653.1 USgpm	Fluid: Cold Water	HP: 15	Encl: TEFC	Phase: 3	Efficiency: Energy/IE2		
TDH: 70.27 ft	Temp.: 68.00 deg F	RPM: 1780 rpm	Hz: 60	Voltage: 460	S.F.: 1.15		