

Pump Performance Datasheet

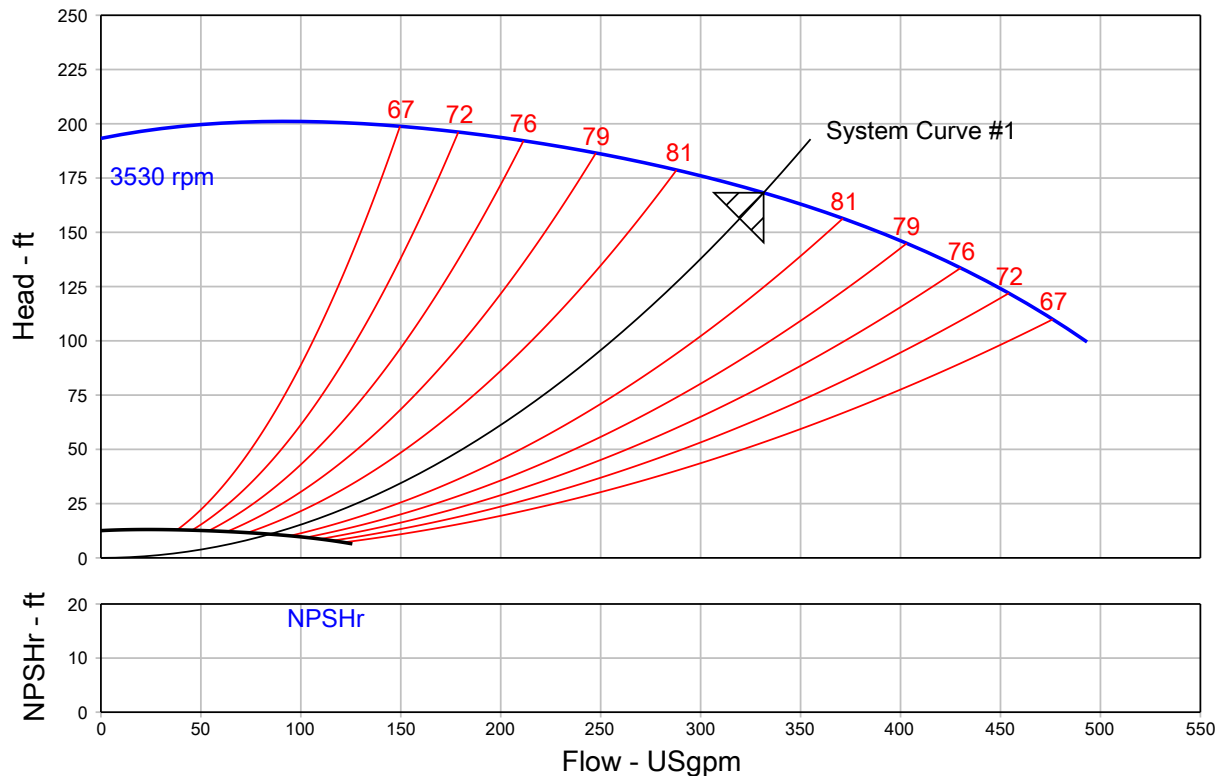
Customer :	Quote Number / ID :	1141840
Customer ref. / PO :	Model :	20709-2P-20HP LCSE
Tag Number : Hurley Engineering	Stages :	1
Service : HYDONIC	Based on curve number :	RC9912-1-SS-6.78 Rev 0
Quantity : 1	Basic model number :	-
	Date last saved :	03/29/2020 11:46 PM

Operating Conditions		Liquid	
Flow, rated	: 331.5 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 168.2 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 168.2 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	: 3530 rpm	Material selected	: Cast Iron
Speed, maximum	: 3530 rpm		
Speed, minimum	: 900 rpm		
Impeller diameter, rated	: 6.78 in		
Efficiency	: 81.77 %		

