

SCUDERI™ Split-Cycle Engine Performance Data

1,400 RPM and 4,000 RPM
Maximum Load



SCUDERI
ENGINE

Performance Comparison – SCUDERI™ Split-Cycle Engine

1,400 RPM – Maximum Load (Constant Knock Margin – 40% Turbo Efficiency)

Boost Pressure [bar-abs]	NA	1.7	2.0	2.3	2.6	2.9	3.2
Engine Displacement (liters)	1.11	0.97	0.91	0.87	0.83	0.81	0.79
Expander Displacement (liters)	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Compressor Displacement (liters)	0.59	0.45	0.39	0.35	0.31	0.29	0.27
Reduction from NA liters-Compressor	—	0.14	0.20	0.24	0.28	0.30	0.32
Percent Decrease	—	23.6	34.1	41.5	47.1	51.3	55.0
Peak Cylinder Pressure Compressor [bar]	50.0	52.5	54.3	55.9	57.4	59.0	60.0
Peak Cylinder Pressure Expander [bar]	60.0	77.5	79.3	81.1	82.9	85.1	86.8
Mass Flow Air (kg/hr)	48.0	63.35	64.81	66.31	67.81	69.56	70.95
Mass Flow Fuel (kg/hr)	3.2	4.25	4.36	4.45	4.55	4.67	4.76
Equivalence Ratio	1	1	1	1	1	1	1
Brake Mean Effective Pressure [bar]	9.3	15.0	16.8	18.4	19.8	21.1	22.3
BMEP Increase [bar]	—	5.7	7.5	9.1	10.5	11.8	13.0
Percent Increase	—	61.0%	80.8%	98.0%	112.7%	126.7%	139.7%
Brake Specific Fuel Consumption (g/kW.hr)	269	251	244	240	237	235	233
Change (g/kW.hr)	—	18.2	24.6	29.3	32.0	34.0	35.0
Percent Decrease	—	6.8%	9.1%	10.9%	11.9%	12.7%	13.4%

Specific Power – SCUDERI™ Split-Cycle Engine

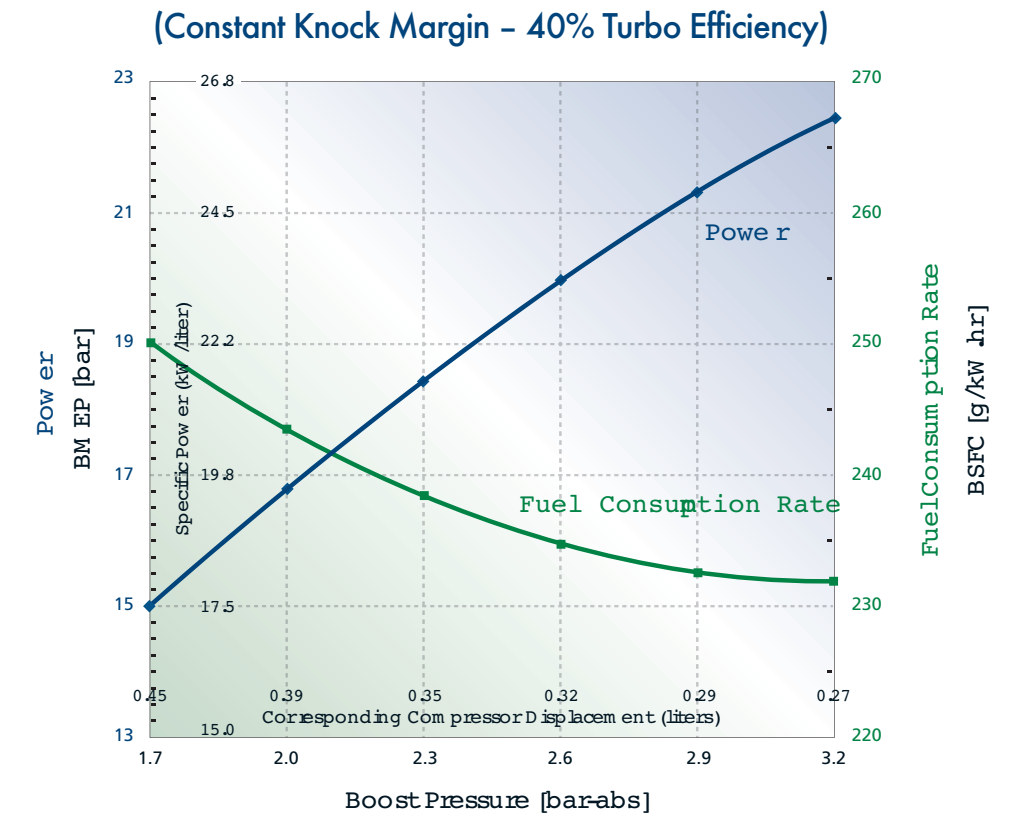
1,400 RPM – Maximum Load (Constant Knock Margin – 40% Turbo Efficiency)

