

 ICIC شرکت سرمایه‌گذاری صنایع شیمیایی ایران IRAN CHEMICAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						 شرکت طرح نواندیشسان	
	Process Control Building No.03 HVAC Equipment Data Sheets							
Contract No.: 6258	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
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2	24-Jan-2024	APPROVED FOR DESIGN	H.RASOOLI	H.RASOOLI	H.RASOOLI	R.JAVADZADEH
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REV	DATE	POI	Prepared By	Checked By	Checked By	Approved By

 شرکت سرمایه گذاری معین سرمایه ایران ICIC IRAN MINERAL INDUSTRIES INVESTMENT CO.	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit							 شرکت طرح نواندیشان
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AIR HANDLING UNIT									
SITE CONDITION	EXPOSURE :								
	ALTITUDE (ABOVE SEA LEVEL) :			5,528	(Ft)	1,685			(M)
	OUTDOOR DESIGN DB. TEMP. :			122	(° F)	50.0			(° C)
	OUTDOOR DESIGN WB. TEMP. :			77	(° F)	25.0			(° C)
LOCATION :	Process Control Building – HVAC ROOM								
TAG NO. :	CON-AHU-101								
MIXING BOX WITH PRE-FILTER	QTY :	1							
	AHU TYPE :	HORIZONTAL							
	SUPPLY AIR :	13,593	(CFM)	6,415			(L/s)		
	RETURN AIR :	9,485	(CFM)	4,476			(L/s)		
	FRESH AIR :	4,109	(CFM)	1,939			(L/s)		
	EXHAUST AIR (FROM AHU) :	0	(CFM)	0			(L/s)		
DAMPER	FRESH AIR	DAMPER TYPE :			MOTORIZED				
		BLADE TYPE :			OPPOSED				
	SUPPLY AIR	DAMPER TYPE :			MOTORIZED				
		BLADE TYPE :			OPPOSED				
	RETURN AIR	DAMPER TYPE :			MOTORIZED				
		BLADE TYPE :			OPPOSED				
FILTER	1ST. BED :ALUMINUM-WASHABLE	DIFFERENTIAL PRESSURE SWITCH :			REQUIRED				
		EFFICIENCY :			30%				
		MAX. AIR PRESSURE DROP : *			(*)	(IN. W.G.)	(*)	(Pa)	
		FACE AREA : *			(*)	(SQ Ft)	(*)	(SQ m)	
		FRAME MATERIAL :			STAINLESS STEEL 316L				
		RAILS MATERIAL :			STAINLESS STEEL 316L				
		NO OF LAYERS :			5				
		WASHABLE FILTER ARRANGEMENT :			V-TYPE				
	2ND. BED :PLEATED	DIFFERENTIAL PRESSURE SWITCH :			REQUIRED				
		EFFICIENCY :			45-50%				
		MAX. AIR PRESSURE DROP : *			0.6	(IN. W.G.)	150	(Pa)	
		FACE AREA : *			(*)	(SQ Ft)	(*)	(SQ m)	
		FRAME :			STAINLESS STEEL 316L				
3RD. BED :BAG	DIFFERENTIAL PRESSURE SWITCH :			REQUIRED					
	EFFICIENCY :			90%					
	MAX. AIR PRESSURE DROP : *			1	(IN. W.G.)	250	(Pa)		
	FACE AREA : *			(*)	(SQ Ft)	(*)	(SQ m)		
	FRAME :			STAINLESS STEEL 316L					

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AIR HANDLING UNIT										
SUPPLY FAN DATA	NO. OF FAN (DUTY/STAND BY) : *		2 (1 DUTY + 1 STANDBY)							
	FAN DIRECTION :		FRONT DISCHARGE							
	FAN SIZE : *		40	(IN)	1,000	(MM)				
	TOTAL AIR FLOW :		13,593	(CFM)	6,415	(L/s)				
	AIR FLOW FOR EACH FAN : *		13,593	(CFM)	6,415	(L/s)				
	INTERNAL STATIC PRESSURE : *		2.35	(IN. W.G.)	600	(Pa)				
	EXTERNAL STATIC PRESSURE :		2.21	(IN. W.G.)	400	(Pa)				
	TOTAL STATIC PRESSURE : *		4.56	(IN. W.G.)	1,000	(Pa)				
	FAN BLADE TYPE :		BACKWARD							
	FAN IMPELLER MATERIAL :		CARBON STEEL							
	FAN HOUSING MATERIAL :		ST37							
	FAN BHP : *		*							(BHP)
	TIP SPEED : *		MAX 20							(RPM)
	FAN SOUND LEVEL :		MAX ALLOWABLE NOISE LEVEL AT 1(M) FROM UNIT : 85							(DB)
	FAN EFFICIENCY : *		MIN 70							(%)
	DIFFERENTIAL PRESSURE SWITCH :		REQUIRED							
	MOTOR	NUMBER (DUTY/STAND BY) : *		1 (DUTY)+1(STANDBY)						
		FAN CONNECTION TYPE TO ELECTROMOTOR:		BELT DRIVE						
		NO OF BELT : *		(*)						
		BELT TYPE : *		(*)						
BEARING TYPE :		PILLOW BLOCK								
LUBRICANT PORT FOR BEARING : *		(*)								
PROTECTION DEGREE :		IP55								
INSULATION CLASS :		F								
RPM : *		MAX(1480)								
TOTAL POWER INPUT:		25	(HP)	18.5	(KW)					
CONTROL SYSTEM:		-								
		400	(VOLT)	3	(PH)	50	(CYC)			
COOLING COIL	TOTAL COOLING LOAD :		463	(MBH)	135.8	(KW)				
	SENSIBLE COOLING LOAD :		407	(MBH)	119.2	(KW)				
	ENTERING AIR DB / WB TEMP. :		90.1 / 66.2	(° F)	32.3 / 19	(° C)				
	LEAVING AIR DB / WB TEMP. :		56.1 / 54	(° F)	13.4 / 12.2	(° C)				
	EVAPORATING TEMP : *		MAX.	45	(° F)	7.2	(° C)			
	ADP : *		51.6	(° F)	10.9	(° C)				
	REFRIGERANT TYPE :		R134a							
	NO OF COIL : *		(*)							

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AIR HANDLING UNIT											
COOLING COIL	COIL FACE AREA : *		(*)	(SQ Ft)	(*)	(SQ. M)					
	COIL VELOCITY :		MAX.	500	FPM	2.54	MPS				
	COIL HEAT TRANSFER AREA : *		(*)	(SQ Ft)	(*)	(SQ. M)					
	MAX. AIR PRESSURE DROP : *		(*)	(IN.W.G.)	(*)	(Pa)					
	FIN TYPE : *		CORRUGATED								
	FINS PER INCH : *		MAX. 10					FPI			
	FINS THICKNESS : *		MIN. 0.0059	(IN.)	MIN. 0.15		(MM)				
	NO.OF ROWS : *		(*)	CIRCUITING : FULL							
	DIFFERENTIAL PRESSURE TRANSMITTER:		REQUIRED								
	COIL BY PASS FACTOR : *		0.1								
	TUBE SHEET ARRANGEMENT : *		TRIANGLE ARRANGEMENT								
	TUBE MATERIAL :		SEAMLESS COPPER								
	TUBE THICKNESS : *		MIN. 0.014 (IN)								
	FIN MATERIAL :		ALUMINIUM (WITH CORROSION PROTECTION)								
	ANTI CORROSION COATING :		BLYGOLD / HERESITE								
ANTI FREEZE PROTECTION :		REQUIRED									
HEATING COIL	TOTAL HEATING LOAD :		158.4	(MBH)	46.4	(KW)					
	ENTERING/LEAVING AIR DB TEMP. :		56.7 / 69.8	(° F)	13.7/21	(° C)					
	AIR PRESSURE DROP (WORKING):*			(IN.W.G.)		(Pa)					
	AIR PRESSURE DROP (DESIGN) :		(*)	(IN.W.G.)	(*)	(Pa)					
	FIN TYPE :		CORRUGATED								
	FINS PER INCH :		MAX : 10	FPI	NO. OF ROW :	(*)					
	FINS THICKNESS :		MIN : 0.0059	(IN.)	MIN : 0.15		(MM)				
	FIN MATERIAL :		STAINLESS STEEL								
	COIL BY PASS FACTOR : *		0.1								
	COIL FACE AREA :		(*)	(SQ Ft)	(*)	(SQ. M)					
	TUBE MATERIAL :		STAINLESS STEEL								
	TUBE THICKNESS : *		MIN. 0.014 (IN)	(IN.)	MIN : 0.35		(MM)				
	HOT WATER	H.W INLET/OUTLET TEMP. :		180 / 160	(° F)	82 / 71	(° C)				
		H.W FLOW :		15.8	(GPM)	1.0	(L/s)				
		HOT WATER VELOCITY :*			(FPS)	0	(MPS)				
H.W MAX. PRESSURE DROP:		(*)	(Ft.W.G.)	(*)	(KPa)						
NO. OF CIRCUIT : *					CIRCUITING :						
COIL BY PASS FACTOR : *		0.1									
ELECTRICAL AND CONTROL PANEL	ELECTRICAL AND CONTROL PANEL :				REQUIRED						
	ELECTRICAL AND CONTROL PANEL TYPE :				CENTRAL-REMOTE FLOOR MOUNTED						
	ELECTRICAL AND CONTROL PANEL PROTECTION CLASS :				IP42						
PACKAGED UNIT ENCLOSURE :				DOUBLE SKIN							