Performance		Pressure Data	
NPSH required / margin required	: 26.26 / 0.00 ft	Maximum working pressure	: 87.03 psi.g
nq (imp. eye flow) / S (imp. eye flow)	: 27 / 107 Metric units	Maximum allowable working pressure	: 175.0 psi.g
MCSF	: 94.90 USgpm	Maximum allowable suction pressure	: 175.0 psi.g
Head maximum, rated speed	: 201.1 ft	Hydrostatic test pressure	: 263.0 psi.g
Head rise to shutoff	: 14.88 %		
Flow, best eff. point	: 331.5 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		Driver & Power Data (@Max density)	
PEI (VL)	: 0.50	Motor sizing specification	: Max power (non-overloading)
ER (VL)	: 50	Margin over specification	: 0.00 %
		Service factor	: 1.00 (used)
		Power, hydraulic	: 14.08 hp
		Rated power (based on duty point)	: 17.22 hp
		Max power (non-overloading)	: 19.97 hp
		Nameplate motor rating	: 20.00 hp / 14.91 kW (Fixed)



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

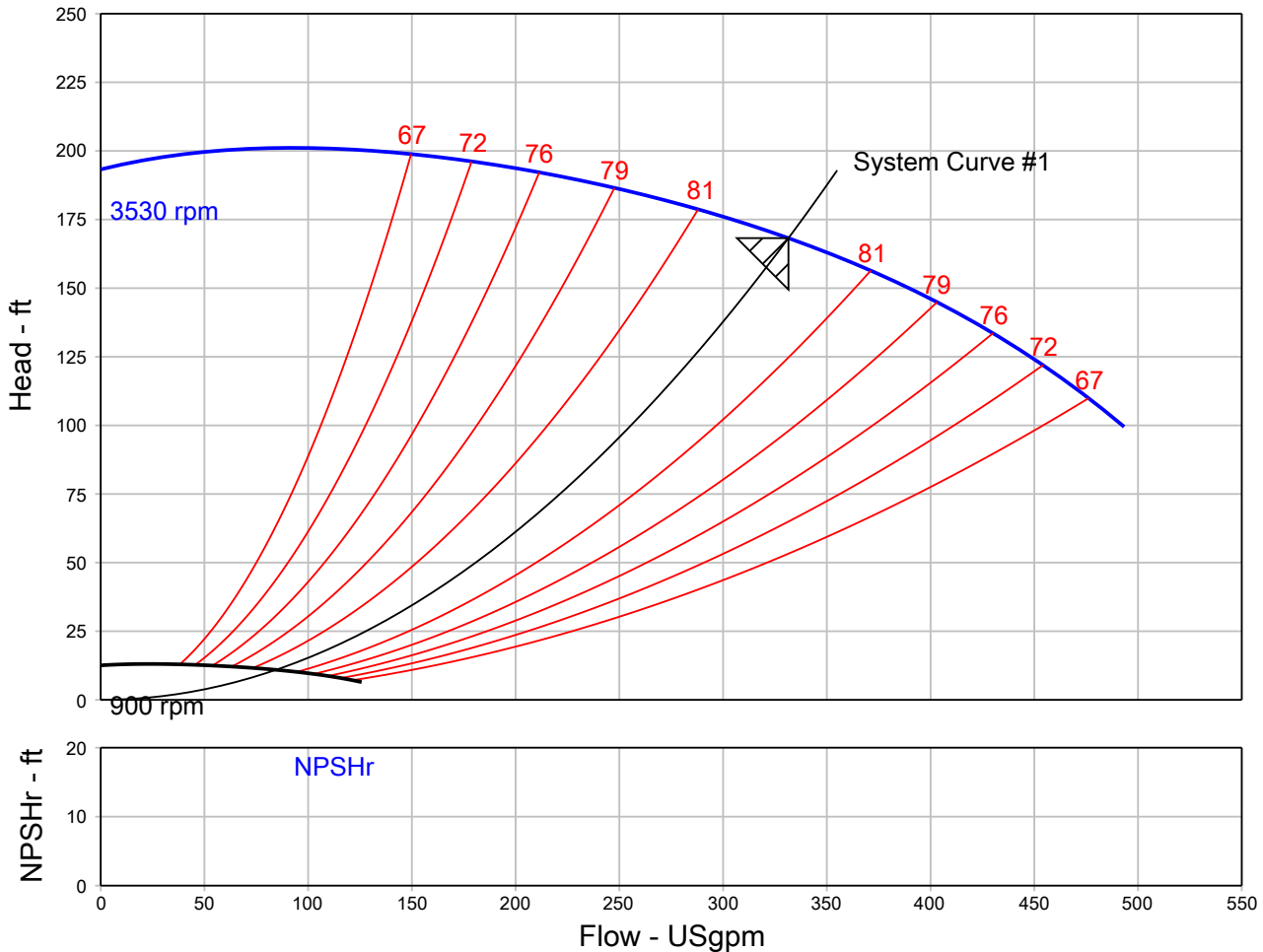
QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	QUANTITY 1
	SERVICE HYDONIC	
REPRESENTATIVE	SUBMITTED BY	DATE
ENGINEER	APPROVED BY	DATE
CONTRACTOR	ORDER #	DATE



