

Pump Performance Datasheet

Customer	:		Quote Number / ID	:	1141840
Customer ref. / PO	:		Model	:	20709-4P-3HP LCSE
Tag Number	:	Hurley ENGINEERING	Stages	:	1
Service	:	HYDRONIC	Based on curve number	:	RC9912-1-SS-7.1-4P Rev 0
Quantity	:	1	Basic model number	:	-
			Date last saved	:	03/30/2020 12:54 PM

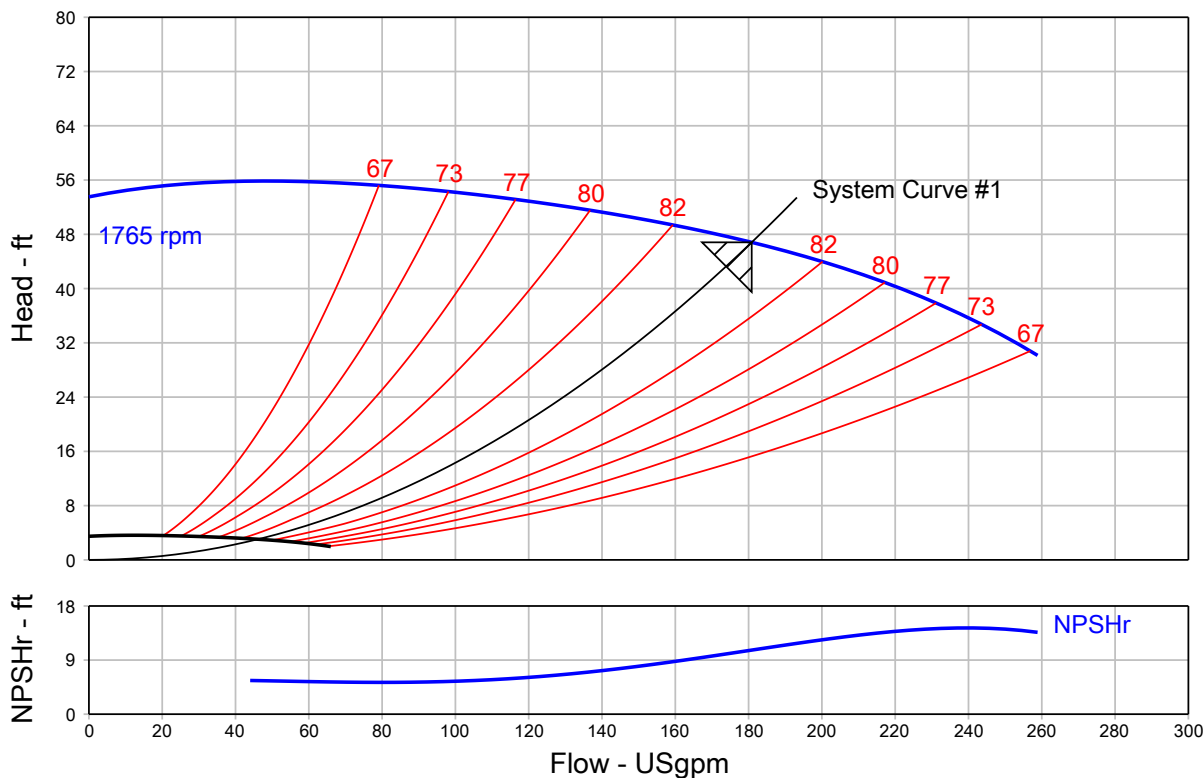
Operating Conditions		Liquid	
Flow, rated	: 180.8 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 46.82 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 46.82 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 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

Performance		Material	
Speed, rated	: 1765 rpm	Material selected	: Cast Iron
Speed, maximum	: 1765 rpm		
Speed, minimum	: 450 rpm		
Impeller diameter, rated	: 7.10 in		

Efficiency	: 82.68 %		
NPSH required / margin required	: 10.66 / 0.00 ft		
nq (imp. eye flow) / S (imp. eye flow)	: 26 / 78 Metric units		
MCSF	: 53.60 USgpm		
Head maximum, rated speed	: 55.86 ft		
Head rise to shutoff	: 14.33 %		
Flow, best eff. point	: 180.8 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		