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AIR HANDLING UNIT						
CASING	UNIT CHASSIS MATERIAL , THICKNESS :		ALUMINIUM	4	(MM)	
	UNIT BOTTOM PLATE MATERIAL :		GALVANIZED	2	(MM)	
	DRAIN PAN MATERIAL/THICKNESS :		PP	2	(MM)	
	EXTERNAL PANEL	MATERIAL :		GALVANIZED		
		THICKNESS :		1.5		(MM)
		INSULATION / THICKNESS :		POLYURETHANE	50	(MM)
		COATING THICKNESS :		PRIMARY	70	MICRON
				INTERMEDIATE	100	MICRON
				FINAL	70	MICRON
		RAL SPECIFICATION : *		CASING	(*)	
	BODY			(*)		
	INTERNAL PANEL	MATERIAL : *		(*)		
		THICKNESS :		1.5		(MM)
		COATING THICKNESS :		PRIMARY	70	MICRON
INTERMEDIATE				100	MICRON	
FINAL				70	MICRON	
PERFORATED FAN SECTION INTERNAL PANEL :		REQUIRED				

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AIR HANDLING UNIT			
PHYSICAL DATA	OVERALL HEIGHT (*)		(MM)
	OVERALL LENGTH (*)		(MM)
	OVERALL WIDTH (*)		(MM)
	OPERATING WEIGHT (*)		(KG)
* SHALL BE COMPLETED / FINALIZED BY VENDOR.			

REMARKS :

- 1- PACKAGED UNIT SHALL BE DESIGNED AND MANUFACTURED TO OPERATE FOR YEAR AROUND.
- 2- INTERNAL PRESSURE DROP AND TOTAL PRESSURE DROP SHALL BE FINALIZED BY VENDOR.

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AIR COOLED CONDENSING UNIT										
SITE CONDITION	EXPOSURE :									
	ALTITUDE (ABOVE SEA LEVEL) :			5,528	(Ft)	1,685			(M)	
	OUTDOOR DESIGN DB. TEMP. :			122	(°F)	50.0			(°C)	
	OUTDOOR DESIGN WB. TEMP.:			77	(°F)	25.0			(°C)	
LOCATION :	Process Control Building – ROOF									
TAG NO. :	CON-ACC-01A/B									
NUMBER OF CONDENSER :	1(DUTY) + 1(STANDBY)									
AIR-COOLED CONDENSER	TOTAL HEAT REJECTION : *		463	(MBH)	136		(KW)			
	CONDENSING TEMP. : *		144	(° F)	62.2		(° C)			
	TEMP. DIFFERENCE (TD) :		MAX. 18	(° F)	MAX. 10		(° C)			
	COIL	NO. OF CIRCUIT : *		(*)	CIRCUITING : *		HALF			
		NO OF COIL FOR EACH CIRCUIT : *				TOTAL NO OF COIL : *		(*)		
		NO. OF ROWs : *		(*)	FINS PER INCH :		MAX. 10			
		COIL FACE AREA* :		(*)	(SQ.FT)	(*)		(SQ.M)		
		COIL VELOCITY :		MAX. 550	(FPM)	2.8		(M/S)		
		CONDENSER COIL ARRANGEMENT :*		V TYPE						
		MAX. AIR PRESSURE DROP :		(*)	(IN.W.G.)	(*)		(Pa)		
		FIN THICKNESS : *		MIN. 0.006	(IN)	MIN. 0.15		(MM)		
		FIN MATERIAL :		ALUMINIUM						
		TUBE SIZE : *		(*)	(IN)	(*)		(MM)		
		TUBE THICKNESS : *		(*)	(IN)	(*)		(MM)		
		TUBE MATERIAL :		SEAMLESS COOPER						
	PRESSURE RELIEF VALVE :		REQUIRED							
	COATING HEAT TRANSFER CORRECTION FACTOR :		5%							
	ANTI CORROSION COATING :		BLYGOLD / HERESITE							
	FAN	QUANTITY(FOR EACH) : *		8	TYPE :	AXIAL, ROTOREX				
		NO F FAN FOR EACH CIRCUIT : *		1						
CLASS :		F	FAN DIA. : *	31.9	(IN)	810	(MM)			
TOTAL AIR FLOW : *		(*)	(CFM)	(*)		(L/S)				
FAN EFFICIENCY:		MIN. 75	(%)							
FAN SPEED :		MAX. 900					(RPM)			
ALLOWABLE NOISE LEVEL AT 1(M) FROM UNIT :		MAX. 85					(DB)			
FAN FRAME MATERIAL : *		(*)								
FAN IMPELLER MATERIAL : *		(*)								
FAN HOUSING MATERIAL : *		(*)								
PROTECTION DEGREE :		IP55								
TOTAL ELEC. POWER INPUT : *		12.86	(HP)	10		(KW)				
		400	(VOLT)	3	(PH.)	50	(CYC)			

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AIR COOLED CONDENSING UNIT										
COMPRESSOR	TYPE :			SEMI-HERMETIC RECIPROCATING		QUANTITY : *		2		
	TOTAL REFRIGERANT CHARGE* :			(*)	(Lb)	(*)	(Kg)			
	SUPER HEAT TEMP(MAX) :			10	(° F)	5.5	(° C)			
	SUBCOOLING TEMP(MAX) :			7	(° F)	3.8	(° C)			
	INSULATION CLASS :			F						
	PROTECTION DEGREE :			IP55						
	LIQUID INJECTION :			REQUIRED						
	OIL LEVEL SWITCH :			REQUIRED						
	OIL HEATER :			REQUIRED						
	SIGHT GLASS :			REQUIRED						
	SUCTION VALVE :			REQUIRED						
	DISCHARGE VALVE :			REQUIRED						
	TOTAL ELEC. POWER INPUT : *			2*38.5	(HP)	2*28.3	(KW)			
	400			(VOLT)	3	(PH)	50	(CYC)		
CAPACITY REDUCTION :			(% FULL CIRCUIT)							
REFRIGERATION EQUIPMENT	EXPANSION VALVE TYPE :			ELECTRONIC						
	ANTI FREEZ PROTECTION :			REQUIRED						
	ACCUMULATOR :			REQUIRED						
	ACCUMULATOR WITH HEAT EXCHANGER :			REQUIRED						
	RECEIVERS TANK :			REQUIRED						
	OIL SEPARATOR :			REQUIRED						
	SOLENOID VALVE FOR EACH CIRCUIT :			REQUIRED						
	FILTER DRIER FOR EACH CIRCUIT :			REQUIRED						
	SIGHT GLASS FOR EACH CIRCUIT :			REQUIRED						
	SERVICE VALVE FOR EACH CIRCUIT :			REQUIRED						
	SUCTION PRESSURE GUAGE FOR EACH CIRCUIT :			REQUIRED						
	DISCHARGE PRESSURE GUAGE FOR EACH CIRCUIT :			REQUIRED						
	OIL PRESSURE GUAGE FOR EACH CIRCUIT :			REQUIRED						
YEAR ROUND OPERATION :			REQUIRED							
ELECTRICAL AND CONTROL PANEL	ELECTRICAL AND CONTROL PANEL :			REQUIRED						
	ELECTRICAL AND CONTROL PANEL TYPE :			CENTRAL-REMOTE FLOOR MOUNTED						
	ELECTRICAL AND CONTROL PANEL PROTECTION CLASS :			IP65						

