

**Supplemental Data:**

**Table S1.** Brake thermal efficiency (%), brake specific fuel consumption (g/bkW-hr) and brake specific emissions (g/bkW-hr) of THC, CO, NO<sub>x</sub> and CH<sub>2</sub>O for all fuel blends tested at 50%, 75% and 100% load and 2400 RPM.

50% Load	Efficiency [%]	BSFC [g/kWhr]	BSTHC [g/kWhr]	BSCO [g/kWhr]	BSNO <sub>x</sub> [g/kWhr]	BSCH <sub>2</sub> O [g/kWhr]	BSPM [g/kWhr]
Certification Diesel	33.98%	248.1	0.29	1.34	5.75	0.039	0.07
1 Std Dev of Cert Diesel Avg	+/- 1.55	+/- 11.7	+/- 0.08	+/- 0.17	+/- 0.71	+/- 0.006	+/- 0.02
Gu02	35.28%	240.6	0.35	1.47	5.21	0.041	0.06
DMP02	35.93%	235.8	0.32	1.54	4.83	0.040	0.03
DMP05	34.43%	248.2	0.19	1.48	6.29	n/a	0.08
pCr02	35.65%	237.7	0.32	1.61	4.83	0.041	0.02
MMP02	35.48%	239.6	0.38	1.57	5.01	0.045	0.06
MA02	35.37%	238.4	0.37	1.41	5.25	0.040	0.04
MAP02	35.59%	237.9	0.36	1.54	4.90	0.042	0.04
PG05	31.99%	263.6	0.30	1.44	6.67	0.039	0.06
Comp06	32.16%	261.7	0.44	1.39	6.77	0.042	n/a

75% Load	Efficiency	BSFC	BSTHC	BSCO	BSNO <sub>x</sub>	BSCH <sub>2</sub> O	BSPM
Certification Diesel	37.20%	226.2	0.20	0.84	4.55	0.018	0.07
1 Std Dev of Cert Diesel Avg	+/- 0.58	+/- 3.6	+/- 0.05	+/- 0.13	+/- 0.46	+/- 0.004	+/- 0.03
Gu02	37.56%	226.0	0.24	0.91	4.37	0.020	0.05
DMP02	37.65%	225.0	0.23	0.99	4.12	0.020	0.03
DMP05	37.65%	227.0	0.14	0.77	5.23	n/a	0.07
pCr02	37.47%	226.1	0.22	1.02	4.06	0.020	0.02
MMP02	37.68%	225.6	0.26	0.96	4.23	0.022	0.02
MA02	37.40%	225.4	0.26	0.96	4.44	0.021	0.05
MAP02	37.53%	225.6	0.24	1.00	4.15	0.021	0.02
PG05	35.81%	235.5	0.19	0.72	5.40	0.016	0.06
Comp06	35.85%	234.8	0.23	0.68	5.90	0.016	0.07

100% Load	Efficiency	BSFC	BSTHC	BSCO	BSNO <sub>x</sub>	BSCH <sub>2</sub> O	BSPM
Certification Diesel	37.90%	222.1	0.16	0.61	5.29	0.015	0.04
1 Std Dev of Cert Diesel Avg	+/- 1.0	+/- 5.8	+/- 0.04	+/- 0.10	+/- 0.81	+/- 0.006	+/- 0.02
Gu02	38.18%	222.3	0.19	0.69	4.66	0.017	0.02
DMP02	38.30%	221.2	0.18	0.71	4.39	0.015	0.01
DMP05	39.16%	218.3	0.15	0.51	5.60	n/a	0.06
pCr02	38.38%	220.8	0.17	0.70	4.55	0.015	0.03
MMP02	38.42%	221.2	0.20	0.70	4.47	0.017	0.01
MA02	38.10%	221.3	0.20	0.71	4.69	0.017	0.03
MAP02	38.34%	220.9	0.19	0.72	4.41	0.016	0.02
PG05	37.47%	225.0	0.17	0.49	5.88	0.013	0.04
Comp06	36.98%	227.6	0.18	0.50	6.39	0.013	0.04