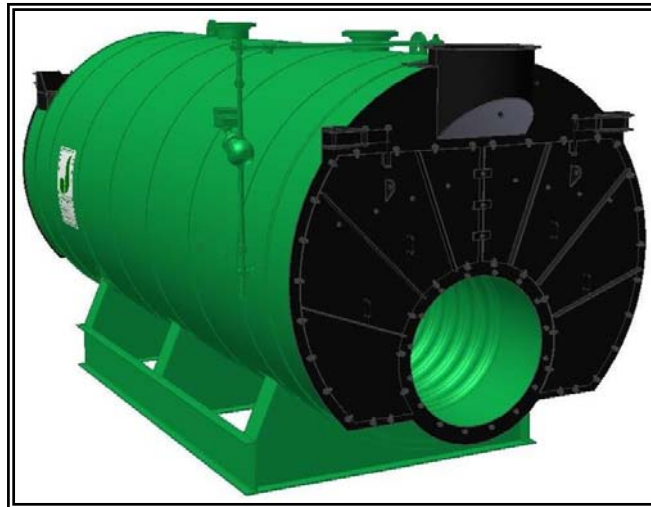




## MODEL: PFTX 400-4

### 4-Pass Hot Water Packaged Firetube Boiler



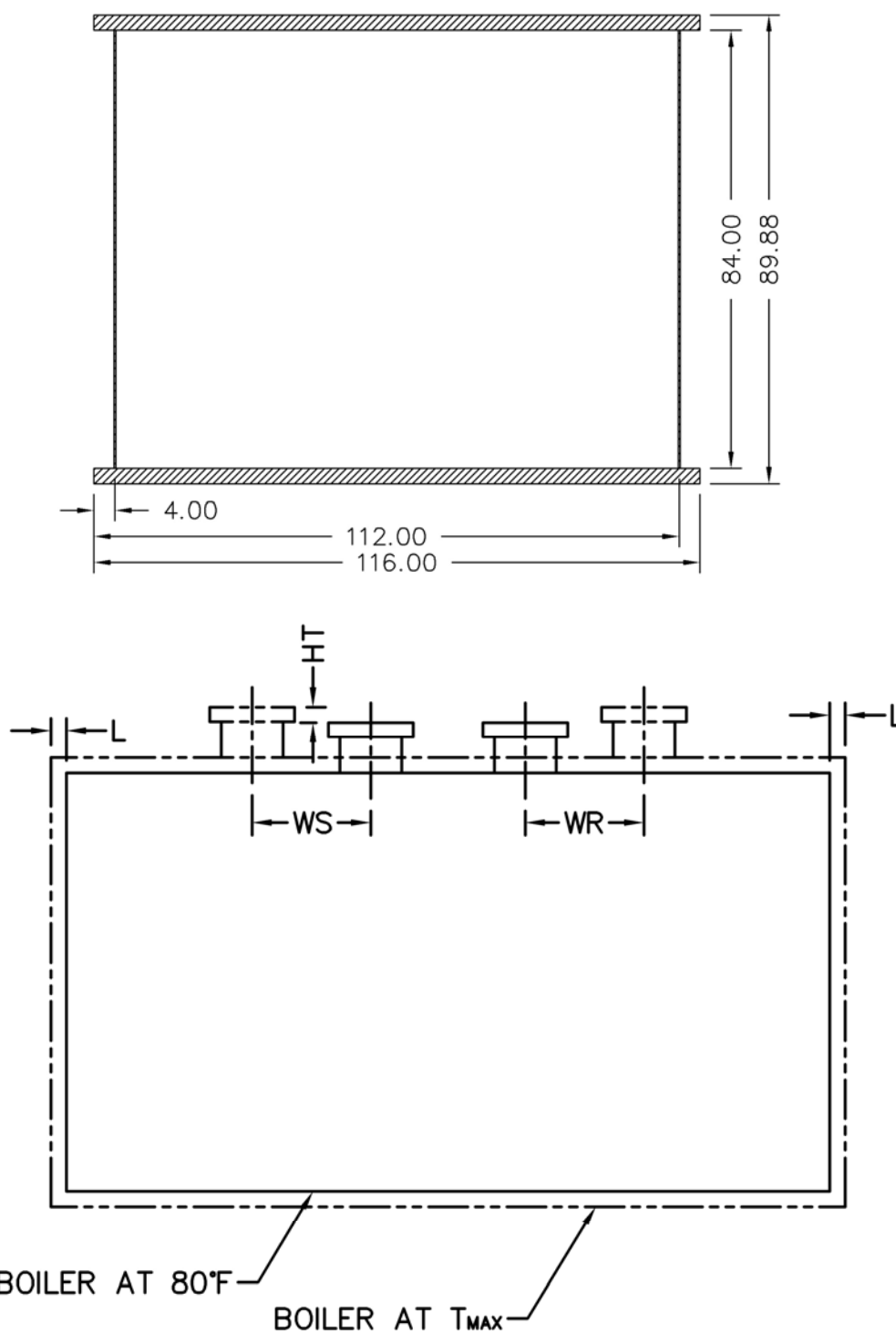
### Ratings & Performance Data

Horsepower 400		Natural Gas Flow, SCFH (1,000 Btu/ft <sup>3</sup> )**	15,641			
Total Heating Surface, ft <sup>2</sup>	2,026	Combustion Air (15% Excess), SCFM***	2,862			
Furnace Outside Diameter, in	42.0	Flue Gas Flow Rate, lb/hr***	13,640			
Furnace Heat Release Rate, Btu/ft <sup>3</sup> hr**	154,000	Stack Flue Gas Velocity, ft/min***	1,623			
Total Combustion Volume, ft <sup>3</sup>	148.0	#2 Oil Flow, gal/hr (140,000 Btu/gal)**	107.9			
Total Heat Release Rate, Btu/ft <sup>3</sup> hr**	106,000	#6 Oil Flow, gal/hr (150,000 Btu/gal)**	100.0			
Water Content Flooded, gal	2,995	Flue Gas Side Pressure Drop, in. H <sub>2</sub> O	3.9			
Approx. Dry Weight 30#, lb	27,400	Approx. Operating Weight 30#, lb	52,700			
Approx. Dry Weight 60#, lb	27,500	Approx. Operating Weight 60#, lb	52,800			
Approx. Dry Weight 125#, lb	29,000	Approx. Operating Weight 125#, lb	54,300			
