

From: **Richard Hildebrand** RichardJH@LCEC.com
 Subject: add to 113071 and name BURNER DESIGN & TECHNICAL DATA
 Date: September 2, 2021 at 9:28 AM
 To: Susan Medford susanm@lcec.com



BURNER DESIGN & TECHNICAL DATA

Boiler Conditions				Site Conditions			
Boiler model	NB-500D-125			Burner location		Outdoors	
Capacity	PPH	186,000		Code compliance	Burner	NFPA 85	
Operating conditions	psig / °F	310 / 590			Burner Fuel Piping	B31.1	
Furnace dimension W x H	ft	6.69	10.11	Control panel enclosure		NEMA	4X
L _{Total} / L _{EFF}	ft	41.33	31	Area classification	Burner/ Fuel Train		Non-Hazardous
					Control Panel		Non-Hazardous
				Altitude		FASL	482
				Instrument air supply		psig	80
				Combustion air temperature		°F	0 - 105
Burner				Model	P-285-G-43-2329		
Estimated Windbox dimensions W x H x D				in.	96 x 96 x 96		
Estimated FD Fan motor				HP	By CB-Nebraska Boiler		
Fuel				Natural Gas			
Ignition fuel				Natural gas			
Heat Input 100% MCR				MMBTUH	284.7		
Boiler / Economizer pressure drop				in. WC	20.36		
Burner & Windbox pressure drop				in. WC	10		
Air handling equipment pressure drop				in. WC	4		
Combustion air temperature				° F	80		
Excess air				%	15		
FGR rate				%	17		
FGR temperature				° F	306		
Turndown ratio				10 to 1			
Available fuel pressure at train inlet				psig	30-40		
Above information is preliminary only and will be confirmed on drawings issued for construction.							
Guarantee				Natural Gas			
NO_x				lb /MMBtu	0.0386		11 lbs/hr
CO				lb /MMBtu	0.037		
SO₂ (Not burner dependant)				lb /MMBtu	0.0006		
PM/PM₁₀				lb /MMBtu	0.0099		
VOC				lb /MMBtu	0.0049		
Opacity				%	< 5		
Guaranteed emission from 25% to 100% MCR corrected to 3 %O ₂ on a dry basis and based on NATCOM technician is required for start-up and adjustments. Particulate is exclusive of any particulates in combustion air or other sources of residual particulates from material. Do not use the above Burner model designation for emission permit application.							
Fuel Gas Analysis		NG %v					
Methane	CH ₄	95.98					
Ethane	C ₂ H ₆	2.5					
Propane	C ₃ H ₈	0.46					
N & I-Butane	C ₄ H ₁₀	0.15					
N & I-Pentane	C ₅ H ₁₂	0.07					
N-Hexane	C ₆ H ₁₄	0.01					
Nitrogen	N ₂	0.30					
Carbon Dioxide	CO ₂	0.53					
Hydrogen Sulfide	H ₂ S	< 0.215 grain/100SCF					
HHV	Btu/SCF	1,032					
Temp.	°F	60					
Pressure	psig	30-40					