

TECOGEN® COGENERATION MODULES

~ More than 700 TECOGEN® cogeneration modules shipped and installed worldwide ~

Pioneers of Proven Technology ...

- ⇒ 1977: Initial design of CM-60, 60kW TECOGEN® unit
- ⇒ 1978: Public Utility Regulatory Policies Act (PURPA) establishes ground rules for cogeneration
- ⇒ 1979: Development of prototype 60kW unit initiated
- ⇒ 1981: First 60kW Tecogen laboratory unit placed on life test
- ⇒ 1983: First commercial sale of unit to Southern California Gas Co.
- ⇒ 1985: Specialized synchronous product developed for US and Japanese Markets [CM-30S, CM-70S, CM-200S, CM-280S (diesel), CM-600S, CM-850S (dual fuel)]
- ⇒ 1986: First TECOGEN field unit reached 20,000 hours of operation in field
- ⇒ 1987: First CM-200S, CM-280S, CM-600S units shipped
- ⇒ 1987: 1 million total run hours logged on Tecogen units at actual customer sites
- ⇒ 1988: CM-75 High Output unit introduced
- ⇒ 1990: First low-emissions units sold in Southern California
- ⇒ 1992: Tecogen focuses product line exclusively on 60kW and 75kW induction modules to best serve the cogeneration market up to 700kW, using multiple modules
- ⇒ 1993: First two-stage catalyst units sold in Southern California

... Setting The Pace With The Latest Innovations

State-of-the-Art TecoNet™ Remote Monitoring & Control System Simplifies Building Management System

- ⇒ 1998: Original microprocessor replaced by *TecoNet*™ state-of-the-art control system
- ⇒ 2001: *TecoNet*™ networking capabilities expanded to fully integrate numerous additional control functions

Ultra-Clean Emission Control System Meets Most Stringent Air Quality Standards

- ⇒ 1994-99: Ultra clean “Level 2” catalyst system developed to meet current SCAQMD standards
- ⇒ 1999: First Level 2 units permitted and source-tested
- ⇒ 2001: “Level 2” emissions controller with remote access and control/diagnostics introduced

Simplified Interconnection Process Significantly Reduces Complex Review Time

- ⇒ 2002: Cogeneration modules certified by ETL to be in compliance with national IEEE P1547/D07 standard
- ⇒ 2002: Tecogen units “type-tested and approved” under NY State Interconnection Requirement
- ⇒ 2002: Applied for and completed testing of Rule 21—California type-testing

New Integrated Packaging Modules and Installation Services

- ⇒ 2002: Innovative “plug-and-play” design reduces complexity of installation

TECOGEN

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*Service locations
throughout the US*

Strong Industry Support & Company Background

The Tecogen distributed generation product line was developed through a series of joint programs with the major natural gas industry research organizations in the United States. These programs were carried out at Tecogen's facility from the years 1981 through 2002 and totaled over \$15M in external funds. The most prominent of these are: *The Southern California Gas Co.* (CM-60), *San Diego Gas and Electric Co.* (CM-70S), *Southern California Edison* (CM-225), *The Gas Research Institute* – a consortium of major U.S. natural gas companies, now merged with IGT into the Gas Technology Institute (CM-75, CM-30, CM-600, Level 2 emissions systems, numerous engine and engine product development projects, the latest concluded in May 2002).

- ⇒ **1981:** Tecogen product developed by Thermo Electron R&D Center as part of GRI-funded research
- ⇒ **1985:** Tecogen, Inc. formed as a separate subsidiary of Thermo Electron Corporation
- ⇒ **2000:** Tecogen purchased as a private entity by original founders of Thermo Electron

Dedicated Service Organization

Tecogen's extensive network of factory-trained technicians offers local service for key regions in the United States.

- ⇒ **1983:** Tecogen Service started as a four-man operation
- ⇒ **2002:** Service department has expanded to 25+ factory-trained technicians stationed throughout the US



Specifications

Electrical Output (kW)	60	75
Thermal Output	440,000 Btu/hr	490,000 Btu/hr
Gas Input:	760 scfh	900 scfh
Efficiency:		
@ LHV of 905 BTU/scf	93.7%	91.6%
@ HHV of 1020 BTU/scf	83.1%	81.3%
Required Gas Pressure	4-14"wc	
Hot Water Flow	22 gpm	
Maximum Water Temperature	230°F	
Electrical Service	208V or 460V, 3-wire	
Emissions Option	Can meet air quality standards as strict as California's	
Acoustic Level	70 dBa @ 20'	
Dimensions:	6'10"L x 3'8"W x 3'10"H	
Weight:	3,000 lbs	

Note: Above performance data is valid up to 100°F ambient temperature, for standard units without optional emissions controls