



Hydraulic Datasheet

Customer	: Ventech XTL Oklahoma City, LLC	Pump / Stages	: 2K6x4-13ARV M3 ST	/ 1
Customer reference	: 4777-010	Based on curve no.	: MIII8123V	
Item number	: P-3331A/B/C	Flowserve reference	: 273752911	
Service	: Cooling Tower	Date	: December 12, 2014	
Operating Conditions		Materials / Specification		
Capacity	: 1170.0 USgpm	Material column code	: DCI	
Water capacity (CQ=0.99)	: 1180.9 USgpm	Pump specification	: ANSI B73.1	
Normal capacity	: -	Other Requirements		
Total Developed Head	: 237.00 ft	Hydraulic selection : No specification		
Water head (CH=0.99)	: 238.95 ft	Construction : No specification		
NPSH available (NPSHa)	: 36.0 ft	Test tolerance : Hydraulic Institute Level B		
NPSHa less NPSH margin	: -	Driver Sizing : Max Power (SO to EOC) w/o SF		
Maximum suction pressure	: 8.6 psig	Seal configuration : Single Seal		
Liquid				
Liquid type	: Other			
Temperature / Spec. Gravity	: 100 F / 1.000			
Solid Size - Actual / Limit	: - / -			
Viscosity / Vapor pressure	: 62.17 cP / 0.70 psia			
Performance				
Hydraulic power	: 70.0 hp	Impeller diameter		
Pump speed	: 3500 rpm	Rated	: 9.50 in	
Efficiency (CE=0.91)	: 63.4 %	Maximum	: 10.25 in	
		Minimum	: 9.00 in	
NPSH required (NPSH3)	: 20.0 ft	Suction specific speed	: 14380 US units	
Rated power	: 110 hp	Minimum continuous flow	: 831.0 USgpm	
Maximum power	: 116 hp	Maximum head @ rated dia	: 285.83 ft	
Driver power	: 125 hp / 93.2 kW	Flow at BEP	: 1368.3 USgpm	
Casing working pressure	: 132.3 psig	Flow as % of BEP	: 85.5 %	
(based on shut off and Rated specific gravity @ Cut dia)		Efficiency at normal flow	: -	
Maximum allowable	: 250.0 psig	Impeller dia ratio (rated/max)	: 92.7 %	
Hydrostatic test pressure	: 375.0 psig	Head rise to shut off	: 20.6 %	
Est. rated seal chamb. press.	: -	Total head ratio (rated/max)	: 72.2 %	
CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY. MCSF PROVIDES MECHANICAL PROTECTION ONLY. MINIMUM THERMAL FLOW MUST BE CALCULATED FOR THE SPECIFIC FLUID AND OPERATING CONDITIONS.				
Power - hp Head - ft Capacity - USgpm Efficiency NPSH3 - ft 10.25 in Maximum 9.50 in Rated 9.00 in Minimum MCSF Efficiency NPSH3 Viscous curve plotted Viscosity 62.17 cP Viscous corrections: CQ: 0.99 CH: 0.99 CE: 0.91				



Construction Datasheet

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Service	: Cooling Tower	Date	: December 12, 2014

Construction					Driver Information	
Nozzles	Size	Rating	Face	Pos'n	Manufacturer	: By Others
Suction	6.00	150#	RF	End	Power	: 125 hp / 93.2 kW
Discharge	4.00	150#	RF	Top	Service factor (req'st / act)	: 1.15 / -
Casing mounting : Foot					Speed	: 3600
Casing split : Radial					Orientation / Mounting	: Horizontal / Foot
Impeller type : Reverse Vane					Driver Type	: -
Bearing type (radial) : Sgl Row					Frame-size / material	: 444TS / CAST IRON
Bearing number (radial) : 6310-C3					Enclosure	: -
Bearing type (thrust) : DbI/Ang Co					Hazardous area class	: -
Bearing number (thrust) : 7310-BECBY					Explosion 'T' rating	: -
Bearing lubrication : Flood					Volts / Phase / Hz	: 460 V / 3 / 60 Hz
Rotation (view from driver) : CW per Hyd. Institute					Amps-full load/locked rotor	: - / -
Materials					Motor starting	: Direct on line (DOL)
Casing : Duct.Cast Iron (DCI)					Insulation	: F
Impeller : Duct.Cast Iron (DCI)					Temperature rise	: -
Seal chamber : FML Box / (316SS)					Bearings	: Ball
Shaft : 316 SS					Lubrication	: Grease
Sleeve : No Sleeve					Motor mounted by	: Flowserve
Baseplate, Coupling and Guard					Sound Pressure (dBA @ 1.0 m)	
Baseplate type : Type A Foundation					Driver, expected : -	
Baseplate material : Steel					Pump & driver, estimated : -	
Baseplate size : 280 Baseplate					Seal Information	
Coupling manufacturer : T.B. Woods					Arrangement : Sgl Int O-Ring	
Coupling size : Sureflex SC8/10H					Size : 1.875	
Coupling / Shaft guard : Aluminum (Non-Spark)					Manufacturer / Type : Flowserve / ISC2 Pusher	
Shaft / seal guard : None Supplied					Material code (Man'f/API) : C2CPX----ECXV- / BSTFN	
Weights (Approx.)					Internal neck bushing : Not Available	
Bareshaft pump(net) : 324.0 lb					Gland	
Baseplate(net) : 481.0 lb					Gland material : 316SS	
Driver(net) : -					Flush : .375" NPT	
Shipping gross weight/vol. : 925.7 lb / 67210 cu.in					Vent : .375" NPT	
Testing					Drain : .375" NPT	
Hydrostatic test : Non witnessed					Auxiliary seal device : Carbon Bushing	
Performance test : Non witnessed					Piping	
NPSH test : None					Seal flush plan : Plan 11	
Paint and Package					Seal flush construction : Tubing	
Pump paint : Std.Polyurethane					Seal flush material : Stainless steel	
Base grout surface prep : Standard					Aux seal flush plan : None	
Shipment type : Domestic					Aux seal flush construction : -	
					Aux seal flush material : -	
Notes						
-						
Mark 3A w/Watchdog oiler						
Casing w/1/2" Plugged Drain (NPT)						
-						
IPS Beacon Condition Monitor - See UIM						
-						

CODE: B02 Expected Pump Performance Curve (Flowserve) REV 1**PO: 4777-010-14-03287****TAG: P-3331 A/B/C**

Pump size & type : 2K6x4-13ARV M3 ST
Based on curve no. : MIII8123V
Number of stages : 1

Customer	: Ventech XTL Oklahoma City	Capacity	: 1170.0 USgpm
Item number	: P-3331A/B/C	Head	: 237.00 ft
Service	: Cooling Tower	Specific gravity	: 1.000
Flowserve reference	: 273752911	Pump speed	: 3500 rpm
Date	: December 12, 2014	Test tolerance	: Hydraulic Institute Level B

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