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AIR COOLED CONDENSING UNIT																	
CASING	PACKAGED UNIT ENCLOSURE :					DOUBLE SKIN											
	UNIT CHASIS MATERIAL , THICKNESS :CARBON STEEL(STANDARD PROFILE)					CARBON STEEL(STANDARD PROFILE)											
	UNIT BOTTOM PLATE MATERIAL :					GALVANIZED						2	(MM)				
	EXTERNAL PANEL					MATERIAL :			GALVANIZED								
						THICKNESS :			1.5						(MM)		
						COATING THICKNESS :			PRIMARY			70			MICRON		
									INTERMEDIATE			100			MICRON		
									FINAL			70			MICRON		
	RAL SPECIFICATION : *			CASING			(*)										
				BODY			(*)										
PERFORATED FAN SECTION INTERNAL PANEL :					REQUIRED												
PHYSICAL DATA	OVERALL HEIGHT (*)					(*)						(MM)					
	OVERALL LENGTH (*)					(*)						(MM)					
	OVERALL WIDTH (*)					(*)						(MM)					
	OPERATING WEIGHT (*)					(*)						(KG)					
* SHALL BE COMPLETED / FINALIZED BY VENDOR.																	

REMARKS :

1- PACKAGED UNIT SHALL BE DESIGNED AND MANUFACTURED TO OPERATE FOUR YEAR AROUND.

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CONDENSING BOILER									
SITE CONDITION	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
LOCATION :	PROCESS CONTROL BUILDING NO.03 - MECHANICAL ROOM								
TAG NO. :	CON-BO-101, CON-BO-102			Quantity	2(ONE AS STANBY)				
BOILER TYPE :	CONDENSING BOILER								
FUEL TYPE :	<input checked="" type="checkbox"/> NATURAL GAS		<input type="checkbox"/> FUEL OIL		<input type="checkbox"/> NATURAL GAS & FUEL OIL				
BOILER RATING	MAX. HEATING CAPACITY :		500	(MBH)	147		(KW)		
	OPERATING PRESSURE :		58	(Psi)	4		(Bar)		
FUEL CONSUMPTION	NATURAL GAS FLOW RATE :		696	(CFH)	20		(M ³ /Hr)		
	FUEL OIL FLOW RATE :		-	(GPH)	-		(THERMS)		
	MINIMUM REGULATED GAS PRESSURE :		0.25	(Psi)	0.0172		(Bar)		
BURNER * POWER CONSUMPTION	NO. OF STAGES :		(*)						
	BLOWER MOTOR :		(*)	(HP)	(*)		(KW)		
	OIL PUMP MOTOR :		-	(HP)	-		(KW)		
	OIL HEATER :		-	(HP)	-		(KW)		
ELECTRIC DATA *	TOTAL POWER INPUT:		(*)	(HP)	(*)		(KW)		
	(*)	(VOLT)	(*)	(PH)	(*)		(CYC)		
HOT WATER DATA	SUPPLY WATER TEMP :		180	(°F)	82.2		(°C)		
	RETURN WATER TEMP :		160	(°F)	71.1		(°C)		
	FLOW RATE :		(*)	(GPM)	(*)		(L/s)		
	WATER VOLUME :		(*)	(Gal)	(*)		(Lit)		
	BOILER PRESSURE DROP :		(*)	(Ft.W.G)	(*)		(KPa)		
BOILER PIPING CONNECTIONS*	SUPPLY WATER :		(*)	(IN)	DRAIN SIZE :		(*) (IN)		
	RETURN WATER :		(*)	(IN)	CHIMNEY DIA. :		(*) (IN)		
	SAFETY VALVE NO. & DIA. :		*		(IN)				
PHYSICAL DATA*	OVERALL HEIGHT :		(*)	(MM)	CLEARANCE	FRONT :		* (MM)	
	OVERALL LENGTH :		(*)	(MM)		REAR :		* (MM)	
	OVERALL WIDTH :		(*)	(MM)		RIGHT SIDE :		* (MM)	
	WEIGHT		OPERATING :			LEFT SIDE :		* (MM)	
	SHIPPING :		(*)		(Kg)				
* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)									
REMARKS : Cast Iron Package Unit souled be include a suitable expansion tank, burner, domestic hot water generator and all needed safety and control devices.									

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CENTRIFUGAL , IN-LINE CIRCULATING PUMP									
SITE CONDITION	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
LOCATION :	MECH ROOM-CONTROL BUILDING AHU Heating Coil & DUCT REHEAT COIL			<input checked="" type="checkbox"/> INDOOR	<input type="checkbox"/> OUTDOOR				
TAG NO. :	CON-PU-101 & CON-PU-102								
FLUID DATA	NAME OF FLUID :	HOT WATER		DUTY :	2x100 (ONE DUTY, ONE STANDBY)				
	LIQUID TEMP. :	180		(°F)	82.2		(°C)		
	SPECIFIC GRAVITY :	1							
	VISCOSITY :	0.356		(CP)	@	82.2		(°C)	
	VAPOR PRESSURE (ABSOLUTE) :	21.8		(Psi)	151		(KPa)		
PUMP DATA	IMPELLER DIA. :	*		(IN)	*		(MM)		
	PUMP SPEED :	1450 (*)		(RPM)	EFFICIENCY :	70 (*)		(%)	
	SPECIFIC SPEED :	(*)		(RPM)	PUMP BHP :	(*)			
	MAX. HEAD :	34.2		(Ft)	10.4		(M)		
	FLOW RATE :	20.1		(GPM)	4.6		(M ³ /Hr)		
	NPSHR :	*		(Ft)	*		(M)		
	NPSHA :	*		(Ft)	*		(M)		
NOISE :	MAX 85 (AT 1 METER)		(DB)						
NOZZLE CONNECTION	SUCTION DIA. :	*		(IN)	*		(MM)		
	DISCHARGE DIA. :	*		(IN)	*		(MM)		
ELECTRICAL DATA*	TOTAL ELEC. POWER INPUT :	1.1 (*)		(KW)	1.5 (*)		(HP)		
	400	(VOLT)	3	(PH)	50		(CYC)		
	MOTOR SPEED :	1450 (*)		(RPM)					
	FULL LOAD AMP. :	*		LOCKED ROTOR AMP. :	*				
PHYSICAL DATA*	OVERALL LENGTH :	(*)		(MM)	CLEARANCE	LEFT SIDE :	*		(MM)
	OVERALL WIDTH :	(*)		(MM)		RIGHT SIDE :	*		(MM)
	OVERALL HEIGHT :	(*)		(MM)		FRONT SIDE :	*		(MM)
	TOTAL OPERATING WEIGHT :	(*)		(Kg)		REAR SIDE :	*		(MM)
(*) COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)									
REMARKS :									

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CENTRIFUGAL , IN-LINE CIRCULATING PUMP									
SITE CONDITION	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
LOCATION :	MECH ROOM-SUBSTATION BUILDING AHU Heating Coil			<input checked="" type="checkbox"/> INDOOR	<input type="checkbox"/> OUTDOOR				
TAG NO. :	CON-PU-103 & CON-PU-104								
FLUID DATA	NAME OF FLUID :	HOT WATER		DUTY :	2x100 (ONE DUTY, ONE STANDBY)				
	LIQUID TEMP. :	180		(°F)	82.2		(°C)		
	SPECIFIC GRAVITY :	1							
	VISCOSITY :	0.356		(CP)	@	82.2		(°C)	
	VAPOR PRESSURE (ABSOLUTE) :	21.8		(Psi)	151		(KPa)		
PUMP DATA	IMPELLER DIA. :	*		(IN)	*		(MM)		
	PUMP SPEED :	1450 (*)		(RPM)	EFFICIENCY :	70 (*)		(%)	
	SPECIFIC SPEED :	(*)		(RPM)	PUMP BHP :	(*)			
	MAX. HEAD :	52.2		(Ft)	15.9		(M)		
	FLOW RATE :	20.6		(GPM)	4.7		(M ³ /Hr)		
	NPSHR :	*		(Ft)	*		(M)		
	NPSHA :	*		(Ft)	*		(M)		
NOISE :	MAX 85 (AT 1 METER)		(DB)						
NOZZLE CONNECTION	SUCTION DIA. :	*		(IN)	*		(MM)		
	DISCHARGE DIA. :	*		(IN)	*		(MM)		
ELECTRICAL DATA*	TOTAL ELEC. POWER INPUT :	1.1 (*)		(KW)	1.5 (*)		(HP)		
	230	(VOLT)	1	(PH)	50		(CYC)		
	MOTOR SPEED :	1450 (*)		(RPM)					
	FULL LOAD AMP. :	*		LOCKED ROTOR AMP. :	*				
PHYSICAL DATA	OVERALL LENGTH :	(*)		(MM)	CLEARANCE	LEFT SIDE :	*		(MM)
	OVERALL WIDTH :	(*)		(MM)		RIGHT SIDE :	*		(MM)
	OVERALL HEIGHT :	(*)		(MM)		FRONT SIDE :	*		(MM)
	TOTAL OPERATING WEIGHT :	(*)		(Kg)		REAR SIDE :	*		(MM)
	*COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)								
REMARKS :									

