

YORKSHIREMAN LOW NOX MODEL				YSLN	3000	IE
Boiler working pressure	barg	10.34	149.93	psig		
Saturation Temperature	degC	185.4				
Ambient Air Temp	degC	21				
REQUIRED BOILER DUTY 3000	Percentage Load	%	100	75	50	25
	Heat Output	kw	1881.2	1410.9	940.598	470.299
	F&A 100DegC	kg/h	3000	2250	1500	750
		lb/h	6615	4961.3	3307.5	1653.8
Actual Boiler Output with Feed Water Temperature of 85 degC	kg/hr	2791.6	2093.7	1395.8	697.9	
	lb/hr	6155.5	4616.6	3077.8	1538.9	

FUEL HEATING VALUES		
Natural Gas		
GCV	52.97 Mj/kg	40.5 MJ/Ncu mtre
NCV	47.75 Mj/kg	36.6 MJ/Ncu mtre
ClassA2 and D-Fuel Oil		
GCV	46.89 Mj/kg	
NCV	43.98 Mj/kg	

BOILER PERFORMANCE		ClassA2 and D-Fuel Oil				Natural Gas			
Percentage Load	%	100	75	50	25	100	75	50	25
Nett Heat Release	mw/m ³	1.15	0.92	0.61	0.32	1.15	0.96	0.64	0.33
Nett Heat Input	mw	2.01	1.61	1.08	0.55	2.03	1.68	1.13	0.58
Gross Heat Release Rate	mw/m ³	1.21				1.27			
Front Smoke Box Temperature	deg C	380	352	317	271	405	373	335	285
Boiler Outlet Temperature	deg C	222	214	205	195	226	218	208	197
ECONOMISER FITTED TO BOILER ROWS 6									
Economiser Gas Outlet Temperature	degC	133	129	126	125	134	131	127	125
Econ Feed Water Outlet Temperature	degC	110	110	109	108	110	110	110	110
Economiser Duty	kW	86	64	42	20	86	64	42	20
Total Gas Weight	kg/h	3019	2358	1646	879	2969	2335	1659	914
Max CO ₂ Emissions	kg/hr	516				404			
Boiler Efficiency on GCV with Econ	%	88.04	87.68	86.99	84.84	84.37	84.00	83.27	81.01
Boiler Efficiency on NCV with Econ	%	93.41	93.02	92.28	89.99	92.83	92.42	91.60	89.11
Boiler Efficiency on GCV with Econ	%	90.28	90.02	89.45	87.74	87.59	87.38	86.80	85.19
Boiler Efficiency on NCV with Econ	%	94.73	94.40	93.74	91.71	94.57	94.25	93.52	91.37
Total Draught Loss	inchwg	4.16	2.30	1.11	0.31	4.11	2.38	1.18	0.35
	mbar	10.41	5.75	2.77	0.79	10.29	5.96	2.96	0.89
Combustion air volume	Sm ³ /s	0.65	0.51	0.35	0.19	0.64	0.50	0.36	0.20
Exit Gas Volume from Economiser	Am ³ /s	0.96	0.75	0.52	0.28	0.95	0.74	0.52	0.29
Fuel consumption	kg/h	164.07	123.56	83.03	42.57	151.56	114.17	76.79	39.46
	litre/h	191.10	143.92	96.71	49.58	208.99	157.44	105.88	54.41
						198.02	149.17	100.32	51.56
	kW/hr Gross		2137.3	1609.7	1081.6	554.5	2230.3	1680.1	1130.0

TYPICAL FUEL COSTS	
Annual Boiler Loading	
Average boiler Load	0 kg/hr
No. Hours/Day	24 hr
No days /week	7 days
No weeks	52 wks
ClassA2 and D-Fuel Oil	54 p/litre
Cost per day	£ #N/A
Cost per Week	£ #N/A
Cost per Year	£ #N/A
Cost per tonne of Steam	£ #N/A
Natural Gas	
	3.75 p/kWh
Cost per day	£ #N/A
Cost per Week	£ #N/A
Cost per Year	£ #N/A
Cost per tonne of Steam	£ #N/A

Steam Release Area	m ²	5.22	Duct / chimney size @ velocity of 12 m/s	mm	320	inside diameter
Steam Release Rate	m/sec	0.0256	Duct / chimney size @ velocity of 15 m/s	mm	286	inside diameter

Yorkshireman Boiler Performance Data