

POLARIS ULTRA -96

Engine Basic Spec

Bore	66.5mm
Stroke	65mm
Con-Rod	125mm
Total cc	677.15cc
Bore/Stroke Ratio	1.02
Rpm Peak HP	8200rpm
HP,max	105.7hp
Rpm Peak Torque	7500rpm
Torque,max	70.4lb-ft
BMEP Hp Peak	121.8psi
BMEP Hp peak	8.39bar
Piston Speed	17.69m/s
Piston Speed	3483ft/min
Fuel Flow	67.6
Air Flow	166.1
A/F	11.3
BSFC	0.64

Head Basic Spec

Geometric CR/1	12.54
Trapped CR/1	6.86
Deck Clearance	0.5mm
Head Step Cut	1.0mm
Total Squish Clea.	1.8mm
Max Squish Clea.	3.1mm
Head Bore	66.87mm
Used Cylinder gasket	0.5mm
Est. Crank Press.	151psi
Est. Octan R+M/2	91

Head Volume

Deck Volume	1.74
Port Closed Vol.	114.62
Head cc Flat Plate	24.7
Head cc Installed	19.55

Head Design

Type	central
Bowl Width + ble. rad.	46.8mm
Squish Width	10.2mm
Squish Angle	18°
Bowl Radius	25
SAR	0.51
Total deep	17.14mm
Head width	21.4mm

Head Squish Action

Squish Velocity	19.0m/s
Squish Pressure Ratio	1.059
At deg btdc	11.39°
Kinetic Energy	3.66mj

Std. Piston Spec

Skirt Length	72.15mm
Pin c. to up length	32.5mm
Pin c. to down length	37mm
Pin c. to trans inlet	16.36mm
Wrist-Pin diameter	18mm
Thickness of Rings	2 * 1.2
Dome Height	2.67
Dome average Radius	
Dome Ang under Sq.band	10°
Dome volyme,cc	6.87
Weight Pist. + Ring	307g

Intake Port Spec

Transfers Spec

Main port roof to top	51.25mm
M-port liner width	25.7mm
M-port chordal width	24.7mm
M-port angle up	0°
5-Port roof to top	51.25mm
5-port liner width	22.6mm
5-port chordal width	22.2mm
5-port angle up	0°
Boost Port roof to top	51.25
Boost Port angle up	38
Total area	1604mm ²
Time-Area	12.05
S-sg mm	2.72
Good to bmep/hp	over design
Opens	117.21°
Duration	125.6°
TAW T/B ratio (ch)	1.69
TAW T/B ratio liner	1.81
Trans Inlet	109.7

Lower radius	14
Max width	43.8mm
Blowdown width	42.3mm
% of bore width	65.9%
Port Opens	83.39°
Duration	193.22°
Blowdown deg.	33.8°
Total Area	1372mm ²
Blowdown Area	853mm ²
Lower Area	519mm ²
Time-Area	15.61
Time-Area,blowdown	10.57
S-sg mm	3.52
Angle-Area	7.69
Estimated HP	129.3hp
Estimated BMEP	151psi
Est. Blowdown HP	129.3hp
Est. Blowdown BMEP	151psi
Length of port	36.7mm
I.D of port	42mm
Estimated port i.d	41.8mm
Exh. gas velocity est.	146fps

Carburator Spec

Typ	VM38
Main Jet	300
Mj based on baromet.	30.32
Mj based on air temp,c	19+
Jet Needle	
Needle Jet	
Throttle valve cut.	
Pilot Jet	
Air Screw	

Ignition Spec

Btdc at 3000 rpm,mm	
Btdc at 3000 rpm,deg	°
Btdc at 7500 rpm,mm	
Btdc at 7500 rpm,deg	°
Spark plug	
Spark plug gap	
Cdi box id. #	
Alternator output	watt

MULLE Thursday 4 January
1996

Exhaust Spec.

Dist. to top	33.5mm
Upper radius	16