



Submitted Technical Specification for Approval

Item No. : 1	Project:
Quantity : 1 set	Application : river Water
Description	Consultant pump specification
<u>General Specification</u>	
Mark Name	OLYMPIA
Pump model	O-SAP 600-100
Pump type	Submersible propeller pump (direct drive)
Liquid Temperature	Not more than 60°C
Installation type	Installation with pipe column
<u>Pump Data</u>	
Impeller type	Axial Flow with statically or dynamically balanced
Performance Curve	see the drawings
Flow rate (Capacity)	1000L/S (3600m3/hr)
Total dynamic head	5 m
Pump efficiency	81.5%
Overall efficiency	72.5%
Solid passage dia.	Dia. 110mm
Outer diameter of impeller	550 mm
Shaft power	60.2 kW
Speed	735 rpm
Total discharge conn.	D/N 700mm
Column size	D/N 1000mm
Power cable & Control cable	- 1x20 m Submersible power cable - 1x20 m Submersible auxiliary control cable
<u>Materials</u>	
Motor casing/housing	Cast Iron with Zinc Anode
Pump casing	Cast Iron with Zinc Anode
Impeller Vane/blades	Duplex Stainless Steel 2205
Impeller Hub	Duplex Stainless Steel 2205
Wearing ring	N/A
Shaft	SS 420
Studs, Nuts, Screws	Stainless steel
O-ring	NBR
Double Mechanical seal	Tungsten carbide & Silicon carbide
Heavy duty bearing	Roller bearing with grease lubricate
<u>Surface treatment</u>	Impeller is painted by epoxy resin Paintmaterial: bituminous epoxy resin All cast parts are primed with a re-rust paint The finishing coat is two pack paint The color is black paint
<u>Motor data</u>	
Drive unit / Motor model	75KW / 8P
Design Motor	Squirrel-cage, induction motor
Protection type	IP68
Insulation class	Class H
Main voltage	380v, 3 pH, 50 Hz.
Rated power of motor	75KW
Motor speed	735rpm
Motor efficiency	89.0%
Service factor	1.2
Starting method	VFD
Rated current	164A
<u>Monitoring system, Std.</u>	
Monitoring system, Std.	- Overheat sensor PT100 (for stator winding) - Overheat sensor PT100 (for upper & lower bearings) - Upper float switch (for motor junction box/chamber) - Lower float switch (for motor chamber) - Moisture sensor HM1500 (detecting the humidity in motor junction box/ chamber) - Vibration Sensor in top bearing housing - WLC type float switch for LWL and HWL (GY-A1)

**SUBMERSIBLE MOTOR PUMPS****MOTOR DATA****ELECTRICAL DATA**

Hz	Poles	Phaes	Output(kW)	Voltage(V)	Remarks
50	8	3	75	380	

Name Plate Rating	Output	kW	75
		Hp	100
	Phase		3
	Poles		8
	Voltage (V)		380
	Amperes (A)		164
	Speed (RPM)		735
	Rating		Continuous
	Rotor Type		Squirrel Cage
Insulation Class		H	
Capacitor	Start		-
Size - μ F	Run		-
No Load Amperes			57
100% Load	Current (Amperes)		164
	Efficiency (%)		89.0
	Power Factor (%)		78.0
	Speed (RPM)		735
Start Current (A)			574
Full Load Torque (Kg-m)			99.39
Locked Rotor Torque (%)			120
Number of Starts Per Hour			6
Design Standard			IEC
Voltage Tolerance (%)			$\pm 10\%$
Frequency Tolerance (%)			$\pm 5\%$

ITEM	LOAD		
	50%	75%	100%
POWER INPUT[Kw]	42.1	63.2	84.3
POWER OUTPUT[kW]	37.5	56.25	75
CURRENT[A]	112.8	123.1	164.1
POWER FACTOR[%]	57.3	70.3	78
EFFICIENCY[%]	88.2	88.7	89
SPEED[RPM]	743	739	735