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CENTRIFUGAL , IN-LINE CIRCULATING PUMP								
SITE CONDITION	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)	
LOCATION :	MECH ROOM-DHWG CERCULATION			<input checked="" type="checkbox"/> INDOOR	<input type="checkbox"/> OUTDOOR			
TAG NO. :	CON-PU-105 & CON-PU-106							
FLUID DATA	NAME OF FLUID :	HOT WATER		DUTY :	2x100 (ONE DUTY, ONE STANDBY)			
	LIQUID TEMP. :	180		(°F)	82.2		(°C)	
	SPECIFIC GRAVITY :	1						
	VISCOSITY :	0.356		(CP)	@	82.2		(°C)
	VAPOR PRESSURE (ABSOLUTE) :	21.8		(Psi)	151		(KPa)	
PUMP DATA	IMPELLER DIA. :	*		(IN)	*		(MM)	
	PUMP SPEED :	1450 (*)		(RPM)	EFFICIENCY :	70 (*)		(%)
	SPECIFIC SPEED :	(*)		(RPM)	PUMP BHP :	(*)		
	MAX. HEAD :	24		(Ft)	7.3		(M)	
	FLOW RATE :	4.5		(GPM)	1.0		(M ³ /Hr)	
	NPSHR :	*		(Ft)	*		(M)	
	NPSHA :	*		(Ft)	*		(M)	
NOISE :	MAX 85 (AT 1 METER)			(DB)				
NOZZLE CONNECTION	SUCTION DIA. :	*		(IN)	*		(MM)	
	DISCHARGE DIA. :	*		(IN)	*		(MM)	
ELECTRICAL DATA*	TOTAL ELEC. POWER INPUT :	0.578 (*)		(KW)	0.8 (*)		(HP)	
	230	(VOLT)	1	(PH)	50		(CYC)	
	MOTOR SPEED :	1450 (*)		(RPM)				
	FULL LOAD AMP. :	*		LOCKED ROTOR AMP. :	*			
PHYSICAL DATA	OVERALL LENGTH :	(*)		(MM)	CLEARANCE	LEFT SIDE :	*	(MM)
	OVERALL WIDTH :	(*)		(MM)		RIGHT SIDE :	*	(MM)
	OVERALL HEIGHT :	(*)		(MM)		FRONT SIDE :	*	(MM)
	TOTAL OPERATING WEIGHT :	(*)		(Kg)		REAR SIDE :	*	(MM)
	*COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)							
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CENTRIFUGAL , IN-LINE CIRCULATING PUMP								
SITE CONDITION	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)	
LOCATION :	MECH ROOM-DHW RECERCULATION			<input checked="" type="checkbox"/> INDOOR	<input type="checkbox"/> OUTDOOR			
TAG NO. :	CON-PU-107 & CON-PU-108							
FLUID DATA	NAME OF FLUID :	DOMESTIC HOT WATER		DUTY :	2x100 (ONE DUTY, ONE STANDBY)			
	LIQUID TEMP. :	140		(°F)	60		(°C)	
	SPECIFIC GRAVITY :	1						
	VISCOSITY :	0.467		(CP)	@	60		(°C)
	VAPOR PRESSURE (ABSOLUTE) :	21.8		(Psi)	151		(KPa)	
PUMP DATA	IMPELLER DIA. :	*		(IN)	*		(MM)	
	PUMP SPEED :	1450 (*)		(RPM)	EFFICIENCY :	70 (*)		(%)
	SPECIFIC SPEED :	*		(RPM)	PUMP BHP :	(*)		
	MAX. HEAD :	14		(Ft)	4.3		(M)	
	FLOW RATE :	1.1		(GPM)	0.2		(M ³ /Hr)	
	NPSHR : ★	*		(Ft)	*		(M)	
	NPSHA : ★	*		(Ft)	*		(M)	
NOISE :	MAX 85 (AT 1 METER)			(DB)				
NOZZLE CONNECTION	SUCTION DIA. :	*		(IN)	*		(MM)	
	DISCHARGE DIA. :	*		(IN)	*		(MM)	
ELECTRICAL DATA*	TOTAL ELEC. POWER INPUT :	0.09*		(KW)	0.12*		(HP)	
	230	(VOLT)	1	(PH)	50		(CYC)	
	MOTOR SPEED :	3 SPEED*			(RPM)			
	FULL LOAD AMP. :	*		LOCKED ROTOR AMP. :	*			
PHYSICAL DATA	OVERALL LENGTH :	*		(MM)	CLEARANCE	LEFT SIDE :	*	(MM)
	OVERALL WIDTH :	*		(MM)		RIGHT SIDE :	*	(MM)
	OVERALL HEIGHT :	*		(MM)		FRONT SIDE :	*	(MM)
	TOTAL OPERATING WEIGHT :	*		(Kg)		REAR SIDE :	*	(MM)
* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)								
REMARKS :								

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CENTRIFUGAL FAN								
SITE CONDITION	EXPOSURE :							
	ALTITUDE :	5526.8	(ft)	1685	(m)			
	OUTDOOR DESIGN DBT :	122	(°F)	50.0	(°C)			
GENERAL DATA	TAG NO. :	CON-EX-101A,B		TYPE :	SINGLE WIDTH SINGLE INLET			
	QUANTITY :	2	(1 DUTY & 1 STANDBY)					
	LOCATION :	Battery Room(ON ROOF)						
	EMPLACEMENT :	OUTDOOR		HAZARD AREA :	NO			
	FLUID :	Air		FLUID TEMPERATURE :	50	(°C)		
	EXPLOSION PROOF :	YES		EX. PROOF CLASS :	Exe IIC T3			
CONFIGURATION	FAN BLADE TYPE :	BACKWARD CURVED						
	POWER TRANSMISSION :	BELT DRIVE						
	ROTATE DIRECTION :	ONE COUNTER CLOCKWISE ONE CLOCKWISE						
	DISCHARGE DIRECTION :	HORIZONTAL DISCHARGE						
	DISCHARGE TYPE :	FREE DISCHARGE						
	NUMBER OF BELT:	1						
FAN DATA	AIR FLOW :	604	(CFM)	285	(l/s)			
	TOTAL STATIC PRESSURE :	0.86	(in.w.g.)	215	(Pa)			
	FAN SIZE :	(*)	(in)	(*)	(mm)			
	INLET/OUTLET AREA :	(*)	(ft2)	(*)	(m2)			
	MAX. OUTLET VELOCITY :	(*)	(fpm)	(*)	(m/s)			
	TIP SPEED* :	(*)	(fpm)	(*)	(m/s)			
	MAX FAN SPEED* :	1450	(RPM)	FAN EFFICIENCY* :	75(min)	(%)		
	SOUND LEVEL @ 1m	80	(DB)	FAN BHP :	0.1			
	BEARING TYPE :	PILLOW BLOCK		NO. OF SHEAVE :	(*)			

