

- 1,000 MCF / day capacity (~1,350 BTU/cu ft input)
- 7.4 gal of NGL / MCF processed (~1,800 BTU/cu ft input)
- High quality lean, dry methane output (Cummins MN 70+)
- Rapidly deployed & redeployed (48 hrs, typical)
- Scalable via paralleled units
- Turndown to 400 MCF / day
- Ethane is rejected (tunable down to as low as 2%)
- Built onto 48' flatbed trailer with separate (optional) trailer-mounted generator



Description

The **Flarecatcher 1000** is a modular gas-plant that processes liquid-rich associated gas at the oil well, or at centralized gas processing locations. It reduces or eliminates flaring, enabling gas monetization and reducing environmental footprint.

Raw associated gas is first filtered, compressed, and dehumidified. Mechanical **cascade** refrigeration then cools the gas to **between -50C (-58F) and -65C (-85F)**, liquefying C3+ components. A sophisticated separation system then dissociates the gas into 3 streams: **Y-Grade NGLs** (to be transported to market or further processed in Pioneer Energy's distillation system to produce **LPG** and **condensate**), a high-quality **lean methane** stream (to be used on-site to generate electricity or to be converted to **CNG** or **LNG**), and low-value **rejected ethane** (used onboard the process).

Flarecatcher 1000 Characteristics

COMPRESSION	Rotary screw compression driven by electric motor Variable Frequency Drive (VFD) control for turndown Field-replaceable mobile unit with air-aftercooling
DEHYDRATION	Twin-bed regenerative system for continuous operation Molecular Sieve (desiccant) dries gas to dew-point below -100F Residue gas (ethane stream) regeneration to eliminate oxygen introduction
REFRIGERATION	Semi-hermetic screw compressors Two-stage cascade refrigeration system (economized for increased efficiency) Oil-separators, filter-driers, suction-accumulators used to improve reliability and performance Plate heat exchangers 304SS (Refrigeration: Copper brazed, Process: Nickel Brazed) Air-cooled condensing units with floating-coils and TEFC motors
SEPARATION	Fully welded 304SS construction vessels and pipe fitting Cyclonic-separator: Outputs lean gas and feeds condensed liquid to stripping column Stripping column: Random-fill design to maximize C3+ capture in NGL Reboiler System: Used to control ethane content in NGL NGL Transfer Pump: Mag-coupled rotary-vane
FILTRATION	Demisting pads used in inlet vessel as well as cyclonic-separator and stripping column Coalescing gas filters pre-and-post dehydration vessels Front-end condensate handling equipment
CONTROLS	Cellular communications routed through redundant secure data center Programmable automation controllers, Advanced VPN security appliance Pneumatically actuated solenoid equipped with limit-switches to report valve position Instrumented to measure temperatures, pressures, and flow in all critical areas
MOBILITY	Double-axle 48' drop-deck trailer with all metal construction (steel & aluminum).
POWER	300-kWe input power required, 480VAC, 3-phase, 60Hz (400-VAC, 3-phase, 50 Hz optional)
SAFETY	Electrical wiring Class-1, Division-2, Group C, D Pressure relief valves and rupture-disks used Automatic blow-down system to quickly and safely empty system of all liquid hydrocarbons Redundant instrumentation used in critical areas
SERVICE	Trained operators interface with the unit from a secure remote control room Trained field technicians provide on-location service and maintenance Complete turn-key operation

Flarecatcher 1000 Performance

Raw Gas Input		1,350	1,500	1,650	1,800	BTU/ft ³
COMPOSITION	Flow Rate	1,000	800	700	600	Mcf/day
	Cummins fuel quality MN	54.8	48.8	44.7	41.3	
	Methane	74%	64%	54%	44%	Vol %
	Ethane	11%	15%	19%	24%	
	Propane	7%	10%	13%	16%	
	Butane+	7%	9%	12%	15%	
Lean Methane Output		1,069	1,091	1,123	1,176	BTU/ft ³
Diesel fuel replacement		5,378	3,689	2,764	2,030	gal / day
Dry Methane flow rate		790	560	430	320	Mcf/day
Cummins fuel quality MN		79.2	75.8	71.9	66.8	
Power generation est.		3.0	2.0	1.4	1.0	MWe
Y-Grade NGL Output (0% methane, ethane rejected to 2% by volume)						
COMPOSITION	Daily capture rate	3,243	3,676	4,198	4,428	gal / day
	Methane	0%	0%	0%	0%	
	Ethane	2%	2%	2%	2%	
	Propane	40%	40%	40%	41%	
	Butane+	58%	58%	58%	57%	

Flarecatcher 1000 Renderings