SUBMERSIBLE MOTOR PUMPS

CIRCLE DIAGRAM

MOTOR SPECIFICATION

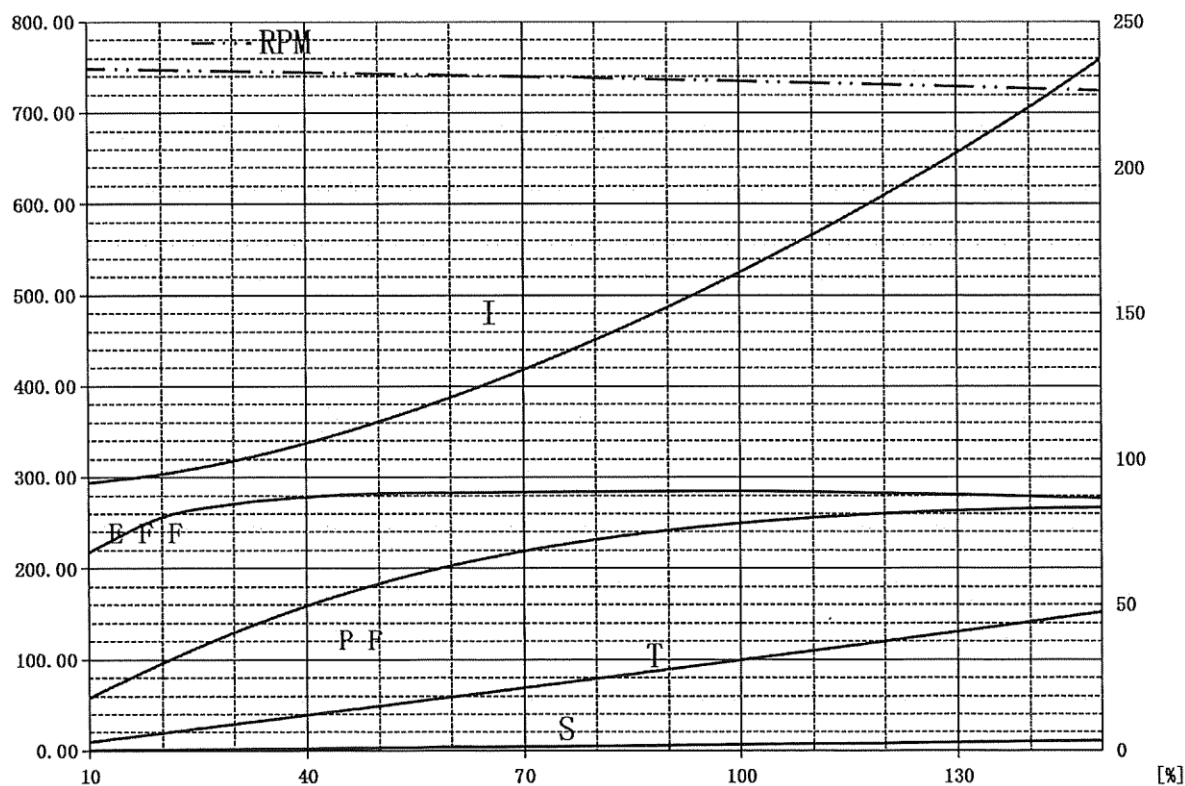
Motor Type	:	Totally Enclosed, Submerged Type (IP 68)				
Motor Output	:	75	[kW]	Voltage	:	380 [V]
Revolution	:	735	[rpm]	No. of Poles	:	8 [P]
Frequency	:	50	[Hz]	Rate Current	:	164 [A]
Efficiency	:	89.0	[%]	Power Factor	:	78.0 [%]
Rotor Type	:	Squirrel Cage			Ins. of Class:	H
Cooling Method	:	Water			Liquid Temp. :	AMB
Starting Method:	:	VFD			Rating :	CONT.

MOTOR CIRCLE DIAGRAM

(L- CIRCLE, 75 [kW])

Torque[Kg·m]/Current[A]/Revolution[RPM]

EFF[%]/PF[%]/Slip[%] POWER[KW]