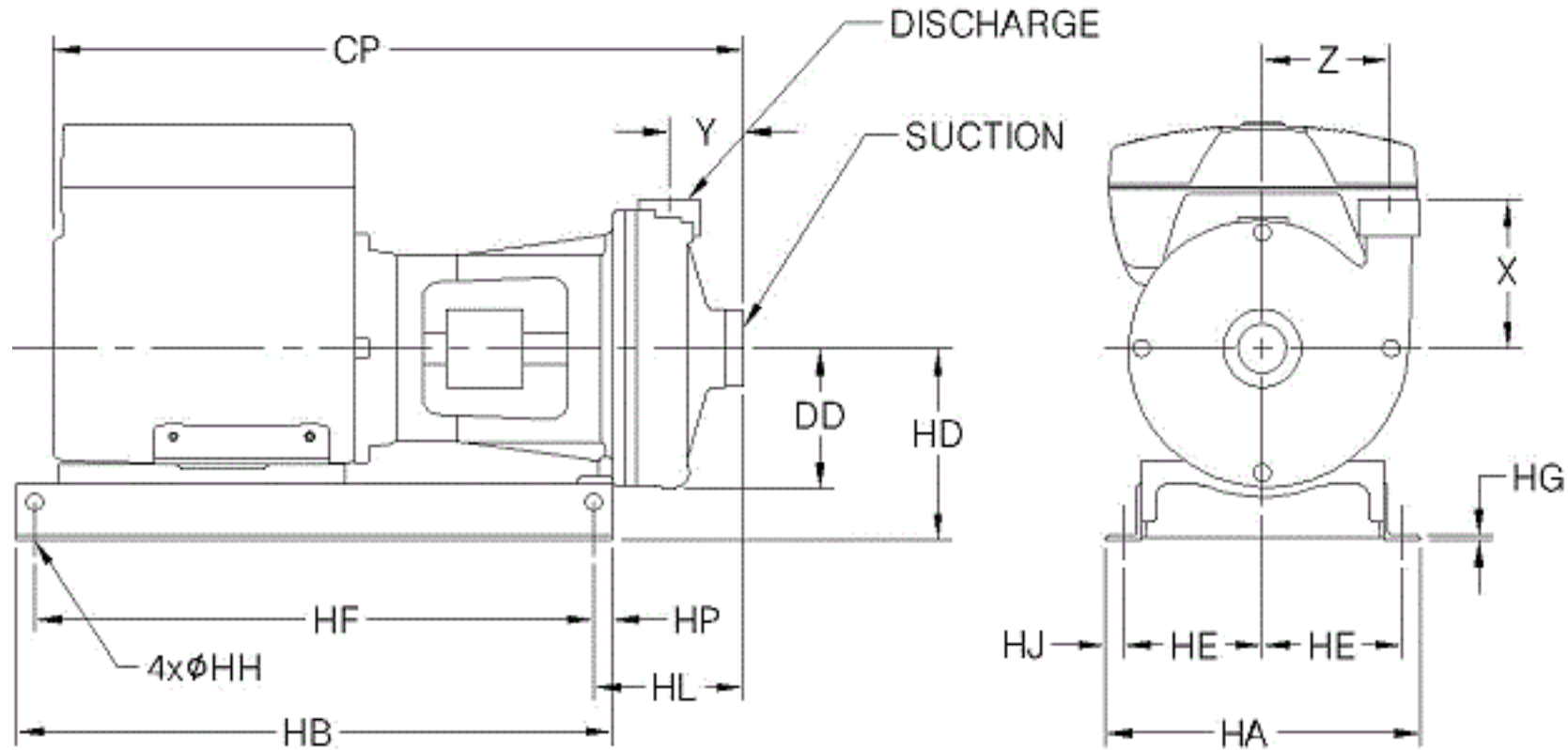
LCSE 20709-2P-20HP
3530 rpm

Part Number N/A

Conditions of Service		Pump Data		Motor Data	
Flow	331.5 USgpm	Impeller Diameter	6.78 in	Motor HP	20 HP
Head	168.2 ft	Efficiency	81.77 %	BHP	17.22
Liquid	Cold Water	Suction	2.5 in.	Enclosure	TEFC
Temperature	68.00 deg F	Discharge	2 in.	Voltage	460 V