Energy Indexes		Pressure Data	
PEI (VL)	: 0.41	Maximum working pressure	: 24.17 psi.g
ER (VL)	: 59	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	: 2.14 hp
Rated power (based on duty point)	: 2.59 hp
Max power (non-overloading)	: 2.99 hp
Nameplate motor rating	: 3.00 hp / 2.24 kW (Fixed)



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

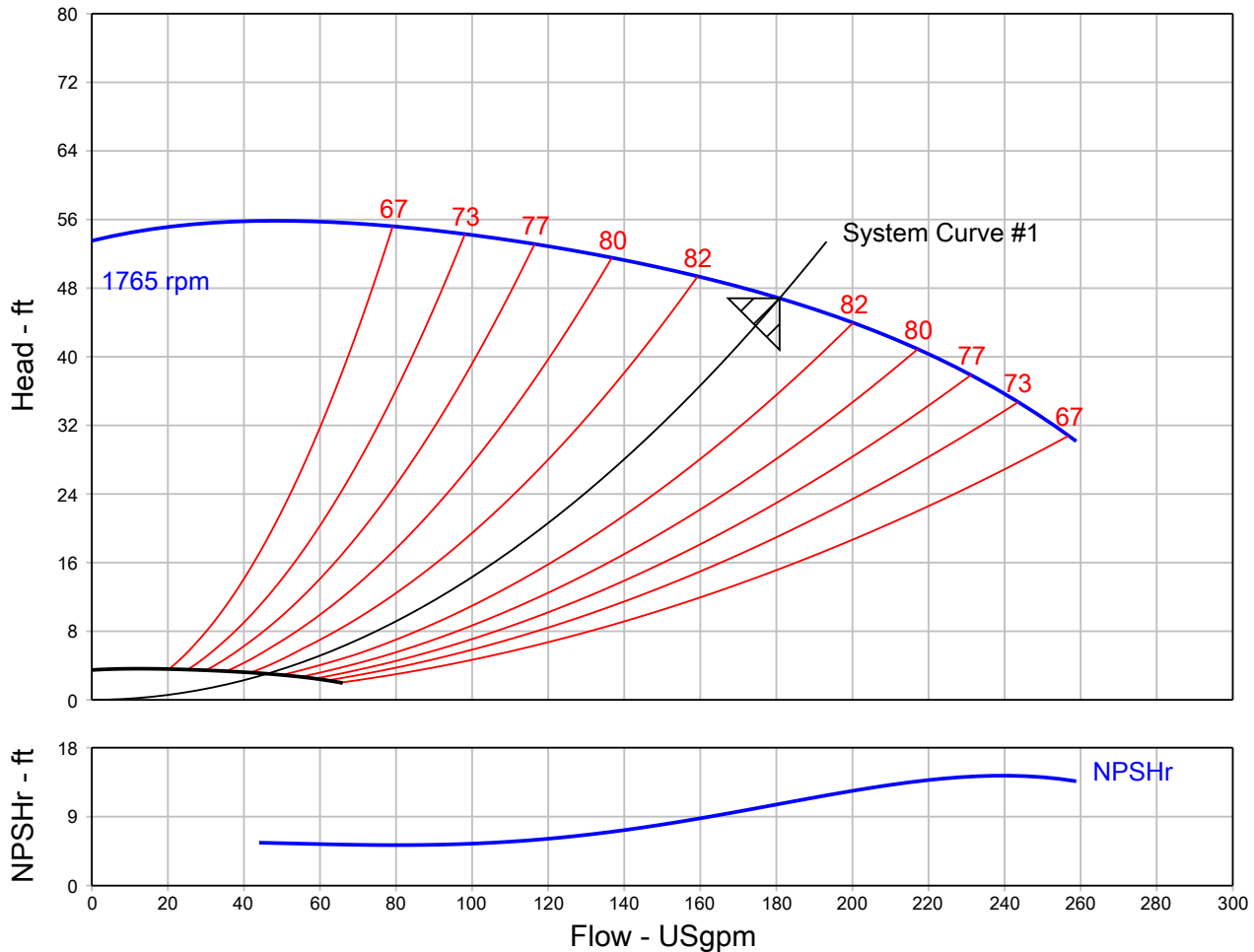
QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	QUANTITY 1
	SERVICE HYDRONIC	
REPRESENTATIVE	SUBMITTED BY	DATE
ENGINEER	APPROVED BY	DATE
CONTRACTOR	ORDER #	DATE