SUBMERSIBLE MOTOR PUMPS

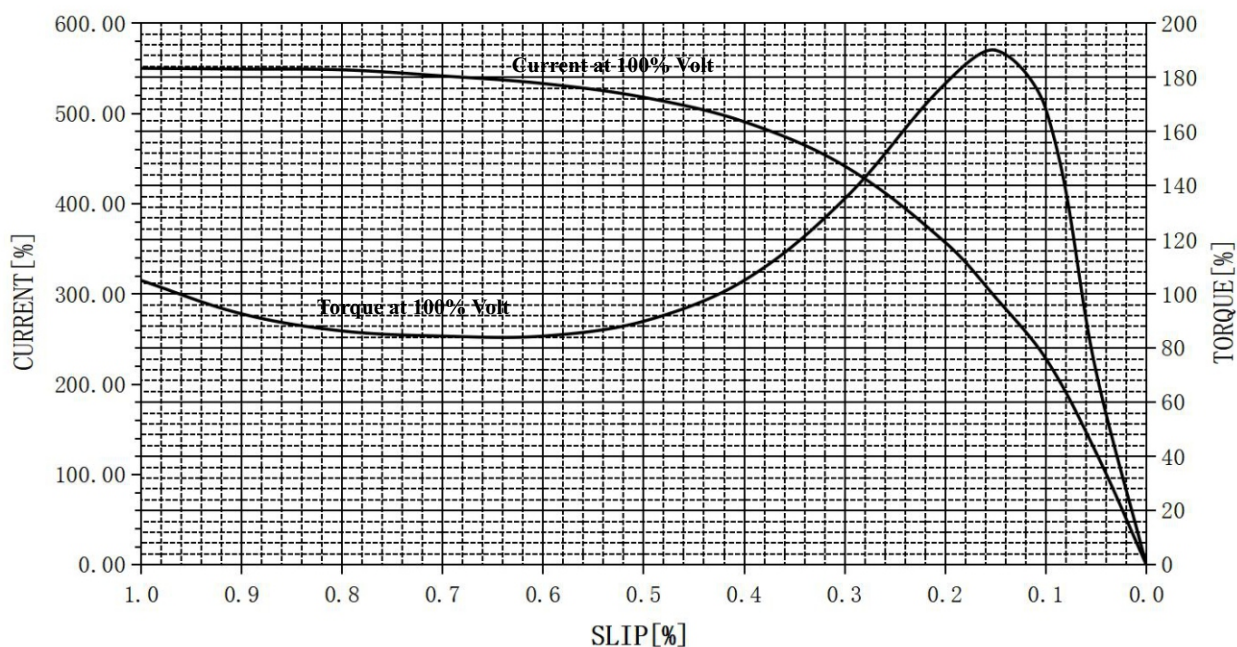
SPEED & TORQUE & CURRENT CURVE

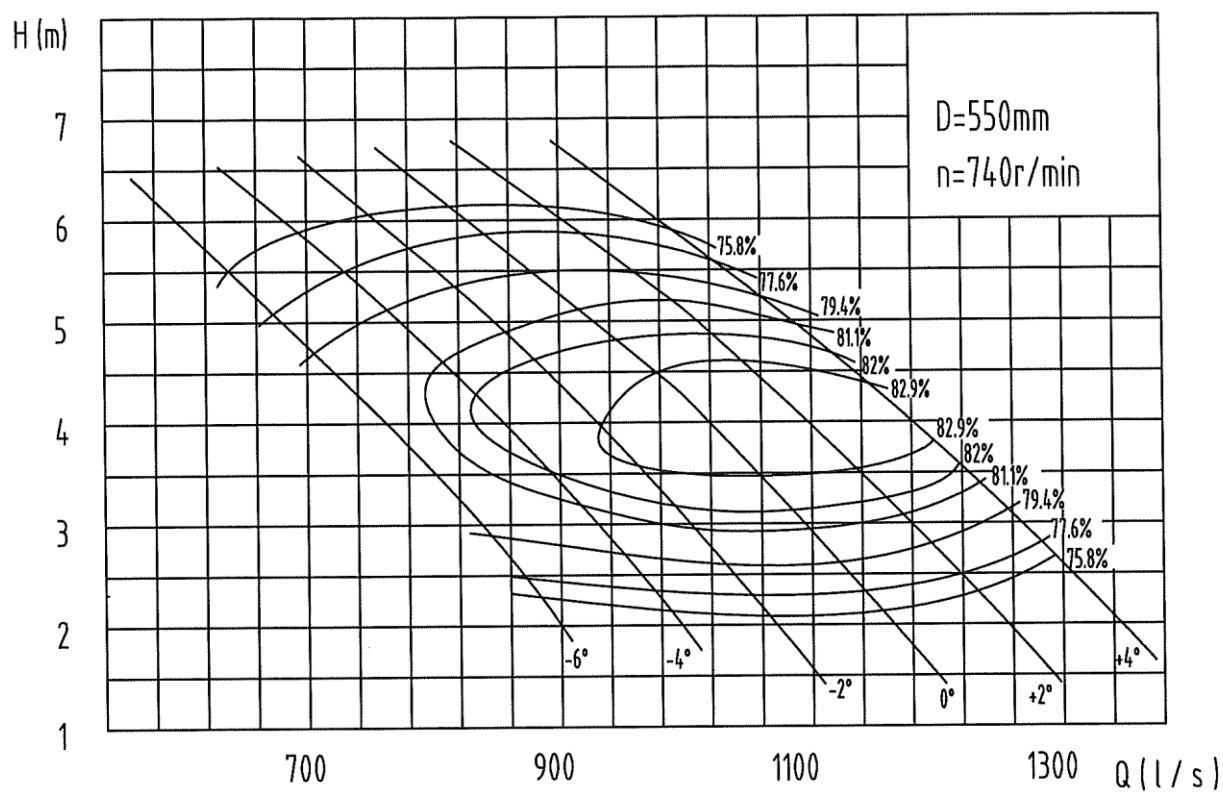
MOTOR SPECIFICATION

Motor Type	:	Totally Enclosed, Submerged Type (IP 68)					
Motor Output	:	75	[kW]	Voltage	:	380	[V]
Revolution	:	735	[rpm]	No. of Poles	:	8	[P]
Frequency	:	50	[Hz]	Rate Current	:	164	[A]
Torque	:	99.4	[%]	Starting Current	:	574	[A]
Starting Torque:		120	[%]	Ins. of Class	:	H	
Starting Method:		VFD		Liquid Temp.	:	AMB	
				Rating	:	CONT.	

