

# Biogas Gas Enclosed Flare Design Data Form

## 1.1. Quote Information

Customer Information			
Name		Company	
Business Title			
Email		Phone Number:	
Equipment Information			
Quantity:		Ship to Location (City, State, Zip)	
Proposal Due Date		Freight Terms	<input checked="" type="checkbox"/> EXW <input type="checkbox"/> FCA <input type="checkbox"/> FOB <input type="checkbox"/> CIF <input type="checkbox"/> Other _____
Potential Order Date:		Preferred Ship Date:	
Additional Comments			

## 1.2 Process Conditions

Process Data	Typical	Custom	Custom
Case Description		CASE 1	CASE 2
Inlet Fluid Composition and Conditions (recommended for most accurate sizing)			
Methane (CH <sub>4</sub> )	50%		
Carbon dioxide (CO <sub>2</sub> )	50%		
Water Vapor (H <sub>2</sub> O)			
Hydrogen Sulfide (H <sub>2</sub> S) (PPMV)			
Gas Inlet Pressure (inches WC)	5-6		
Gas Inlet Min/Max Temp (°F)	100		
Gas Inlet Flowrate (SCFM)	300-5500		
Turndown	10-1		
<b>Emission Required</b>			
Destruction Efficiency Required [%]	98%		
CO Emissions (lb./MMBtu)	0.2		
NO <sub>x</sub> Emissions (lb./MMBtu)	0.06		
Fuel Gas Characteristics for Pilot			
	Typical	Custom	
Inlet Fluid Composition	Natural gas / Propane	Attach Composition	
Gas Inlet Pressure (PSIG)	20		
Gas Inlet Min/Max Temp (°F)	100		

## 1.3 Environmental/Structural Conditions

Site Conditions	
Site Elevation (Ft)	
Ambient Temperature	
Humidity [%]	
Design Wind Speed	
Seismic Parameters	

## 1.4 Electrical Design

Electrical Design		
	Typical	Customer Requirement
Area Classification	Unclassified	
Power	120V/1ph/60hZ	
Programmable Logic Controller	Allen Bradley Compact Logix / Siemens	
HMI	6 INCH Color Display	
Panel Box	NEMA 4- Ship Loose	
Communication	Ethernet	
Operation	Local/Remote	

## 1.5 Enclosed Flare Details

Enclosed Flare Design		
	Typical	Customer Requirement
Stack Material of Construction	A-36	
Refractory	2 inch Ceramic Blanket	
Ladder and Platform -Ship Loose	Not Included	
Burner Type	Anti- Flashback	
Air Dampers	Included	
Pilot	Included	
Flame Recognition	UV Sensor	
Paint	Inorganic Zinc Primer	
Additional Ship Loose Accessories		
	Typical	Customer Requirement
Pilot gas Train	Ship Loose	
Waste Gas Shutoff Valve	Included – CS Body/SST Trim	
Waste Gas Flame Arrester	Included – AL/AL Trim	
Knock Out Drum	Not Included – HDPE?	
Purge Blower	Included	

## 1.6 Gas Blower Skid (if required)

Process Data	Typical	Custom	Custom
Case Description		CASE 1	CASE 2
Inlet Fluid Composition and Conditions (recommended for most accurate sizing)			

Methane (CH <sub>4</sub> )	50%		
Carbon dioxide (CO <sub>2</sub> )	50%		
Water Vapor (H <sub>2</sub> O)			
Gas Inlet Pressure (inches WC)	SPECIFY		
Gas Inlet Min/Max Temp (°F)	100		
Gas Inlet Flowrate (SCFM)	300-5500		
Turndown	10-1		
Redundancy	100%		
Skid Mounted	Yes		
Area Classification	Unclassified		
VFD	Included		
Power	480V/3ph/60hZ		

## 1.7 Preliminary Sizing Chart

Flare Outer Diameter (ft.)	Height (ft.)	Flow Rate (SCFM)
3.5	30	300
4	40	400
5	40	650
6	40	950
8	40	1300-1750
9	40	2225
10	40	2800
10	50	3400
12	50	3900-5500

### Notes:

- Gas composition is listed as general Biogas composition. Flowrate and pressure drop results may change based on specific composition per application
- Gas temperature is listed as general Biogas temperature. Blower sizing will increase if temperature is elevated above what is listed in chart
- Consult Applications Engineering for sizing information