NPSHr	26.26 ft	PEI (VL)	0.50	Phase	3 Phase
Viscosity	1.00 cP	ER (VL)	50	Cycle	60
Specific Gravity	1.000 SG			Frame Size	256TC



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	256TC	2.5	2	38.00	5.20	17.00	32.00	9.50	7.50	30.00	0.25	0.63	1.00	6.93	1.00	5.38	4.00	4.50

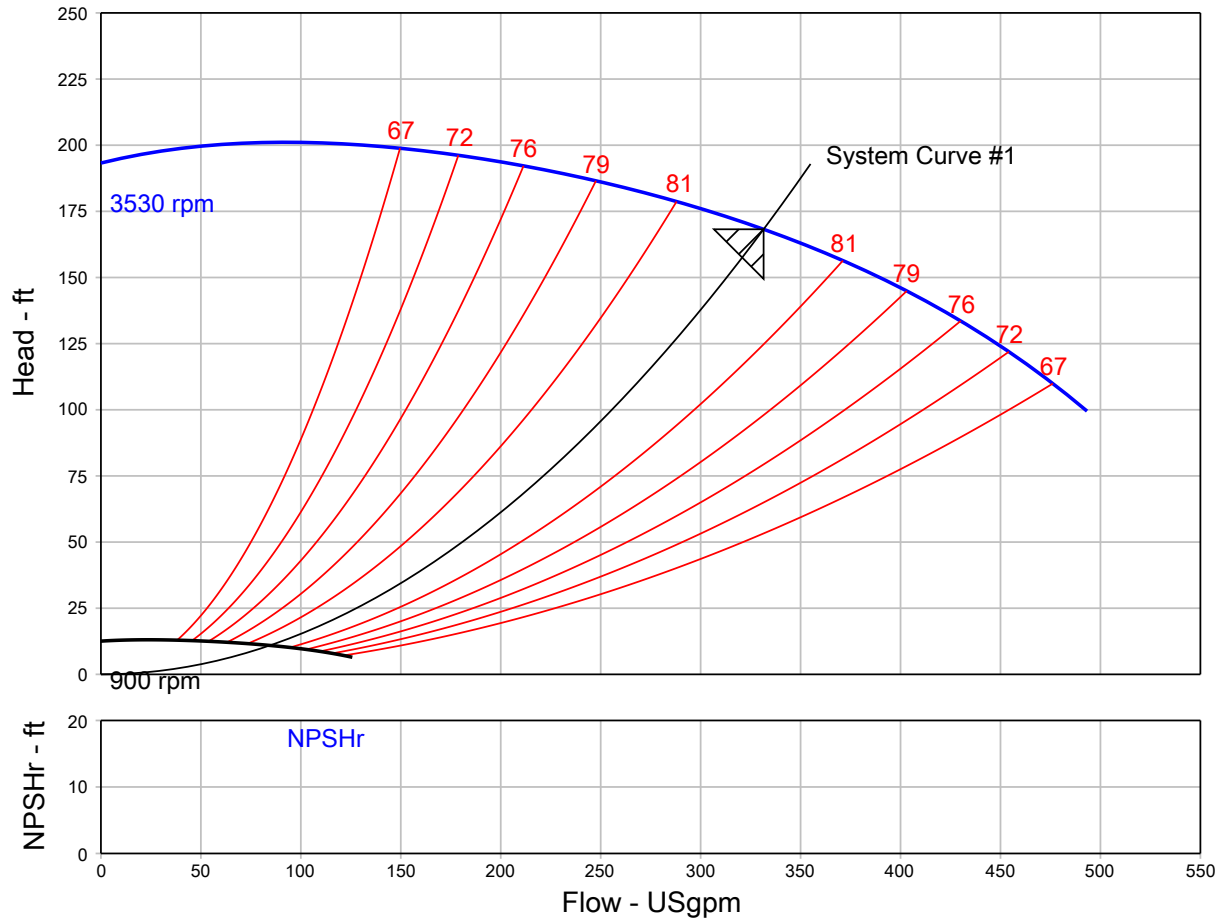
Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD

QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	LCSE 20709-2P-20HP
----------------------------------	------------------------------------	---------------------------

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		

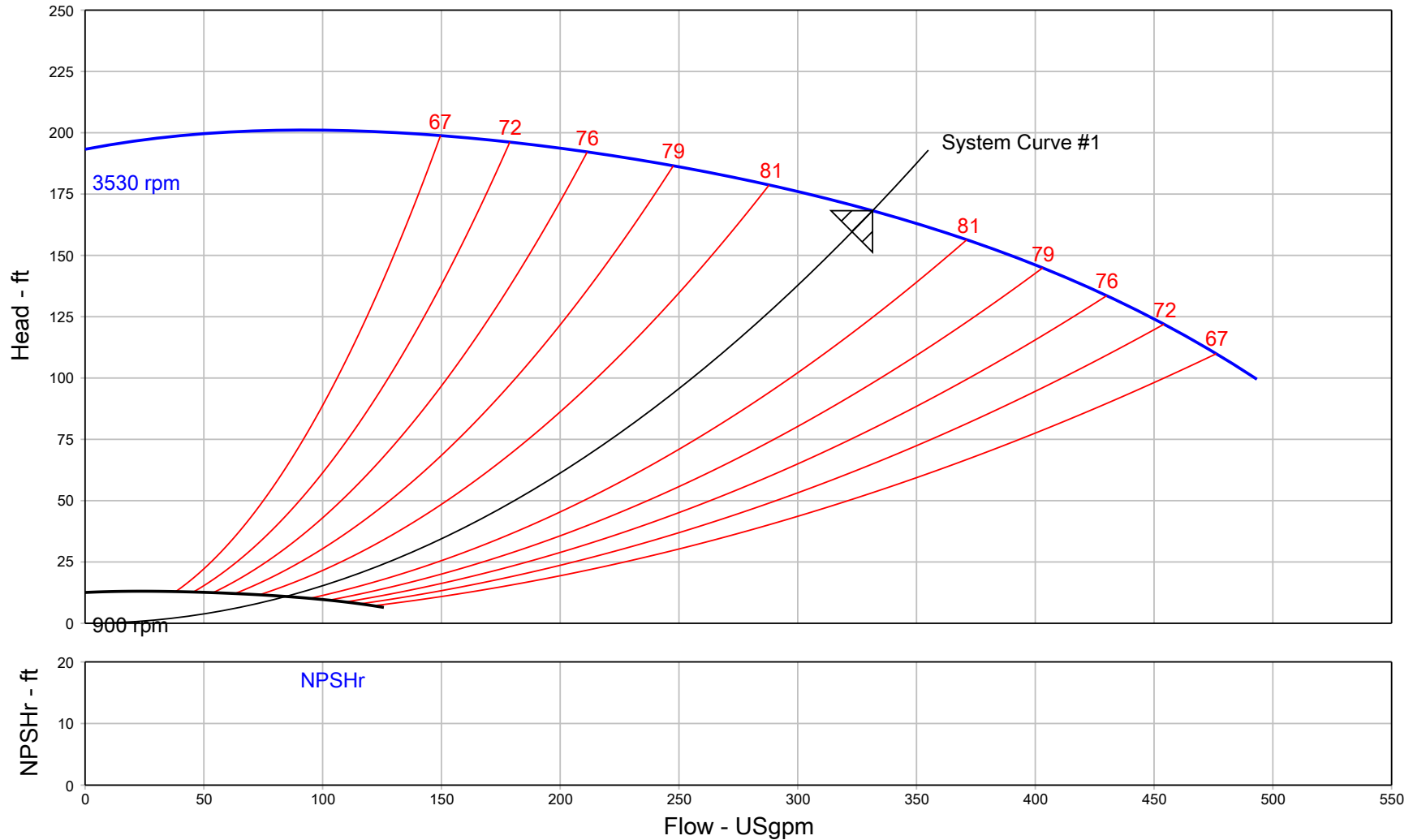
* All materials based on STANDARD configuration