CENTRIFUGAL FAN

MOTOR DATA	MAX MOTOR SPEED :	1450		(RPM)		
	FULL LOAD AMP. :	(*)		(A)		
	IP :	55		INSULATION CLASS :	F	
	TOTAL POWER INPUT :	0.75*		(HP)	0.55*	(kW)
	400	(VOLT)	3	(PH)	50	(CYC)
MATERIAL	HOUSING MATERIAL :	(*)		IMPELLER MATERIAL :	(*)	
	SHAFT MATERIAL :	(*)		CHASSIS MATERIAL :	(*)	
ACCESSORIES	TERMINAL BOX :	REQUIRED				
	ON/OFF SWITCH :	REQUIRED				
	EMERGENCY SHUT DOWN PUSH BOTTOM :	REQUIRED				
	SHEAVE & PULLEY PROTECTION GUARD :	REQUIRED				
	VIBRATION ISOLATOR :	REQUIRED				
	ACCESS DOOR FOR HOUSING :	REQUIRED				
	BACK DRAFT DAMPER :	REQUIRED				
PHYSICAL DATA*	OVERALL HEIGHT :	(*)	(mm)	OVERALL WIDTH :	(*)	(mm)
	OVERALL LENGTH :	(*)	(mm)	OPERATING WEIGHT :	(*)	(kg)

* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)

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CENTRIFUGAL FAN								
SITE CONDITION	EXPOSURE :							
	ALTITUDE :		5526.8	(ft)	1685	(m)		
	OUTDOOR DESIGN DBT :		122	(°F)	50.0	(°C)		
GENERAL DATA	TAG NO. :		CON-EX-102		TYPE :	SINGLE WIDTH SINGLE INLET		
	QUANTITY :		1	(1 DUTY & 0 STANDBY)				
	LOCATION :		W/C. SHOWER AND LOCKER ROOM (ON ROOF)					
	EMPLACEMENT :		OUTDOOR		HAZARD AREA :	NO		
	FLUID :		Air		FLUID TEMPERATURE :	50	(°C)	
	EXPLOSION PROOF :		NO		EX. PROOF CLASS :			
CONFIGURATION	FAN BLADE TYPE :		BACKWARD CURVED					
	POWER TRANSMISSION :		BELT DRIVE					
	ROTATE DIRECTION :		COUNTER CLOCLWISE ROTATION					
	DISCHARGE DIRECTION :		HORIZONTAL DISCHARGE					
	DISCHARGE TYPE :		FREE DISCHARGE					
	NUMBER OF BELT:		1					
FAN DATA	AIR FLOW :		2570	(CFM)	1213	(l/s)		
	TOTAL STATIC PRESSURE :		0.88	(in.w.g.)	220	(Pa)		
	FAN SIZE :		(*)	(in)	(*)	(mm)		
	INLET/OUTLET AREA :		(*)	(ft2)	(*)	(m2)		
	MAX. OUTLET VELOCITY :		(*)	(fpm)	(*)	(m/s)		
	TIP SPEED* :		(*)	(fpm)	(*)	(m/s)		
	MAX FAN SPEED* :		1450	(RPM)	FAN EFFICIENCY* :	75(min)	(%)	
	SOUND LEVEL @ 1m		80	(DB)	FAN BHP :	0.5		
BEARING TYPE :		PILLOW BLOCK		NO. OF SHEAVE :	(*)			

CENTRIFUGAL FAN

MOTOR DATA	MAX MOTOR SPEED :	1450		(RPM)		
	FULL LOAD AMP. :	(*)		(A)		
	IP :	55		INSULATION CLASS :	F	
	TOTAL POWER INPUT :	2*		(HP)	1.5*	(kW)
	400	(VOLT)	3	(PH)	50	(CYC)
MATERIAL	HOUSING MATERIAL :	(*)		IMPELLER MATERIAL :	(*)	
	SHAFT MATERIAL :	(*)		CHASSIS MATERIAL :	(*)	
ACCESSORIES	TERMINAL BOX :	REQUIRED				
	ON/OFF SWITCH :	REQUIRED				
	EMERGENCY SHUT DOWN PUSH BOTTOM :	REQUIRED				
	SHEAVE & PULLEY PROTECTION GUARD :	REQUIRED				
	VIBRATION ISOLATOR :	REQUIRED				
	ACCESS DOOR FOR HOUSING :	REQUIRED				
	BACK DRAFT DAMPER :	REQUIRED				
PHYSICAL DATA*	OVERALL HEIGHT :	(*)	(mm)	OVERALL WIDTH :	(*)	(mm)
	OVERALL LENGTH :	(*)	(mm)	OPERATING WEIGHT :	(*)	(kg)

* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)

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CENTRIFUGAL FAN								
SITE CONDITION	EXPOSURE :							
	ALTITUDE :	5526.8	(ft)	1685	(m)			
	OUTDOOR DESIGN DBT :	122	(°F)	50.0	(°C)			
GENERAL DATA	TAG NO. :	CON-EX-103		TYPE :	SINGLE WIDTH SINGLE INLET			
	QUANTITY :	1	(1 DUTY & 0 STANDBY)					
	LOCATION :	PANTRY EXHAUST (ON ROOF)						
	EMPLACEMENT :	OUTDOOR		HAZARD AREA :	NO			
	FLUID :	Air		FLUID TEMPERATURE :	50	(°C)		
	EXPLOSION PROOF :	NO		EX. PROOF CLASS :				
CONFIGURATION	FAN BLADE TYPE :	BACKWARD CURVED						
	POWER TRANSMISSION :	BELT DRIVE						
	ROTATE DIRECTION :	COUNTER CLOCLWISE ROTATION						
	DISCHARGE DIRECTION :	HORIZONTAL DISCHARGE						
	DISCHARGE TYPE :	FREE DISCHARGE						
	NUMBER OF BELT:	1						
FAN DATA	AIR FLOW :	413	(CFM)	195	(l/s)			
	TOTAL STATIC PRESSURE :	0.86	(in.w.g.)	215	(Pa)			
	FAN SIZE :	(*)	(in)	(*)	(mm)			
	INLET/OUTLET AREA :	(*)	(ft2)	(*)	(m2)			
	MAX. OUTLET VELOCITY :	(*)	(fpm)	(*)	(m/s)			
	TIP SPEED* :	(*)	(fpm)	(*)	(m/s)			
	MAX FAN SPEED* :	1450	(RPM)	FAN EFFICIENCY* :	75(min)	(%)		
	SOUND LEVEL @ 1m	80	(DB)	FAN BHP :	0.1			
BEARING TYPE :	PILLOW BLOCK		NO. OF SHEAVE :	(*)				

CENTRIFUGAL FAN

MOTOR DATA	MAX MOTOR SPEED :	1450		(RPM)		
	FULL LOAD AMP. :	(*)		(A)		
	IP :	55		INSULATION CLASS :	F	
	TOTAL POWER INPUT :	0.75*		(HP)	0.55*	(kW)
	400	(VOLT)	3	(PH)	50	(CYC)
MATERIAL	HOUSING MATERIAL :	(*)		IMPELLER MATERIAL :	(*)	
	SHAFT MATERIAL :	(*)		CHASSIS MATERIAL :	(*)	
ACCESSORIES	TERMINAL BOX :	REQUIRED				
	ON/OFF SWITCH :	REQUIRED				
	EMERGENCY SHUT DOWN PUSH BOTTOM :	REQUIRED				
	SHEAVE & PULLEY PROTECTION GUARD :	REQUIRED				
	VIBRATION ISOLATOR :	REQUIRED				
	ACCESS DOOR FOR HOUSING :	REQUIRED				
	BACK DRAFT DAMPER :	REQUIRED				
PHYSICAL DATA*	OVERALL HEIGHT :	(*)	(mm)	OVERALL WIDTH :	(*)	(mm)
	OVERALL LENGTH :	(*)	(mm)	OPERATING WEIGHT :	(*)	(kg)

* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)

