		UNITS	REQUESTED	PROVIDED BY VENDOR
1	GENERAL DATA			
	Number of pumps		2x110%	
	KKS numbers		40GHC61 AP001 / 40GHC62 AP001	
	Manufacturer / Model			
	Installation		(Note 1)	
			Outdoor	
	Design and manufacturing codes		ISO 9905, 5199, 9908 or equivalent (Note 1)	
	Service		Demineralized water distribution	
1.7	Pumped Fluid		Demineralized water	
1.8	Temperature min / max	°C	1 / 43	
	Density	kg/m3	1000 (at 5°C)	
	PUMPS RATED POINT	rigi ilia		
		m3/h	12.852	
	Flow per pump at discharge			
	Required Total Dinamic Head	m	35,96	
	NPSH available / required	m	7,209 / 4,758 maximum (Note 5)	
	Suction pressure	bar a	0,762 to 1,836 (Note 6)	
2.5	TDH at shutoff	m	135% of rated TDH (Note 2)	
2.6	Minimum flow	m3/h	30% of rated flow (Note 7)	
27	Design pressure / hydraulic test pressure	bar g	(Note 1)	
2.0	Efficiency at design point	%	(Note 1)	
2.0	Chickency at design point			
	Pump power	kW	(Note 1)	
	Pump Speed	rpm	(Note 1)	
	TECHNICAL FEATURES	ra la la la		
3.1	Pump type		Horizontal centrifugal	
	Pump model		(Note 1)	
	Number of stages		1	
			1	
	Impeller diameter		(N=4-4)	
.4.1		mm	(Note 1)	
.4.2		mm	At least 4 mm bigger than rated impeller	
.4.3	Min	mm	(Note 1)	
	Mechanical seal		Included	
and the second	Mechanical seal fluid		Pumped fluid	
		rp.m	> 120% of nominal speed	
	Motor-pump assembly first critical speed	rpm		
	Max. reversal speed allowable for the motor-pump assembly	rpm	(Note 1)	
3.9	Motor-pump coupling		Flexible adjustable with spacer (Note 9)	
1.10	Radial bearing type		(Note 1)	
	Axial bearing type		(Note 1)	
	Lubrication		(Note 1)	
			(Note 1)	
	Lubrication piping		(Note 1)	
	DRIVER		Control of the Contro	
	Motor Type		TEFC	
	Motor Manufacturer		(Note 1)	
	Motor Voltage/Phase/Frequency	(V / - / Hz)	400 / 3 / 50	
	Motor Nominal power	(kW)	(Note 1)	
	Motor Rated current / Ratio starting current - rated current		d starting current is not exceed 5.5 times rated	current
			Single speed	our our
	Motor Speed	rpm	Single speed	
	Enclosure Classification	IP		
4.8	Motor indoor/outdoor		IP 54/IP 55	
4.9	Taractual bases and other and taract			
	l erminal boxes and other equipment		IP 65	
	Terminal boxes and other equipment  Motor Insulation class / Maximum heating class			
	Motor Insulation class / Maximum heating class		F / B	
.11	Motor Insulation class / Maximum heating class Motor Accesories			
5	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1)		F/B	
5.1	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base	scale engle	F / B  Structural steel ASTM A36 or equivalent	
5.1 5.1 5.2	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing	esalle esalle	F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent	
5.1 5.1 5.2	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3 5.4	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3 5.4 5.5	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent	
5.1 5.2 5.3 5.4 5.5 5.6	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3 5.4 5.5 5.6 5.7	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 4140 or equivalent	
5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs Case gasket		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent	
5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 4140 or equivalent	
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5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs Case gasket ACCESORIES Anchor (foundation) bolts		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 spiral wound	
5.11 5.15 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.1 6.2	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs Case gasket ACCESORIES Anchor (foundation) bolts Vent/Drains valves in the casing		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 spiral wound  Included Included	
5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.1 6.2 6.3	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs Case gasket ACCESORIES Anchor (foundation) bolts Vent/Drains valves in the casing Motor winding temperature		F / B  Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 spiral wound  Included Included (Note 1)	
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5.11 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 6.1 6.2 6.3 6.4 6.5 6.7 7.1	Motor Insulation class / Maximum heating class Motor Accesories MATERIALS (note 1) Pump-motor support base Pressure casing Inner case parts Impeller Wear rings Shaft Bushings Case and gland studs Case gasket ACCESORIES Anchor (foundation) bolts Vent/Drains valves in the casing Motor winding temperature Pressure gauge (suction and discharge) Filters upstream pumps (one per each pump) including PDIT (Instruments) Counter flange, gasket, bolts, nuts, washers in vendor scope DIMENSIONS AND LOADS Pump size (length / width / height) Motor size (length / width / height)	mm	Structural steel ASTM A36 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent Hard faced AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 or equivalent AISI 316 spiral wound  Included	
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		UNITS	REQUESTED	PROVIDED BY VENDOR
9	PAINTING	910 1	TO SERVICE AND THE RESERVE OF THE SERVE OF T	
9.1	Painting		accordance with ISO 12944-5 for the appropriate environment category (C3, Im1, Im2 and Im3)	
14	SCOPE OF SUPPLY		REQUIRED	OFFERED
10.1	Mechanical/main scope			
10.2	Pump units (including electric driver, coupling and auxiliary systems		By vendor	
10.3	Piping, valves and supports within the package		By vendor	
10.4	System integration into a skid mounted package		By vendor	
10.5	Painting		By vendor	
10.6	Anchor bolts and embedment parts		By vendor	
10.7	Electrical scope			
10.8	Instrumentation and control scope			
10.9	Services scope			
0.10	Project management		By vendor	
0.1	Engineering		By vendor	
0.12			By vendor	
0.13			By vendor	
0.14			By vendor	
0.15			By vendor	
	Site services/works scope			
-	OTY (3)			

Notes: \* QTY (3)

- (1) Vendor to provide or verify.
  (2) The pump head curve must be continuously rising with a shutoff head is 135% of rated head, and must be constantly decrease maintaining a uniform slope from the point of zero flow to the design point.
  (3) The pump and driver shall be capable of continuous operation at 110% of rated flow.
  (4) Minimum driver efficiency = 90 % @ rated point.
  (5) NPSH required must be lower than 65% of available NPSH.
  (6) Suction pressure will vary in the indicated range based on the level of the corresponding tank.
  (7) The pump must be able to pump at least a minimum flow of 30% of rated flow.
  (8) All cooling needs of the pump must be satisfied with the pumped fluid.
  (9) The pump and motor shall be coupled by a flexible coupling incorporating a spacer of sufficient length to allow dismantling of the pump bearings and shaft seals without disturbing the motor or piping.
  (10) Pressure drop for pump filter has been estimated 0,3 bar. If pressure drop is higher shall be considered in the pump TDH and NPSHa