Pump Performance Curve



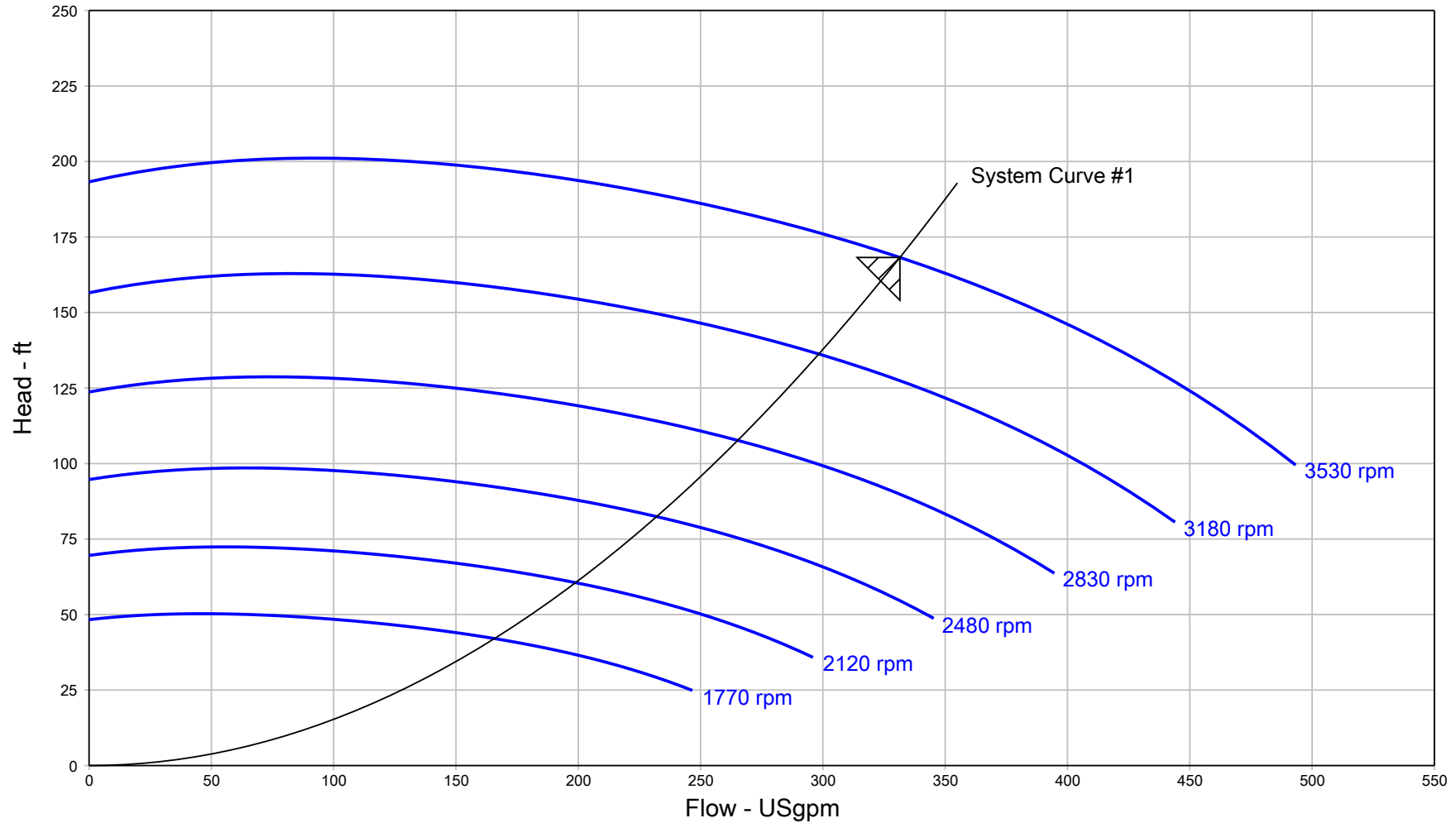
Customer :	Model :	20709-2P-20HP LCSE
Customer ref. / PO :	Stages :	1
Tag Number : Hurley Engineering	Speed, rated :	3530 rpm
Service : HYDONIC	Based on curve number :	RC9912-1-SS-6.78 Rev 0
Quantity : 1	Efficiency :	81.77 %
Quote Number / ID : 1141840	Rated power (based on duty point) :	17.22 hp
Date last saved : 03/29/2020 11:46 PM	NPSH required :	26.26 ft
Flow, rated : 331.5 USgpm	Viscosity :	1.00 cP
Differential head / pressure, rated : 168.2 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 :	6.78 in
	PEI (VL) :	0.50
	ER (VL) :	50