<b>Performance Data</b>						
Operating Temperature (F)	Natural Gas		#2 Oil		#6 Oil	
	Stack Temp (F)	%Eff	Stack Temp	%Eff	Stack Temp (F)	%Eff
180	249	86.1	262	89.2	275	89.7
200	267	85.6	282	88.7	295	89.2
220	288	85.1	301	88.2	315	88.7
240	308	84.6	321	87.7	335	88.2
*Based on 20°F difference in supply/return, ** Values calculated at 200°F operating temperature, ***Calculated Firing Natural Gas						



# MODEL: PFTX 400-4

## Base Diagram

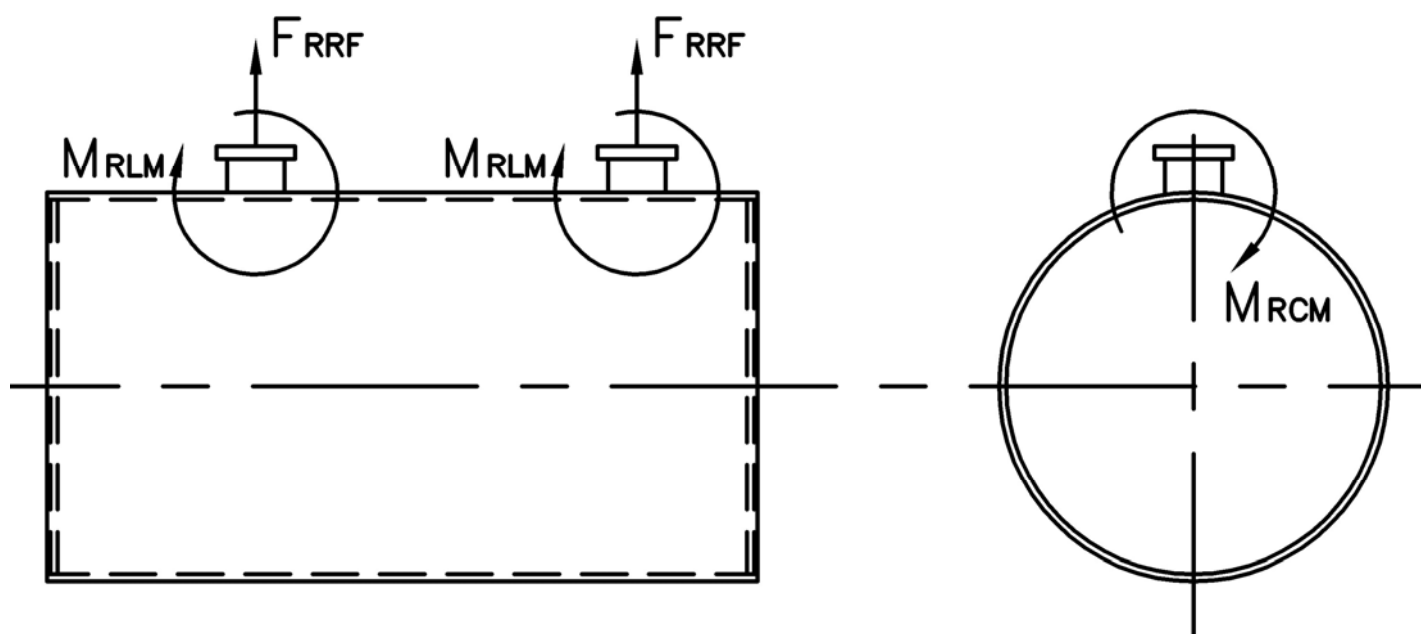


Thermal Expansion				
Metal $T_{MAX}$ (F)	180	200	220	240
L (in)	0.052	0.062	0.072	0.083
WS (in)	0.016	0.019	0.022	0.025
WR (in)	0.024	0.029	0.034	0.038
HT (in)	0.056	0.067	0.078	0.089

# MODEL: PFTX 400-4

## Nozzle Loadings

Maximum Allowable Load on Outlet & Return Nozzles				
	30# Design	60# Design	125# Design	160# Design
$F_{RRF}$ , lb	5,487	4,487	3,099	5,495
$M_{RCM}$ , in-lb	32,911	32,911	32,911	60,265
$M_{RLM}$ , in-lb	46,547	38,063	26,293	47,425



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