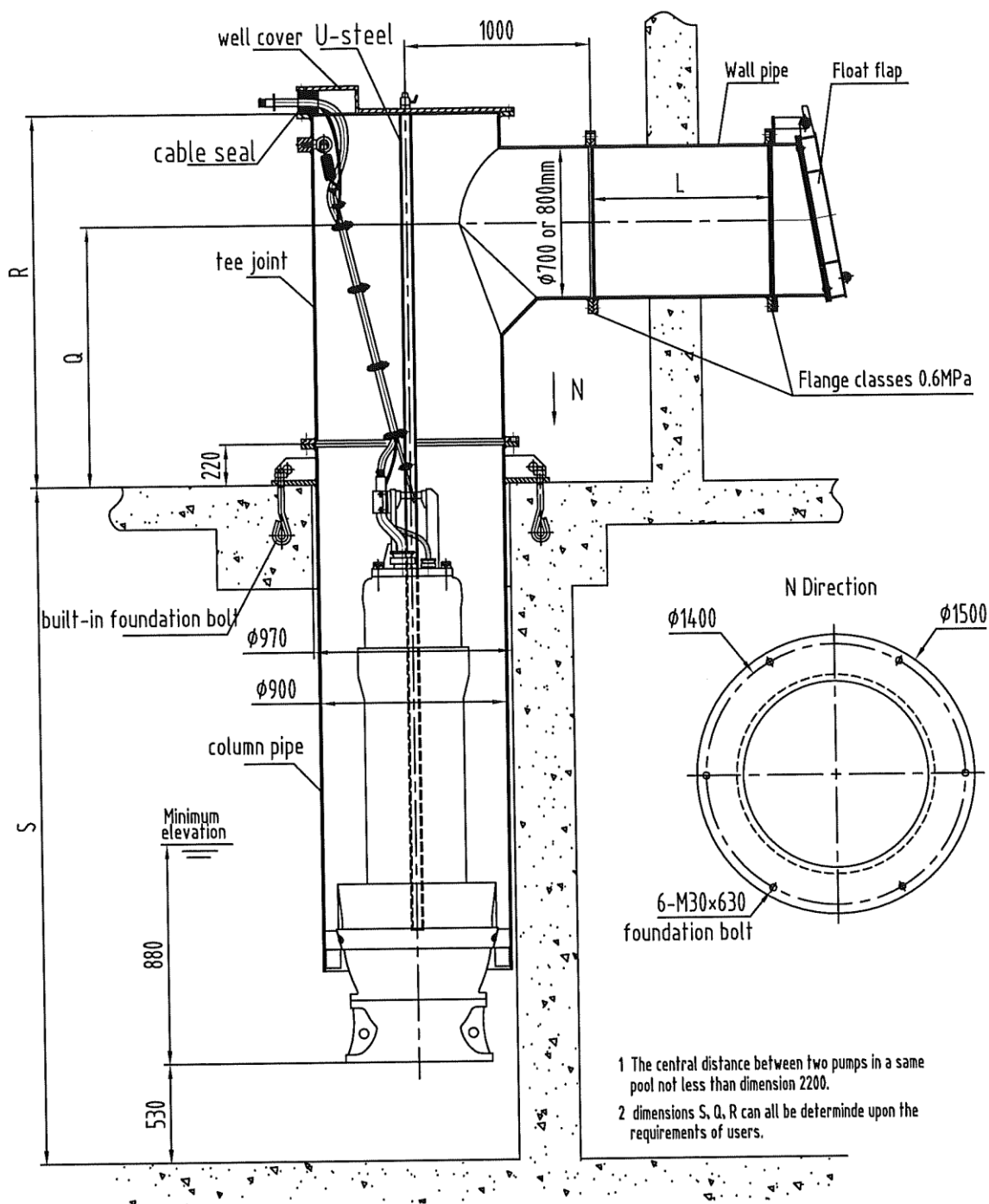
SPEED & TORQUE & CURRENT CURVE

SPEED & TORQUE, CURRENT CURVE





Angle	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Outer diameter of impeller (mm)
	(m ³ /h)	(l/s)			Shaft power	Motor power		
+2°	3453.6	959.3	5.5	740	65.2	75	79.4	550
	3962.4	1100.7	3.88		50.2		83.4	
	4277.2	1188.1	2.82		41.2		79.4	



pump model	O-SAP 600-100		
Angle:	(+2)	The axial water thrust:	16100N
speed:	735r/min	pump weight:	2100Kg