SCITEK

Rig Mass Flow Rate Calculations

Please Enter Parameters in highlighted boxes below

Engine Data File		
Ambient Conditions		
Air Temperature	**5**	**[C]**
Atmospheric Pressure	**975**	**[mBar]**
Air Humidity	**95**	**[%]**

Viper Engine Parameters		
Engine Air Intake Mass Flow	**18.7**	**[Kg/s]**
Butane Flow Rate	**1732**	**[Ltr/h]**
Engine Speed	**12150**	**[RPM]**
ETC	**650**	**[C]**
Gas Delivery System Data File		
Gas Delivery System		
Mixed Gas (Fuel) Mass Flow rate	**0.017**	**[Kg/s]**
Oxygen Mass Flow rate	**0.155**	**[Kg/s]**

Please do not change anything in this box

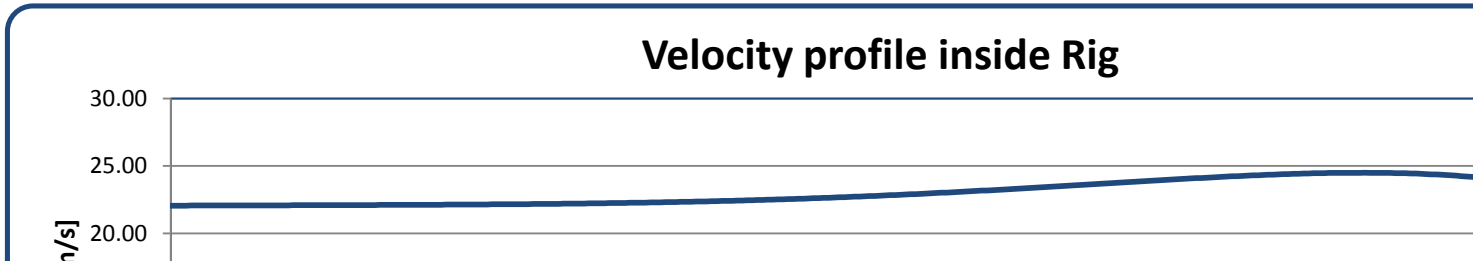
Test Date and Time =	29.10.2014
Calculated Parameters	
Air density	1.217898
Liquid Butane density	584
Butane mass Flow rate	0.2809689
Air Fuel Ratio	79.232633

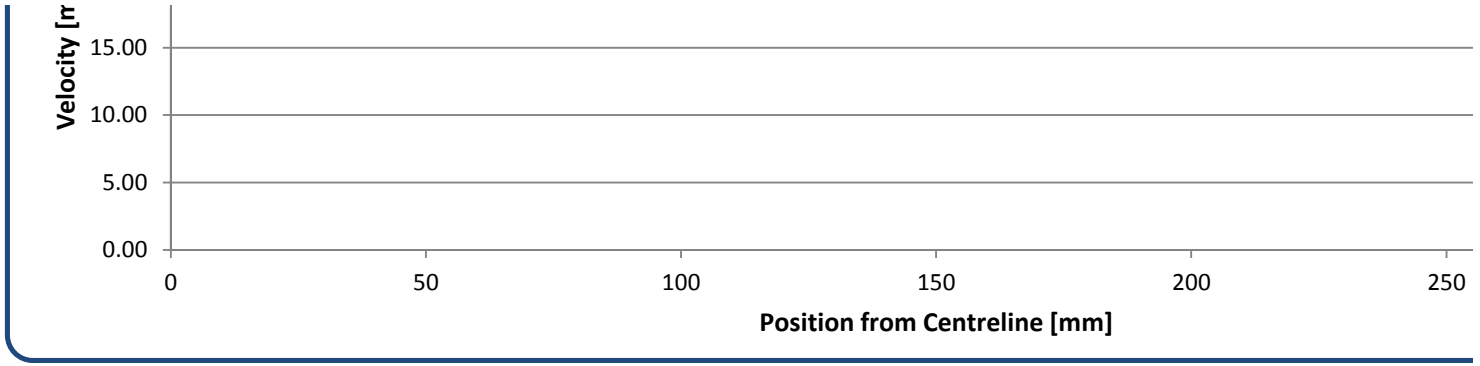
Calculated Exhaust gas properties (Reaction I	
Exhaust products density	0.389

Pitot Traverse Results	
Rig Gas flow rate - Integrated	2.4597914

Total Rig Mass flow	2.6317914

Rig Gas Temperature as read from TC 11	
Gas Temperature	**514**




Velocity [m
15.00
10.00
5.00
0.00
0
50
100
150
200
250
Position from Centreline [mm]

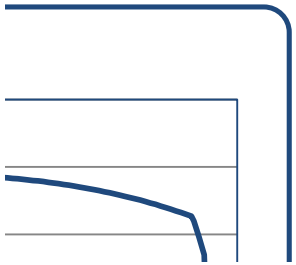
11:50:40.4
[Kg/m3]
[Kg/m3]
[Kg/s]
[ ]
Engines)
[Kg/m3]
[Kg/s]
[Kg/s]
[C]

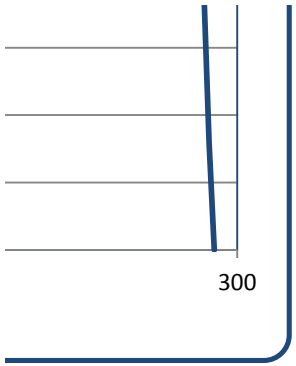
Bruce Ewan to fill in

Note

Manual for viper 201 gives figures for fuel flow rate to be as follows at maximum power

Fuel Flow	2035	lb/hr	to	2920	lb/hr
	925	Kg/hr		1327.273	Kg/hr
	1156.25	ltr/hr		1659.091	ltr/hr




300