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CENTRIFUGAL FAN								
SITE CONDITION	EXPOSURE :							
	ALTITUDE :	5526.8	(ft)	1685	(m)			
	OUTDOOR DESIGN DBT :	122	(°F)	50.0	(°C)			
GENERAL DATA	TAG NO. :	CON-EX-104		TYPE :	SINGLE WIDTH SINGLE INLET			
	QUANTITY :	1	(1 DUTY & 0 STANDBY)					
	LOCATION :	HVAC ROOM EXHAUST (ON ROOF)						
	EMPLACEMENT :	OUTDOOR		HAZARD AREA :	NO			
	FLUID :	Air		FLUID TEMPERATURE :	50	(°C)		
	EXPLOSION PROOF :	NO		EX. PROOF CLASS :				
CONFIGURATION	FAN BLADE TYPE :	BACKWARD CURVED						
	POWER TRANSMISSION :	BELT DRIVE						
	ROTATE DIRECTION :	COUNTER CLOCLWISE ROTATION						
	DISCHARGE DIRECTION :	HORIZONTAL DISCHARGE						
	DISCHARGE TYPE :	FREE DISCHARGE						
	NUMBER OF BELT:	1						
FAN DATA	AIR FLOW :	513	(CFM)	242	(l/s)			
	TOTAL STATIC PRESSURE :	0.88	(in.w.g.)	220	(Pa)			
	FAN SIZE :	(*)	(in)	(*)	(mm)			
	INLET/OUTLET AREA :	(*)	(ft2)	(*)	(m2)			
	MAX. OUTLET VELOCITY :	(*)	(fpm)	(*)	(m/s)			
	TIP SPEED* :	(*)	(fpm)	(*)	(m/s)			
	MAX FAN SPEED* :	1450	(RPM)	FAN EFFICIENCY* :	75(min)	(%)		
	SOUND LEVEL @ 1m	80	(DB)	FAN BHP :	0.1			
	BEARING TYPE :	PILLOW BLOCK		NO. OF SHEAVE :	(*)			

CENTRIFUGAL FAN

MOTOR DATA	MAX MOTOR SPEED :	1450		(RPM)		
	FULL LOAD AMP. :	(*)		(A)		
	IP :	55		INSULATION CLASS :	F	
	TOTAL POWER INPUT :	0.75*		(HP)	0.55*	(kW)
	400	(VOLT)	3	(PH)	50	(CYC)
MATERIAL	HOUSING MATERIAL :	(*)		IMPELLER MATERIAL :	(*)	
	SHAFT MATERIAL :	(*)		CHASSIS MATERIAL :	(*)	
ACCESSORIES	TERMINAL BOX :	REQUIRED				
	ON/OFF SWITCH :	REQUIRED				
	EMERGENCY SHUT DOWN PUSH BOTTOM :	REQUIRED				
	SHEAVE & PULLEY PROTECTION GUARD :	REQUIRED				
	VIBRATION ISOLATOR :	REQUIRED				
	ACCESS DOOR FOR HOUSING :	REQUIRED				
	BACK DRAFT DAMPER :	REQUIRED				
PHYSICAL DATA*	OVERALL HEIGHT :	(*)	(mm)	OVERALL WIDTH :	(*)	(mm)
	OVERALL LENGTH :	(*)	(mm)	OPERATING WEIGHT :	(*)	(kg)

* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)

REMARKS :

 شرکت سرمایه‌گذاری صنایع شیمیایی ایران IRAN CHEMICAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit							 شرکت طرح نوآریندیشان
	Process Control Building No.03 HVAC Equipment Data Sheets							
Contract No.: 6258	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	Page: 14 of 22
Old Doc No.	LRP	TNA	HV	19	DSH	0002	02	
	Doc No. :		LRP-TNA-HV-19-DSH-0002					

DUCT-MOUNTED HOT WATER REHEAT COIL										
SITE CONDITION	EXPOSURE :									
	ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)			
	OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(° C)			
	OUTDOOR DESIGN WB. TEMP. :		77	(° F)	25.0		(° C)			
LOCATION :	ON SUPPLY DUCT FOR OFFICES ROOM INN CONTROL BUILDING									
TAG NO. :	CON-REHCOIL-101									
HEATING COIL	AIR FLOW		6315	(CFM)	2,980		(L/S)			
	TOTAL HEATING LOAD :		90	(MBH)	26.4		(KW)			
	ENTERING/LEAVING AIR DB TEMP. :		57.2 / 75	(° F)	14 / 24		(° C)			
	AIR PRESSURE DROP (WORKING):*		(*)	(IN.W.G.)	(*)		(Pa)			
	AIR PRESSURE DROP (DESIGN) :		(*)	(IN.W.G.)	(*)		(Pa)			
	FIN TYPE :		CORRUGATED							
	FINS PER INCH :		MAX : 10	FPI	NO. OF ROW :		(*)			
	FINS THICKNESS :		MIN : 0.0059	(IN.)	MIN : 0.15		(MM)			
	FIN MATERIAL :		STAINLESS STEEL							
	COIL BY PASS FACTOR : *		0.1							
	COIL FACE AREA :		(*)	(SQ Ft)	(*)		(SQ. M)			
	TUBE MATERIAL :		STAINLESS STEEL							
	TUBE THICKNESS : *		MIN. 0.014 (IN)	(IN.)	MIN : 0.35		(MM)			
	HOT WATER	H.W INLET/OUTLET TEMP. :		180 / 160	(° F)	82 / 71		(° C)		
H.W FLOW :		9.0	(GPM)	0.6		(L/s)				
HOT WATER VELOCITY :*			(FPS)	0		(MPS)				
H.W MAX. PRESSURE DROP:		(*)	(Ft.W.G.)	(*)		(KPa)				
NO. OF CIRCUIT : *					CIRCUITING :					
COIL BY PASS FACTOR : *		0.1								

 شرکت سرمایه‌گذاری صنایع معدنی ایران IRAN MINERAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit							 شرکت طرح نواندیشان
	Process Control Building No.03 HVAC Equipment Data Sheets							
	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	-	Doc No. :		LRP-TNA-HV-19-DSH-0002				Page: 14 of 22

DUCT-MOUNTED HOT WATER REHEAT COIL			
PHYSICAL DATA	OVERALL HEIGHT (*)		(MM)
	OVERALL LENGTH (*)		(MM)
	OVERALL WIDTH (*)		(MM)
	OPERATING WEIGHT (*)		(KG)
* SHALL BE COMPLETED / FINALIZED BY VENDOR.			

REMARKS :

- 1- PACKAGED UNIT SHALL BE DESIGNED AND MANUFACTURED TO OPERATE FOR YEAR AROUND.
- 2- INTERNAL PRESSURE DROP AND TOTAL PRESSURE DROP SHALL BE FINALIZED BY VENDOR.

		Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						
		Process Control Building No.03 HVAC Equipment Data Sheets						
Contract No.:	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	Doc No. :		LRP-TNA-HV-19-DSH-0002					Page: 15 of 22
INDOOR UNIT V.R.F								
ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(C°)		
OUTDOOR DESIGN WB. TEMP:		77	(° F)	25.0		(C°)		
GENERAL DATA	TAG NO. :		CON-VRF.I-01					
	QUANTITY :		4					
	LOCATION :		01-CONTROL ROOM					
DESIGN DATA:	ACTUAL COOLING CAPACITY:	21.6	(KW)	73699		(BTU/h)		
	ACTUAL HEATING CAPACITY:	9	(KW)	30708		(BTU/h)		
	NOMINAL COOLING CAPACITY:	5.6	(KW)	18000		(BTU/h)		
	NOMINAL HEATING CAPACITY:	6.3	(KW)	21500		(BTU/h)		
	FAN AIR FLOW RATE (m3/hr)		(*)					
	ELECTRICAL:	50*	W	230V /1 Ph / 50HZ				
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA					
	TYPE:		4 WAY CASSETTE					
	LOCATION:		INDOOR					
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)					
	SIZE:	W (*), H(*), L(*) (MM)	OPERATING WEIGHT:	(*) (KG)				
	LINE OD:	LIQUID LINE: (*) (MM)	VAPOR LINE:	(*) (MM)				
MATERIAL	■CASING: VENDOR STANDARD		■HEATING COIL: VENDOR STANDARD					
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■REFRIGERENT PIPING: COPPER					
	■COIL TUBE/FIN: COPPER/COPPER COATED		■DRAINAGE PIPING: VENDOR STANDARD					
ACCESSORIES	■LEAD WIRE AND PLUG		■REMOTE PORTABLE CONTROLLER					
	■HIGH LOW PRESSURE SWITCH							
	■FILTER DRYER							
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL					
	UNIT SURFACE		VENDOR STANDARD					
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR .							