Pump Performance Curve



Project name : LCSE Project NC	Tag Number : Hurley Engineering	Flow, rated : 331.5 USgpm
Consulting engineer :	Service : HYDONIC	Differential head / pressure, rated : 168.2 ft
Customer :	Model : 20709-2P-20HP LCSE	Rated power (based on duty point) : 17.22 hp
Customer ref. / PO :	Quantity : 1	Max power (non-overloading) : 19.97 hp
Quote Number / ID : 1141840	Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY	Efficiency : 81.77 %
Date last saved : 03/29/2020 11:46 PM	Quoted By (Sales Engineer) : Steven Leingang	Impeller diameter, rated : 6.78 in
Based on curve number : RC9912-1-SS-6.78 Rev 0	Stages : 1	PEI (VL) : 0.50
	Speed, rated : 3530 rpm	ER (VL) : 50

Multi-Speed Performance Curve



Project name	: LCSE Project NC	Tag Number	: Hurley Engineering	Speed, rated	: 3530 rpm
Consulting engineer	:	Service	: HYDONIC	Flow, rated	: 331.5 USgpm
Customer	:	Model	: 20709-2P-20HP LCSE	Differential head / pressure, rated	: 168.2 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	: 03/29/2020 11:46 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-6.78 Rev 0

Construction Datasheet

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 20709-2P-20HP LCSE
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY
Date last saved	: 03/29/2020 11:46 PM	Quoted By (Sales Engineer)	: Steven Leingang

Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Grundfos MLE
Suction	2.5	NPT	-	Frame Size	: 256TC
Discharge	2	NPT	-	Power	: 20.00 hp

Orientation / Configuration	: Horizontal	RPM	: 3600 rpm
Rotation	: Clockwise	Enclosure	: TEFC
Wear Ring Configuration	: Single - Case	Operating Power Supply	: 460/3/60
Discharge Elbow Size	: -	Efficiency	: Premium
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	
Bearing Type (Radial/Thrust)	: -	Case	: Cast Iron, ASTM A48 - Class 30
Bearing Lubrication	: -	Motor Bracket	: Cast Iron, ASTM-A48, CL 30
Thrust Bearing	: -	Impeller	: Stainless Steel, AISI-304 (H304)
Intermediate Bearing	: -	Impeller Cap Screw and Washer	: Stainless Steel, AISI-303
Lower Bearing	: -	Impeller Key	: Stainless Steel, AISI 316
Bearing Housing Accessories	: -	Case wear ring	: Vesconite
PACO Construction code	: 24-20709-14036A-2511MS1	Impeller wear ring	: -