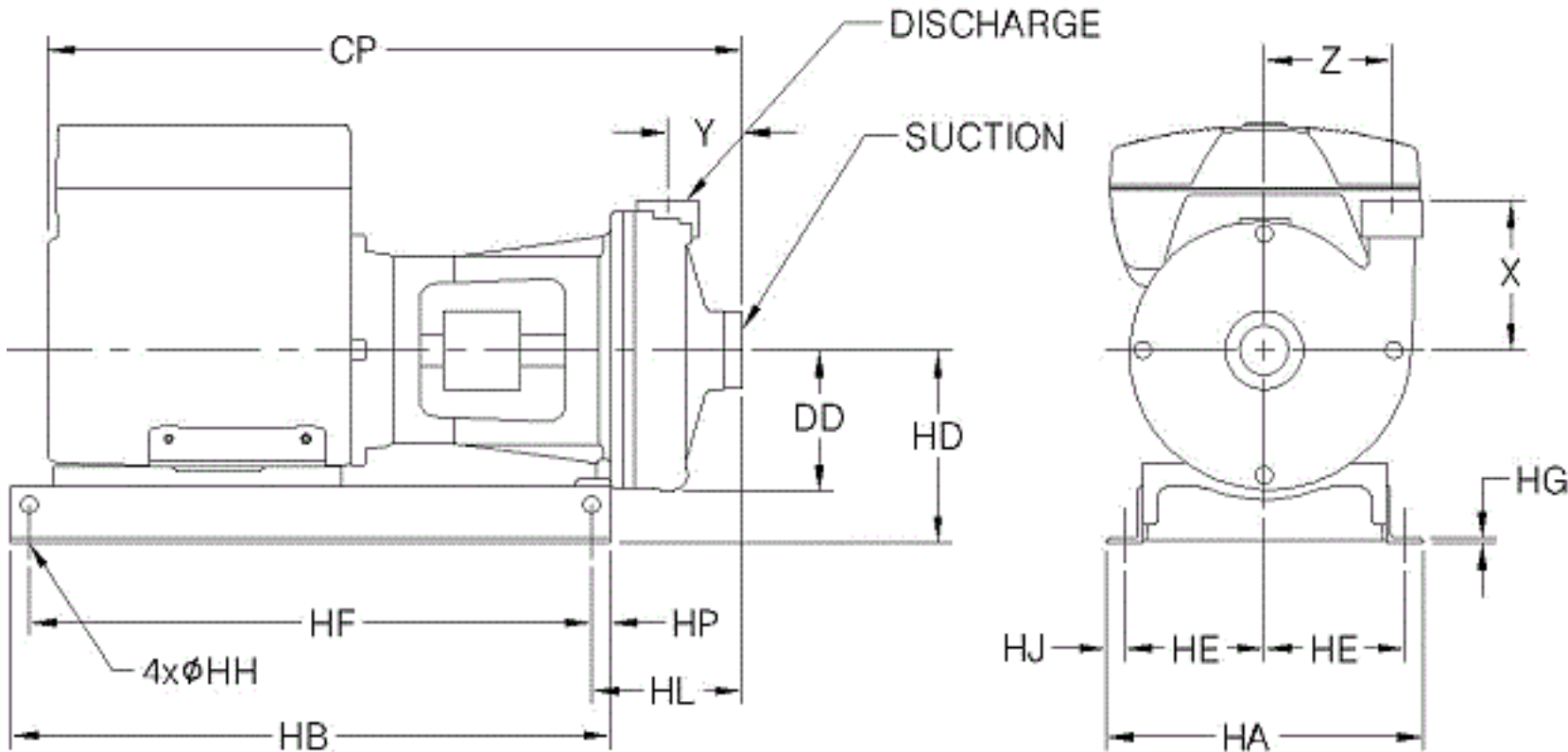
LCSE 20709-4P-3HP
1765 rpm

Part Number N/A

Conditions of Service		Pump Data		Motor Data	
Flow	180.8 USgpm	Impeller Diameter	7.10 in	Motor HP	3 HP
Head	46.82 ft	Efficiency	82.68 %	BHP	2.59
Liquid	Cold Water	Suction	2.5 in.	Enclosure	TEFC
Temperature	68.00 deg F	Discharge	2 in.	Voltage	460 V
NPSHr	10.66 ft	PEI (VL)	0.41	Phase	3 Phase
Viscosity	1.00 cP	ER (VL)	59	Cycle	60
Specific Gravity	1.000 SG			Frame Size	182TC