 شرکت سرمایه‌گذاری صنایع شیمیایی ایران IRAN CHEMICAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit							 شرکت طرح نوآندیشمان	
	Process Control Building No.03 HVAC Equipment Data Sheets								
	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev		
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02	Page: 16 of 22	
Old Doc No.	-	Doc No. :		LRP-TNA-HV-19-DSH-0002					
INDOOR UNIT V.R.F									
ALTITUDE (ABOVE SEA LEVEL) :			5,528	(Ft)	1,685	(M)			
OUTDOOR DESIGN DB. TEMP. :			122	(° F)	50.0	(C°)			
OUTDOOR DESIGN WB. TEMP:			77	(° F)	25.0	(C°)			
GENERAL DATA	TAG NO. :		CON-VRF.I-102						
	QUANTITY :		2						
	LOCATION :		03-ENGINEERING ROOM						
DESIGN DATA:	ACTUAL COOLING CAPACITY:	9.6	(KW)	32755	(BTU/h)				
	ACTUAL HEATING CAPACITY:	3.8	(KW)	12966	(BTU/h)				
	NOMINAL COOLING CAPACITY:	4.5*	(KW)	15500*	(BTU/h)				
	NOMINAL HEATING CAPACITY:	5*	(KW)	17000*	(BTU/h)				
	FAN AIR FLOW RATE (m3/hr)			(*)					
	ELECTRICAL:	40*	W	230V /1 Ph / 50HZ					
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA						
	TYPE:		4 WAY CASSETTE						
	LOCATION:		INDOOR						
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)						
	SIZE:	W (*), H(*), L(*) (MM)	OPERATING WEIGHT:	(*) (KG)					
	LINE OD:	LIQUID LINE: (*) (MM)	VAPOR LINE:	(*) (MM)					
MATERIAL	■CASING: VENDOR STANDARD		■HEATING COIL: VENDOR STANDARD						
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■REFRIGERENT PIPING: COPPER						
	■COIL TUBE/FIN: COPPER/COPPER COATED		■DRAINAGE PIPING: VENDOR STANDARD						
ACCESSORIES	■LEAD WIRE AND PLUG		■REMOTE PORTABLE CONTROLLER						
	■HIGH LOW PRESSURE SWITCH								
	■FILTER DRYER								
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL						
	UNIT SURFACE		VENDOR STANDARD						
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR .								

		Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						
		Process Control Building No.03 HVAC Equipment Data Sheets						
Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev		
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	-	Doc No. :		LRP-TNA-HV-19-DSH-0002			Page: 17 of 22	
INDOOR UNIT V.R.F								
ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(C°)		
OUTDOOR DESIGN WB. TEMP:		77	(° F)	25.0		(C°)		
GENERAL DATA	TAG NO. :		CON-VRF.I-103					
	QUANTITY :		2					
	LOCATION :		07-MANAGER OFFICE					
DESIGN DATA:	ACTUAL COOLING CAPACITY:	9.3	(KW)	31732		(BTU/h)		
	ACTUAL HEATING CAPACITY:	5.8	(KW)	19790		(BTU/h)		
	NOMINAL COOLING CAPACITY:	4.5*	(KW)	15500*		(BTU/h)		
	NOMINAL HEATING CAPACITY:	5*	(KW)	17000*		(BTU/h)		
	FAN AIR FLOW RATE (m3/hr)		(*)					
ELECTRICAL:		40*	W	230V /1 Ph / 50HZ				
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA					
	TYPE:		4 WAY CASSETTE					
	LOCATION:		INDOOR					
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)					
	SIZE:	W (*), H(*), L(*) (MM)		OPERATING WEIGHT:	(*) (KG)			
	LINE OD:	LIQUID LINE:	(*) (MM)	VAPOR LINE:	(*) (MM)			
MATERIAL	■CASING: VENDOR STANDARD		■HEATING COIL: VENDOR STANDARD					
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■REFRIGERENT PIPING: COPPER					
	■COIL TUBE/FIN: COPPER/COPPER COATED		■DRAINAGE PIPING: VENDOR STANDARD					
ACCESSORIES	■LEAD WIRE AND PLUG		■REMOTE PORTABLE CONTROLLER					
	■HIGH LOW PRESSURE SWITCH							
	■FILTER DRYER							
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL					
	UNIT SURFACE		VENDOR STANDARD					
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR .							

		Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						 شرکت طرح نوآندیشان
		Process Control Building No.03 HVAC Equipment Data Sheets						
Contract No.:	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	Doc No. :		LRP-TNA-HV-19-DSH-0002					Page: 18 of 22
INDOOR UNIT V.R.F								
ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(C°)		
OUTDOOR DESIGN WB. TEMP:		77	(° F)	25.0		(C°)		
GENERAL DATA	TAG NO. :		CON-VRF.I-104					
	QUANTITY :		1					
	LOCATION :		08-SUPERVISER ROOM					
DESIGN DATA:	ACTUAL COOLING CAPACITY:	6.1	(KW)	20813		(BTU/h)		
	ACTUAL HEATING CAPACITY:	3.8	(KW)	12966		(BTU/h)		
	NOMINAL COOLING CAPACITY:	7.1*	(KW)	24000*		(BTU/h)		
	NOMINAL HEATING CAPACITY:	8*	(KW)	27000*		(BTU/h)		
	FAN AIR FLOW RATE (m3/hr)		(*)					
ELECTRICAL:		60*	W	230V /1 Ph / 50HZ				
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA					
	TYPE:		4 WAY CASSETTE					
	LOCATION:		INDOOR					
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)					
	SIZE:	W (*), H(*), L(*) (MM)		OPERATING WEIGHT:	(*) (KG)			
	LINE OD:	LIQUID LINE:	(*) (MM)	VAPOR LINE:	(*) (MM)			
MATERIAL	■CASING: VENDOR STANDARD		■HEATING COIL: VENDOR STANDARD					
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■REFRIGERENT PIPING: COPPER					
	■COIL TUBE/FIN: COPPER/COPPER COATED		■DRAINAGE PIPING: VENDOR STANDARD					
ACCESSORIES	■LEAD WIRE AND PLUG		■REMOTE PORTABLE CONTROLLER					
	■HIGH LOW PRESSURE SWITCH							
	■FILTER DRYER							
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL					
	UNIT SURFACE		VENDOR STANDARD					
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR .							

		Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						 شرکت طرح نوآندیشان
		Process Control Building No.03 HVAC Equipment Data Sheets						
Contract No.:	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	Doc No. :		LRP-TNA-HV-19-DSH-0002					Page: 19 of 22
INDOOR UNIT V.R.F								
ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(C°)		
OUTDOOR DESIGN WB. TEMP:		77	(° F)	25.0		(C°)		
GENERAL DATA	TAG NO. :		CON-VRF.I-105					
	QUANTITY :		1					
	LOCATION :		09-ENGINEERING ROOM					
DESIGN DATA:	ACTUAL COOLING CAPACITY:	6.5	(KW)	22178		(BTU/h)		
	ACTUAL HEATING CAPACITY:	4.8	(KW)	16378		(BTU/h)		
	NOMINAL COOLING CAPACITY:	7.1*	(KW)	24000*		(BTU/h)		
	NOMINAL HEATING CAPACITY:	8*	(KW)	27000*		(BTU/h)		
	FAN AIR FLOW RATE (m3/hr)		(*)					
ELECTRICAL:		60*	W	230V /1 Ph / 50HZ				
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA					
	TYPE:		4 WAY CASSETTE					
	LOCATION:		INDOOR					
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)					
	SIZE:	W (*), H(*), L(*) (MM)		OPERATING WEIGHT:	(*) (KG)			
	LINE OD:	LIQUID LINE:	(*) (MM)	VAPOR LINE:	(*) (MM)			
MATERIAL	■CASING: VENDOR STANDARD		■HEATING COIL: VENDOR STANDARD					
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■REFRIGERENT PIPING: COPPER					
	■COIL TUBE/FIN: COPPER/COPPER COATED		■DRAINAGE PIPING: VENDOR STANDARD					
ACCESSORIES	■LEAD WIRE AND PLUG		■REMOTE PORTABLE CONTROLLER					
	■HIGH LOW PRESSURE SWITCH							
	■FILTER DRYER							
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL					
	UNIT SURFACE		VENDOR STANDARD					
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR .							

		Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						
		Process Control Building No.03 HVAC Equipment Data Sheets						
Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev		
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02	
Old Doc No.	-	Doc No. :		LRP-TNA-HV-19-DSH-0002			Page: 20 of 22	
OUTDOOR UNIT V.R.F								
ALTITUDE (ABOVE SEA LEVEL) :		5,528	(Ft)	1,685		(M)		
OUTDOOR DESIGN DB. TEMP. :		122	(° F)	50.0		(C°)		
OUTDOOR DESIGN WB. TEMP:		77	(° F)	25.0		(C°)		
GENERAL DATA	TAG NO. :		CON-VRF.O-101A/B					
	QUANTITY :		2(ONE AS STANDBY)					
	LOCATION :		ROOF					
	REFRIGERANT TYPE:		R410a					
NOMINAL COOLING CAPACITY:		52*	(KW)	177000*		(BTU/h)		
NOMINAL HEATING CAPACITY:		63*	(KW)	215000*		(BTU/h)		
FAN AIR FLOW RATE (m3/hr)			(*)					
ELECTRICAL:		18.5*	KW	230V /1 Ph / 50HZ				
TYPE & INSTALITION	AREA CLASSIFICATION		NON-HAZARDOUS AREA					
	TYPE:		VRV IVS					
	LOCATION:		OUTDOOR					
MANUFACTURER NAME & MODEL / SIZE & WEIGHT	NAME/MODEL		(*)					
	SIZE:	W (*), H(*), L(*) (MM)		OPERATING WEIGHT:	(*) (KG)			
	LINE OD:	LIQUID LINE:	(*) (MM)	VAPOR LINE:	(*) (MM)			
MATERIAL	■CASING: VENDOR STANDARD		■REFRIGERENT PIPING: COPPER					
	■COIL FRAME: HOT DIPPED GALVANIZED STEEL		■COMPRESSOR: VENDOR STANDARD					
	■COIL TUBE/FIN: COPPER/COPPER COATED							
ACCESSORIES	■LEAD WIRE AND PLUG							
	■HIGH LOW PRESSURE SWITCH							
INSULATION & FINISHING	INSULATION (REF. PIPING)		THERMAL					
	UNIT SURFACE		VENDOR STANDARD					
REMARKS	1. ITEMS MARKED * TO BE VERIFIED / FILLED IN BY VENDOR 2. EQUIPMENT OUTLINE DRAWINGS WITH PLAN AND SECTIONAL VIEW SHALL BE SUBMITTED. 3. ALL INTERCONNECTING REFRIGERANT PIPING, INSULATION AND ELECTRICAL WIRING WORK BETWEEN INDOOR AND OUTDOOR UNIT SHALL BE INCLUDED IN VENDOR'S SCOPE OF WORK. 4.DRAINAGE PIPING FROM INDOOR UNIT SHALL BE INSTALLED BY VENDOR . 5- THE OUTDOOR UNIT SHALL BE ABLE TO BE COUPLED WITH ANOTHER OUTDDOR UNIT.							

 شرکت سرمایه گذاری صنایع شیمیایی ایران IRAN CHEMICAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit						 شرکت طرح نو اندیشان
	Fire Station No.2 HVAC Equipment Data Sheets						
	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02
Old Doc No.	-	Doc No. :		LRP-TNA-HV-15-DSH-0002			Page: 21 of 22
DOMESTIC HOT WATER GENERATOR							
SITE CONDITION	EXPOSURE :						
	ALTITUDE :		5,528	(ft)	1,685	(m)	
	OUTDOOR DESIGN DBT :		122	(°F)	50.0	(°C)	
LOCATION :	MECH ROOM ON ROOF						
TAG NO. :	CON-DHWG-101						
CAPACITY	TANK VOLUME :		79	(Gal.)	300	(Lit.)	
	RECOVERY HEATING CAPACITY :		45000	(BTU/Hr)	13.2	(KW)	
DOMESTIC WATER SIDE	WATER FLOW RATE :		54	(GPH)	0.55	(L/s)	
	ENTERING WATER TEMP. :		40	(°F)	4.4	(°C)	
	LEAVING WATER TEMP. :		140	(°F)	60	(°C)	
HEATING WATER SIDE	REQUIRED HEATING ENERGY :		45000	(BTU/Hr)	13.2	(KW)	
	WATER FLOW RATE :		4.5	(GPM)	0.3	(L/s)	
	ENTERING WATER TEMP. :		180	(°F)	82.2	(°C)	
	LEAVING WATER TEMP. :		160	(°F)	71.1	(°C)	
PIPE CONNECTION*	DOMESTIC WATER IN :		(*)	(IN)	(*)	(MM)	
	DOMESTIC WATER OUT :		(*)	(IN)	(*)	(MM)	
	HEATING WATER IN :		(*)	(IN)	(*)	(MM)	
	HEATING WATER OUT :		(*)	(IN)	(*)	(MM)	
	PRESSURE,TEMP. RELIEF VALVE :		According to ASME code				
	DRAIN OF TANK :		(*)	(IN)	(*)	(MM)	
PHYSICAL DATA*	TANK DIAMETER :		(*)	(IN)	(*)	(MM)	
	TANK HEIGHT :		(*)	(IN)	(*)	(MM)	
	TUBE BUNDLE WITHDRAWAL LENGTH :		(*)	(IN)	(*)	(MM)	
	OPERATING WEIGHT :		(*)	(Lb)	(*)	(Kg)	
	SHIPPING WEIGHT :		(*)	(Lb)	(*)	(Kg)	
	CLEARANCE	REAR SIDE :		(*)	(MM)		
		FRONT SIDE :		(*)	(MM)		
		UP SIDE :		(*)	(MM)		
BOTTOM SIDE :		-	(MM)				

 ICIC شرکت سرمایه‌گذاری صنایع شیمیایی ایران IRAN CHEMICAL INDUSTRIES INVESTMENT CO	Completing the Remaining Documents of Design and Engineering Services for LAB2 Unit							 شرکت طرح نو اندیشان
	Fire Station No.2 HVAC Equipment Data Sheets							
	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	
Contract No.: 6258	LRP	TNA	HV	19	DSH	0002	02	Page: 21 of 22
Old Doc No.	-	Doc No. :		LRP-TNA-HV-15-DSH-0002				
* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)								
REMARKS :								

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Contract No.: 6258	Pro. Cod	Cons.	Discipline	Unit	Type	Serial	Rev	Page: 22 of 22	
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Doc No. :		LRP-TNA-HV-15-DSH-0002							
CLOSED EXPANSION TANK									
SITE CONDITION	EXPOSURE :								
	ALTITUDE :		5,528	(ft)	1,685	(m)			
	OUTDOOR DESIGN DBT :		122	(°F)	50.0	(°C)			
LOCATION :	MECH ROOM ON ROOF								
TAG NO. :	CON-C.EXT-01								
TYPE :	<input type="checkbox"/> AIR / WATER INTERFACE <input checked="" type="checkbox"/> DIAPHRAGM								
SYSTEM TYPE :	<input checked="" type="checkbox"/> HEATING <input type="checkbox"/> COOLING								
GENERAL DATA	TANK VOLUME :		38	(Gal.)	150	(Lit.)			
	MAX. AVERAGE OPERATING TEMP. :		180	(°F)	82.2	(°C)			
	ATMOSPHERIC PRESSURE (ABSOLUTE) :		(*)	(Ft.W.G)	(*)	(Kpa)			
	INITIAL FILL OR MIN.PRESSURE @ TANK :		(*)	(Ft.W.G)	(*)	(Kpa)			
	MAX. OPERATING PRESSURE @ TANK :		(*)	(Ft.W.G)	(*)	(Kpa)			
CONNECTIONS*	SIGHT GLASS :		(*)	(IN)					
	TANK AIR RELEASE FITTING :		(*)	(IN)					
	DRAIN AND AIR CONTROL INLET :		(*)	(IN)					
PHYSICAL DATA*	MIN. VOLUME :		(*)	(M3)	CLEARANCE	LEFT SIDE :		(*)	(MM)
	OVERALL DIAMETER :		(*)	(MM)		RIGHT SIDE :		(*)	(MM)
	OVERALL LENGTH :		(*)	(MM)		UP SIDE :		(*)	(MM)
	TOTAL OPERATING WEIGHT :		(*)	(Kg)		BOTTOM SIDE :		-	(MM)
* COMPLETED BY VENDOR / HVACR ENGINEER (IF NECESSARY)									