Boost Pressure [bar-abs]	NA	1.7	2.0	2.3	2.6	2.9	3.2
Specific Power (kW/liter)	11	17	20	21	23	25	26
Specific Power Increase (kW/liter)	—	6.6	8.7	10.6	12.2	13.7	15.1
Percent Increase	—	60.3%	80.0%	97.0%	111.7%	125.7%	138.6%

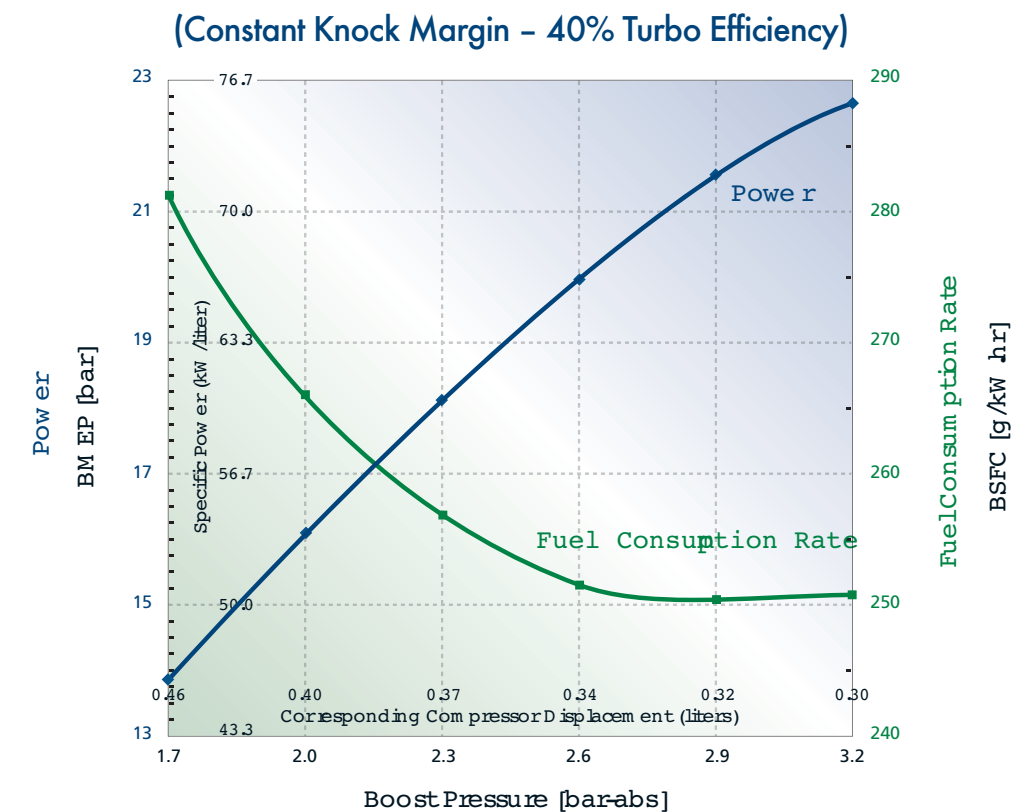
4,000 RPM – Maximum Load (Constant Knock Margin – 40% Turbo Efficiency)

Boost Pressure [bar-abs]	NA	1.7	2.0	2.3	2.6	2.9	3.2
Specific Power (kW/liter)	30	45	53	61	68	72	75
Specific Power Increase (kW/liter)	—	15.3	23.6	31.3	38.3	42.3	45.3
Percent Increase	—	51.4%	79.0%	105.0%	129.0%	142.0%	152.0%

1,400 RPM Maximum Load SCUDERI™ Split-Cycle Engine



4,000 RPM Maximum Load SCUDERI™ Split-Cycle Engine





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