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



NOT FOR CONSTRUCTION, unless certified and referenced on order

Units	Frame	Suct	Disch	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z
inches	182TC	2.5	2	30.00	5.20	15.00	23.75	8.50	6.50	21.75	0.25	0.63	1.00	8.47	1.00	5.38	4.00	4.50

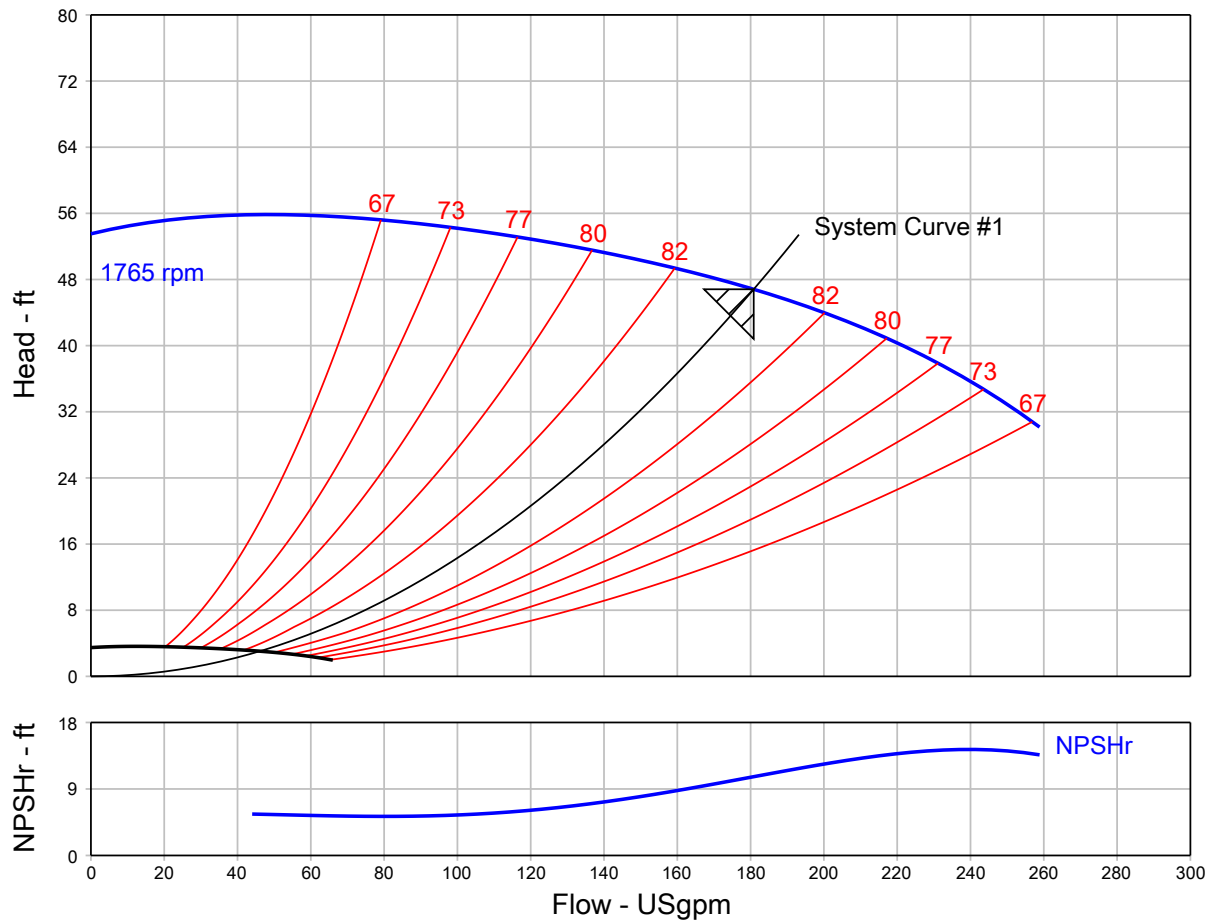
Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD

QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	LCSE 20709-4P-3HP
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MATERIALS OF CONSTRUCTION			
PART	MATERIAL	PART	MATERIAL
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		

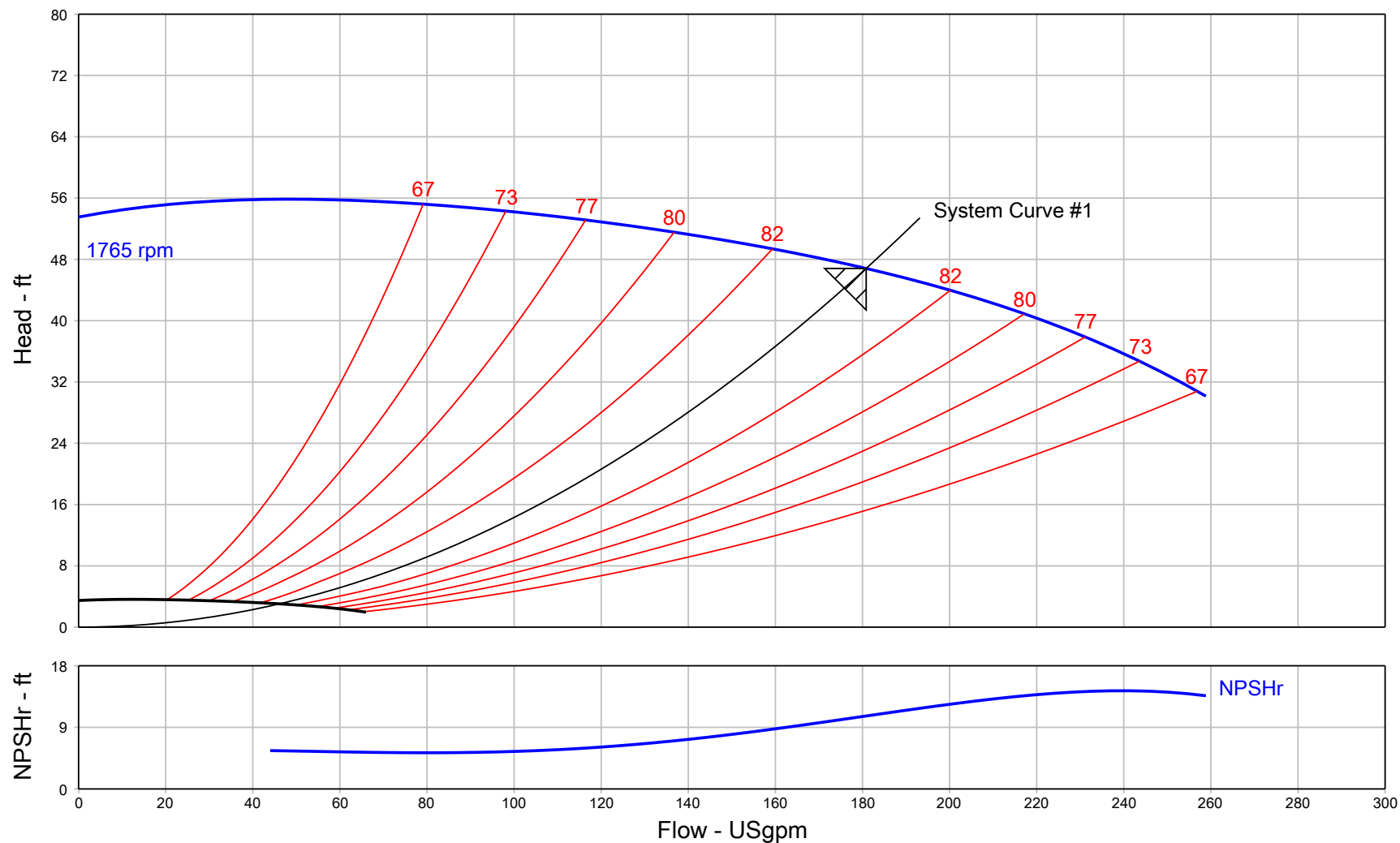
* All materials based on STANDARD configuration