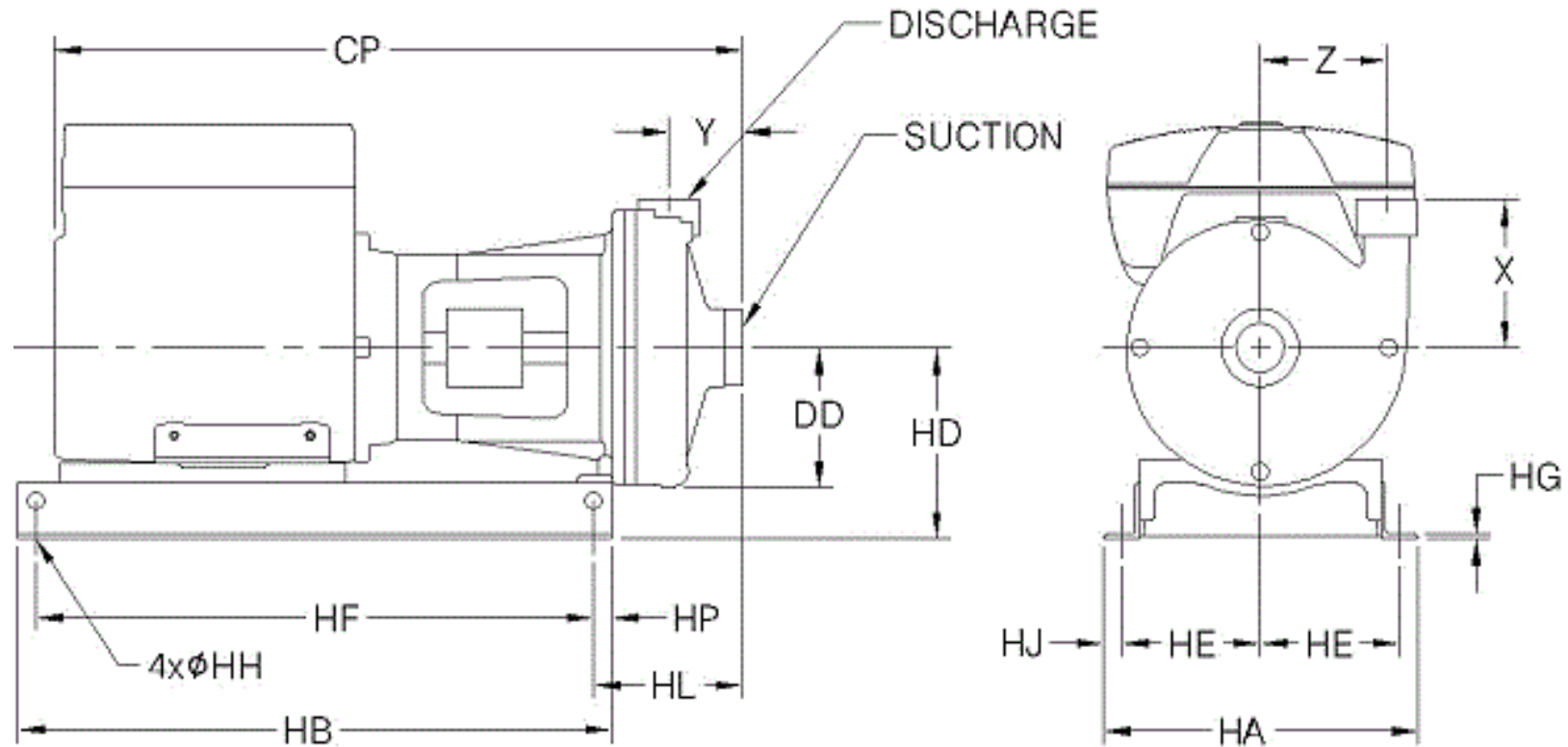
Baseplate, Coupling and Guard			
Baseplate	: Welded Steel Fabrication	Pump Shaft	: Stainless Steel, AISI-303
Drip Pan	: No drip pan	Sleeve	: -
Coupling	: Rigid, Axial Split Coupling (aluminum) RASC3	Line Shaft	: -
Guard	: OSHA Approved	Column	: -

Seal & Packing Construction			
Sealing Method	: Single Seal, Type 21	Discharge Pipe	: -
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware	Discharge Elbow	: -
Packing Gland	: -	Suction Elbow	: -
Lantern Ring	: -	Subplate	: -
Recirculation Lines	: Nylon Tubing with Brass Fittings	Hardware	: Steel, Grade 5
		O Rings	: Buna N
		Pump Coatings	: Standard Manufacturer's Paint

Weights (Approx.)			
Pump	: 45.00 lb		
Baseplate	: 29.00 lb		
Driver	: 307.0 lb		
Estimated Shipping gross weight	: 381.0 lb		

General Arrangement

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 20709-2P-20HP LCSE
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY
Date last saved	: 03/29/2020 11:46 PM	Quoted By (Sales Engineer)	: Steven Leingang



NOT FOR CONSTRUCTION, Unless certified and referenced on order

Units	Frame	Suct(in)	Disch(in)	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z	Weight ea
inches	256TC	2.5	2	38.00	5.20	17.00	32.00	9.50	7.50	30.00	0.25	0.63	1.00	6.93	1.00	5.38	4.00	4.50	381.0

Conditions of Service				Motor Data			
Flow: 331.5 USgpm	Fluid: Cold Water	HP: 20	Encl: TEFC	Phase: 3	Efficiency: Premium		
TDH: 168.2 ft	Temp.: 68.00 deg F	RPM: 3530 rpm	Hz: 60	Voltage: 460	S.F.: 1.15		