

Client:	Exxon Mobil Nigeria
Project:	QIT GFE
P.O. Number:	A193324
TAG Number:	NGAT-V-1160 & NGAT-V-1260
GSI JOB No.:	ME5349

Document Title:

Datasheet for Reciprocating Compressor Package

Document No.
GSI-ME5349-G7-7417
 Date:
 26 – Feb -09

Revision:
A

Total Page (Inc. Cover)
4

Data Sheet - Reciprocating Compressor Package				
Service Conditions (Site and Process) - Customary Units				
Facility Name:		QUA IBOE TERMINAL		Purchase Order No.: A1933249
Location:		EKET, NIGERIA		Requisition No.:
Item Name:		HP COMPRESSOR PACKAGES		ExxonMobil Project No.:
Item No.:		NGAT-V-1160/1260		Contractor Project No.:
1	Site Information			
2	Nearest City/Town:	Eket	County:	
3	State:	Akwa Ibom	Country:	Nigeria
4	Site Maximum Allowable Sound Pressure Level (dBA):	85 - 90 dBA @ 3-ft		
5	Site Electricity:	☒ Yes	☐ No	
6	Volts:	4,000	Phase:	3 Hertz: 50
7		☒ Hazardous	☐ Non-hazardous	
8	Electrical Classification:	Class: I	Group:	D Division: 2
9	Ambient Temp. (°F):	Max: 97	Min: 61	Design: 95
10	Elevation (ft, msl):	15-20	Mean Barometric Pressure (psia):	14.7 Mean Relative Humidity (%): 60-100
11	☒ Tropical	☐ Artic	☐ Desert	☒ Dust ☒ Sand
12	☐ Offshore	☒ Coastal	☐ Inlet Water	☐ Inland
13	☒ Indoors And Adequately Ventilated	☐ Outdoors	☐ Heated	☒ Unheated
14	☒ Totally Enclosed	☐ Partial Sides	☐ Platform	☐ Shed Roof ☐ No Roof
15	☐ Attended	☐ Unattended	☒ Partially Attended	
16	Size Limitation:	Note6 Length (ft):	Width (ft):	Height (ft):
17	Fuel Gas:	☐ Sweet	☐ Sour	☐ Dry
18		☐ Rich	☐ Lower Heating Value (Btu/SCF):	

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Service Conditions (Site and Process) - Customary Units								
19	PROCESS GAS ANALYSIS							
20	SERVICE/STAGE		HP 1st Stage			HP 1st Stage		
21	MOLE PERCENT							
	(NORMAL CASE)				(ALTERNATE CASE Note 5)			
22	Methane	CH ₄	46.38			58.27		
23	Ethylene	C ₂ H ₂	0			0		
24	Ethane	C ₂ H ₆	13.81			12.52		
25	Propylene	C ₃ H ₆	0			0		
26	Propane	C ₃ H ₈	21.57			15.04		
27	Iso-Butane	C ₄ H ₁₀	4.61			3.09		
28	Normal Butane	C ₄ H ₁₀	7.93			5.52		
29	Iso-Pentane	C ₅ H ₁₂	1.88			1.6		
30	Normal Pentane	C ₅ H ₁₂	1.57			1.44		
31	Hexane	C ₆ H ₁₄	0.46			0.61		
32	Heptane +		0.17			0.32		
33	Ammonia	NH ₃	0			0		
34	Air		0			0		
35	Water Vapor	H ₂ O	0.74			0.7		
36	Oxygen	O ₂	0			0		
37	Nitrogen	N	0.03			0.05		
38	Hydrogen	H ₂	0			0		
39	Hydrogen Sulfide	H ₂ S	0			0		
40	Carbon Monoxide	CO	0			0		
41	Carbon Dioxide	CO ₂	0.84			0.86		
42								
43	Total (Percent)		100			100		
44	Molecular Weight or Specific Gravity							
45	Heptane +							
46	Total Mixture		31.97			28.3		
47	Specific Heat at 150°F							
48	Constant Pressure							
49	Constant Volume							
50	Additional Miscellaneous Data							
51	LHV (Btu/SCF)							

Data Sheet - Reciprocating Compressor Package							
Service Conditions (Site and Process) - Customary Units							
52	Mean Rel. Humidity (%)						
53	Compressor Performance						
54		Normal Operating Point	Normal Operating Point	Alternate Operating Point	Alternate Operating Point		
55							
56	Stage Number:	1	2	1	2		
57	Suction Temperature (°F):	122	120	122	120		
58	Suction Pressure (psig):	232	568	232	587.9		
59	Discharge Pressure (psig):	589	1600 (Note 1)	606.9	1600 (Note 1)		
60	Discharge Temperature (°F):	227	277	238	269		
61	Capacity (MMSCFD): Note 7	36.45	28.99	34.75	31.68		
62	Cylinder BHP (Note 8)	1792	1694	1884	1763		
63	Maximum Allowable Cylinder Discharge Temperature (°F):	300					
64	Maximum Allowable After Cooler Discharge Temperature (°F):	120					
65	Pressures Measured at Inlet and Outlet of Package:	232 / 1600 psig					
Notes:							
1. Normal discharge pressure is 1600 psig. During upset conditions, unit will run at higher discharge pressures upto 1800 psig.							
2. Compressor performance values are based on ARIEL Model JGZ / 6 , 12.5" / 7.25" dia. , 6.75" Stroke, 740 RPM							
3. Suction pressure of the 2nd Stage allows for 15 psi pressure drop across HP First Stage Disch. Cooler and 4 psi hydraulic loss.							
4. For alternate operating point , Gas will be recycled to meet inlet acfm.							
5. Alternate case operation of HP Compressors when the VRU compressors are out of service. Data based on HYSYS simulation file "QIT 450 97F-Update with trim Cooler-No VRU.hsc"							
6. For available space, refer to attached H.P. Compressor Building drawing (NGA-PSP-QFE-ND-060-A5-1805 Rev. H3)							
7. Includes 6% tolerance.							
8. Gas horsepower only. Add 50 hp for frame friction loss.							
Revision Log							
Rev	Date	Aprvl	Description	Rev	Date	Aprvl	Description
1	10/19/06	DVC	Issued For Purchase				
				Dwg. No.: NGA-PSP-QFE-ML-651-EO-8636			