Pump Performance Curve



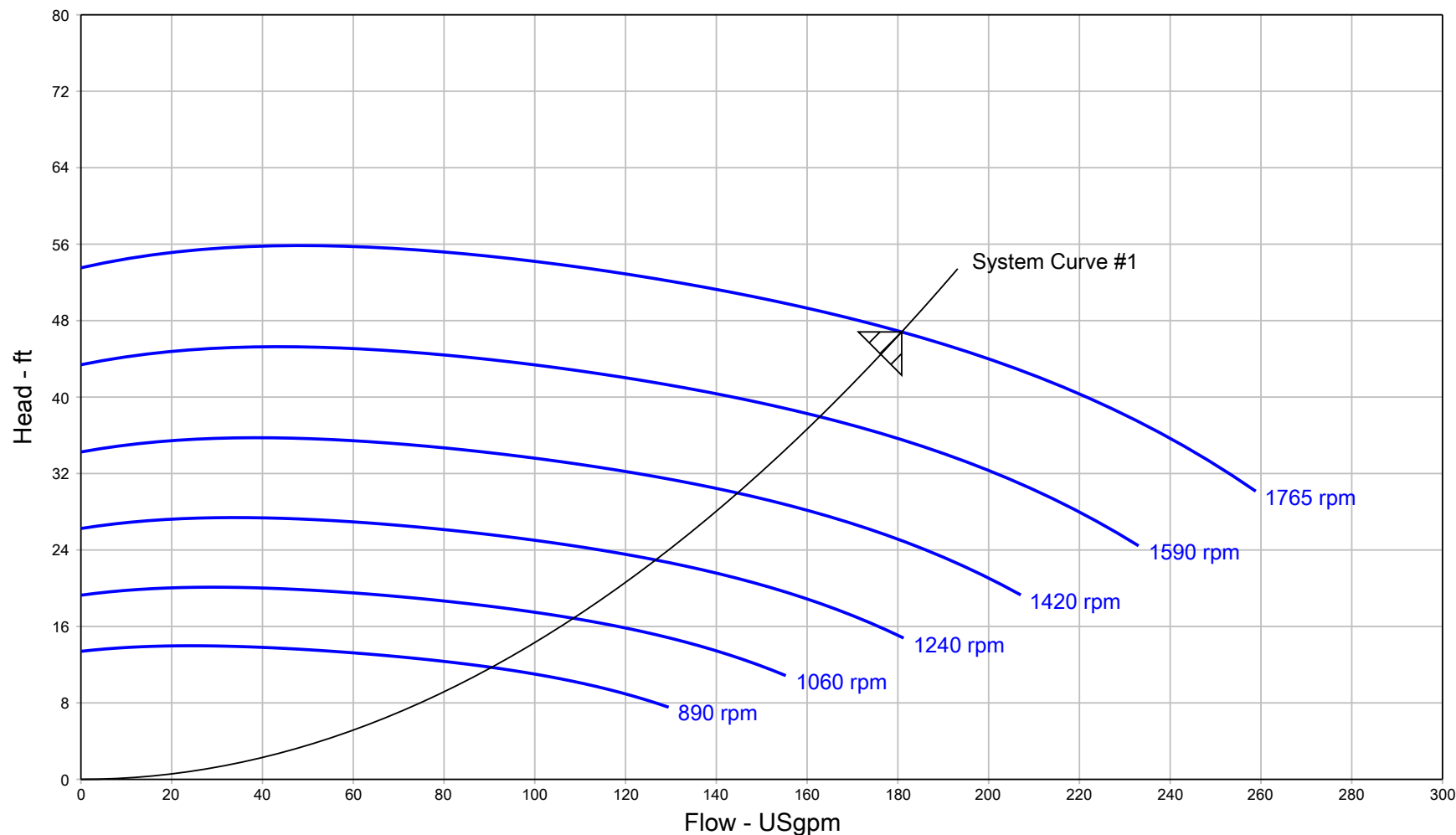
Customer	:	Model	: 20709-4P-3HP LCSE
Customer ref. / PO	:	Stages	: 1
Tag Number	: Hurley Engineering	Speed, rated	: 1765 rpm
Service	: HYDRONIC	Based on curve number	: RC9912-1-SS-7.1-4P Rev 0
Quantity	: 1	Efficiency	: 82.68 %
Quote Number / ID	: 1141840	Rated power (based on duty point)	: 2.59 hp
Date last saved	: 03/30/2020 12:54 PM	NPSH required	: 10.66 ft
Flow, rated	: 180.8 USgpm	Viscosity	: 1.00 cP
Differential head / pressure, rated	: 46.82 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	: 7.10 in
		PEI (VL)	: 0.41
		ER (VL)	: 59

