



## SPECIFICATION

PROCESS DESIGN AND INTERNALS  
 2 STAGE SUCTION SCRUBBER – ITEM V-101 A/B/C/D  
 FASAM Quotation: P1743IR Item 2.0

Application	:	Separation of liquid and solids from natural gas
Sketch	:	1743.001.2.0
Max flow	:	301385 kg/h (100%)
Min flow	:	120554 kg/h (40%)
Type of separator	:	MC 120-20/CFG-5A-S1-GYIE1-S

Continuous phase	:	Natural gas
Density	:	50,228 kg/m <sup>3</sup>
Viscosity	:	0,01 cP
Operating pressure	:	61 bar g
Operating temperature	:	46° C

Discontinuous phases	:	Liquid and solids
Density liquid	:	~658 kg/m <sup>3</sup>
Viscosity liquid	:	0,28 cP
Amount of liquid	:	15 kg/h
Density solids	:	~1500 kg/m <sup>3</sup>
Amount of solids	:	~5 kg/h
1.-stage	:	120 multi cyclones Ø 2"
2.-stage	:	20 coalescer cartridges
Type	:	CFG-5A-9,1-GYIE1-S
Dimensions	:	152 x 915 mm long
Flow	:	in to out

Differential pressure m.c.	:	> 5 psi
Differential pressure coalescer	:	0,09 bar @ wet condition
Total differential pressure	:	> 7 psi
Efficiency:		
5 micron liquids droplets	:	> 99 % at min. and max flow
5 micron solid particles	:	> 99 % at min. and max flow

7 psi = 0.48 bar ≈ 0.5 bar  
 0.17 bar.

## FILTRATION · SEPARATION · PURIFICATION



Design pressure:	99 barg
Design temperature:	+85 °C
Cyclones, pipe risers & Tube-sheets materials:	SS316-L
Corrosion allowance:	3,2 mm
Vessel internal diameter:	1000 mm
TL-TL	4500 mm.
Inlet/Outlet:	20", 800#
Design code:	ASME SEC VIII Div. 1

### NOTES:

- 1- Shell & Head materials are Nace A-516 Gr.70
- 2- All nozzles > 2 inch are Self reinforced Nace A-105 #
- 3- Assumed differential pressure to calculate thk of tube-sheet is based on 10 psi at first stage and 20 psi at second stage to protect supports due to increasing pressure drop in coalescers from deformation.
- 4- To protect Cyclones due to abrasion from abnormal solid particles, Plasma Nitriding will be done.
- 5- To protect Coalescers in second stage from liquid (HLL = 300 mm), the length of filter carry pipes are 400 mm.