

YORKSHIREMAN LOW NOX MODEL				YSLN	13750	IE
----------------------------	--	--	--	------	-------	----

Boiler working pressure	barg	10.34	149.93	psig
Saturation Temperature	degC	185.4		
Ambient Air Temp	degC	25		

REQUIRED BOILER DUTY	Percentage Load	%	100	75	50	20
	Heat Output	kw	8622.14	6466.61	4311.07	1724.43
	F&A 100DegC	kg/h	13750	10312.5	6875	2750
		lb/h	30319	22739	15159	6063.8
Actual Boiler Output with Feed Water Temperature of		kg/hr	12794.9	9596.2	6397.5	2559.0
		lb/hr	28213	21160	14106	5642.6

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	20	100	75	50	20
Nett Heat Release	mw/m ³	1.11	0.83	0.56	0.23	1.11	0.84	0.56	0.23
Nett Heat Input	mw	9.13	6.86	4.58	1.86	9.18	6.89	4.61	1.87
Gross Heat Release Rate	mw/m ³	1.17				1.23			
Front Smoke Box Temperature	deg C	357	330	297	244	378	348	312	253
Boiler Outlet Temperature	deg C	213	207	200	191	216	209	202	191

ECONOMISER FITTED TO BOILER		ROWS	6						
Economiser Gas Outlet Temperature	degC	130	127	124	124	131	128	125	123
Econ Feed Water Outlet Temperature	degC	108	108	108	106	108	108	108	107
Economiser Duty	kW	364	271	178	67	364	271	178	67
Total Gas Weight	kg/h	13679	10659	7403	3120	13441	10543	7453	3240
Max CO ₂ Emissions	kg/hr	2338				1827			

Boiler Efficiency on GCV with Econ	%	89.06	88.91	88.67	87.62	85.41	85.26	84.97	83.83	BS845
Boiler Efficiency on NCV with Econ	%	94.49	94.33	94.08	92.95	93.98	93.81	93.50	92.23	BS845
Boiler Efficiency on GCV with Econ	%	90.59	90.52	90.36	89.61	87.88	87.85	87.69	87.03	EN12953
Boiler Efficiency on NCV with Econ	%	95.09	94.97	94.74	93.74	94.96	94.84	94.57	93.49	EN12953

Total Draught Loss	inchwg	5.72	3.23	1.55	0.28	5.69	3.33	1.65	0.31
	mbar	14.30	8.07	3.87	0.70	14.24	8.34	4.12	0.78

Combustion air volume	Sm ³ /s	2.93	2.29	1.59	0.67	2.89	2.27	1.61	0.70
Exit Gas Volume from Economiser	Am ³ /s	4.33	3.35	2.31	0.97	4.27	3.33	2.33	1.01

Fuel consumption	kg/h	743.44	558.48	373.33	151.13	686.17	515.55	344.86	139.83	kg/h
	litre/h	865.93	650.50	434.84	176.03	946.20	710.92	475.55	192.82	Sm ³ /h
						896.51	673.59	450.57	182.69	Nm ³ /h
	kW/hr Gross		9684.6	7275.2	4863.3	1968.7	10097.7	7586.8	5074.9	2057.7

TYPICAL FUEL COSTS	
Annual Boiler Loading	
Average boiler Load	0 kg/hr
No. Hours/Day	0 hr
No days /week	0 days
No weeks	0 wks

ClassA2 and D-Fuel Oil		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		0 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	15.76	Duct / chimney size @ velocity of 12 m/s	mm	678	inside diameter
Steam Release Rate	m/sec	0.0389	Duct / chimney size @ velocity of 15 m/s	mm	607	inside diameter

Yorkshireman Boiler Performance Data