Pump Performance Curve



Project name	: LCSE Project NC	Tag Number	: Hurley ENgineering	Flow, rated	: 180.8 USgpm
Consulting engineer	:	Service	: HYDRONIC	Differential head / pressure, rated	: 46.82 ft
Customer	:	Model	: 20709-4P-3HP LCSE	Rated power (based on duty point)	: 2.59 hp
Customer ref. / PO	:	Quantity	: 1	Max power (non-overloading)	: 2.99 hp
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY	Efficiency	: 82.68 %
Date last saved	: 03/30/2020 12:54 PM	Quoted By (Sales Engineer)	: Steven Leingang	Impeller diameter, rated	: 7.10 in
Based on curve number	: RC9912-1-SS-7.1-4P Rev 0	Stages	: 1	PEI (VL)	: 0.41
		Speed, rated	: 1765 rpm	ER (VL)	: 59

Multi-Speed Performance Curve



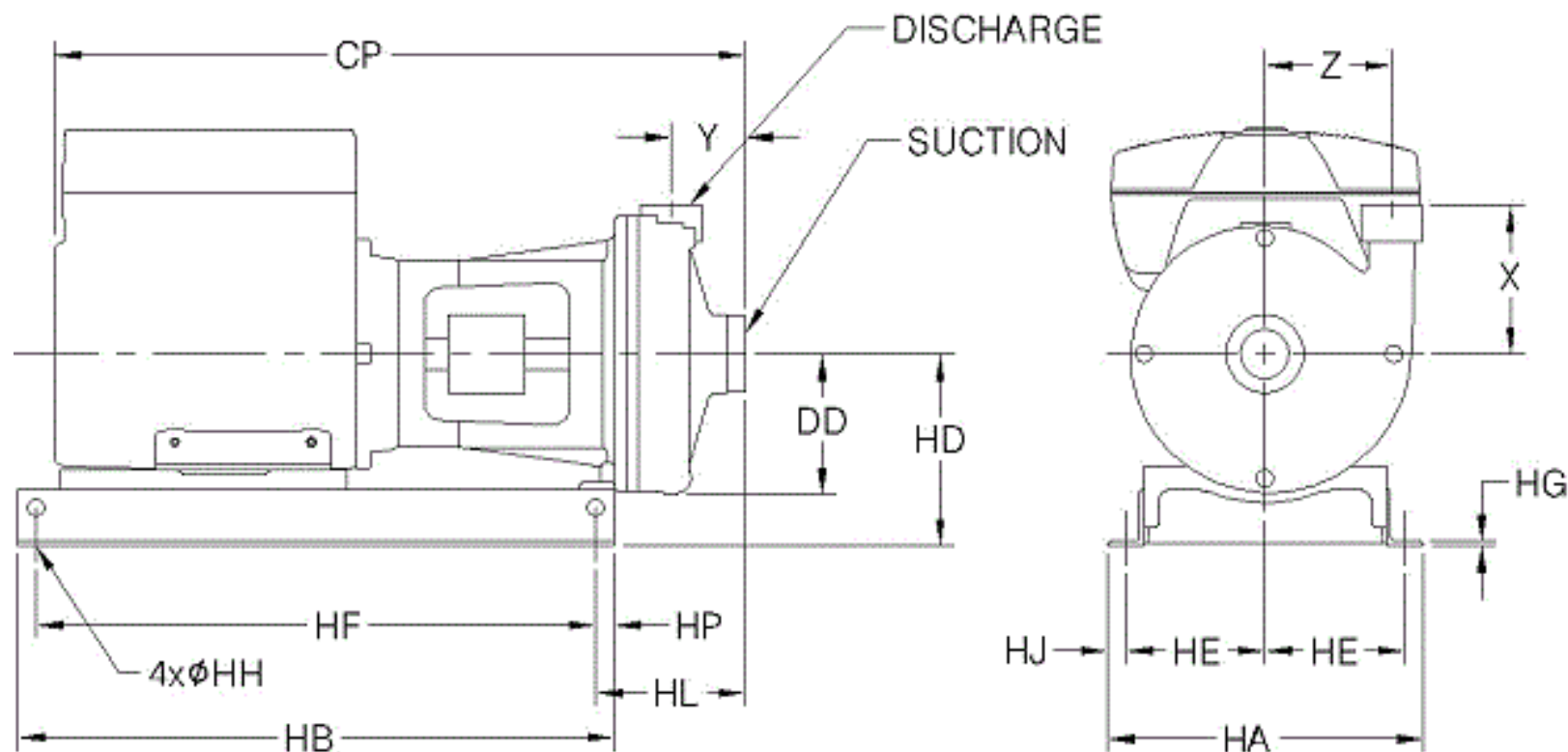
Project name	: LCSE Project NC	Tag Number	: Hurley ENgineering	Speed, rated	: 1765 rpm
Consulting engineer	:	Service	: HYDRONIC	Flow, rated	: 180.8 USgpm
Customer	:	Model	: 20709-4P-3HP LCSE	Differential head / pressure, rated	: 46.82 ft
Customer ref. / PO	:	Quantity	: 1	Fluid density, rated / max	: 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 12:54 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	: RC9912-1-SS-7.1-4P Rev 0

Construction Datasheet

Project name : LCSE Project NC				Tag Number : Hurley ENgineering	
Consulting engineer :				Service : HYDRONIC	
Customer : HURLEY ENGINEERING COMPANY				Model : 20709-4P-3HP LCSE	
Customer ref. / PO :				Quantity : 1	
Quote Number / ID : 1141840				Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY	
Date last saved : 03/30/2020 12:54 PM				Quoted By (Sales Engineer) : Steven Leingang	
Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer : Grundfos MLE, HMI 300	
Suction	2.5	NPT	-	Frame Size : 182TC	
Discharge	2	NPT	-	Power : 3.00 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 : IE5	
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) : -	
Bearing Type (Radial/Thrust) : -				Materials	
Bearing Lubrication : -				Case : Cast Iron, ASTM A48 - Class 30	
Thrust Bearing : -				Motor Bracket : Cast Iron, ASTM-A48, CL 30	
Intermediate Bearing : -				Impeller : Stainless Steel, AISI-304 (H304)	
Lower Bearing : -				Impeller Cap Screw and Washer : Stainless Steel, AISI-303	
Bearing Housing Accessories : -				Impeller Key : Stainless Steel, AISI 316	
PACO Construction code : 24-20709-13036A-25B2MS1				Case wear ring : Vesconite	
Baseplate, Coupling and Guard				Impeller wear ring : -	
Baseplate : Welded Steel Fabrication				Pump Shaft : Stainless Steel, AISI-303	
Drip Pan : No drip pan				Sleeve : -	
Coupling : Rigid, Axial Split Coupling (aluminum) RASC1				Line Shaft : -	
Guard : OSHA Approved				Column : -	
Seal & Packing Construction				Discharge Pipe : -	
Sealing Method : Single Seal, Type 21				Discharge Elbow : -	
Seal Material : Buna Carbon Ceramic SS-Spring and Hardware				Suction Elbow : -	
Packing Gland : -				Subplate : -	
Lantern Ring : -				Hardware : Steel, Grade 5	
Recirculation Lines : Nylon Tubing with Brass Fittings				O Rings : Buna N	
Weights (Approx.)				Pump Coatings : Standard Manufacturer's Paint	
Pump : 45.00 lb					
Baseplate : 29.00 lb					
Driver : 56.79 lb					
Estimated Shipping gross weight : 130.8 lb					

General Arrangement

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDRONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 20709-4P-3HP 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 12:54 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	182TC	2.5	2	30.00	5.20	15.00	23.75	8.50	6.50	21.75	0.25	0.63	1.00	8.47	1.00	5.38	4.00	4.50	130.8

Conditions of Service				Motor Data					
Flow: 180.8 USgpm	Fluid: Cold Water	HP: 3	Encl: TEFC	Phase: 3	Efficiency: IE5				
TDH: 46.82 ft	Temp.: 68.00 deg F	RPM: 1765 rpm	Hz: 60	Voltage: 460	S.F.: 1.15				