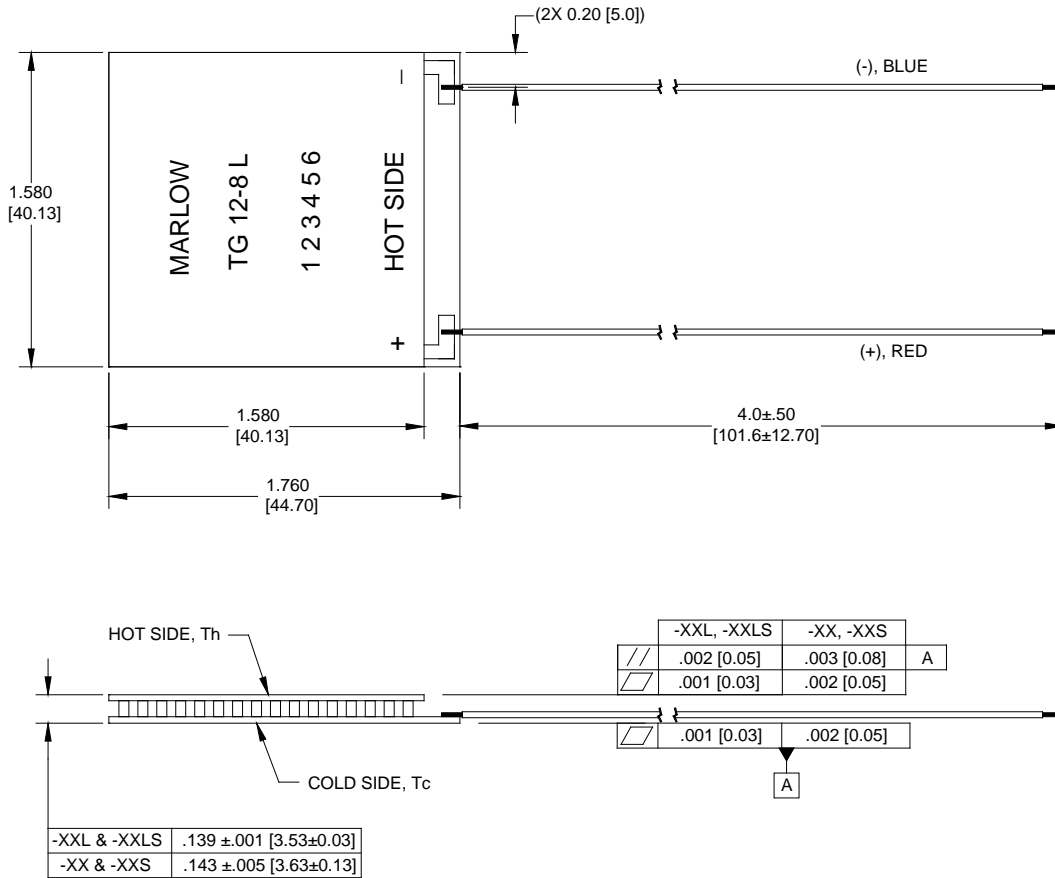


## TG12-8 Thermoelectric Generator

### TYPICAL PERFORMANCE VALUES

Cold Side Temperature, $T_c$ (°C)	27±2
AC Resistance (ohms):	1.36 – 1.69
Device $ZT_c$ :	0.73

### MECHANICAL CHARACTERISTICS



### ORDERING OPTIONS

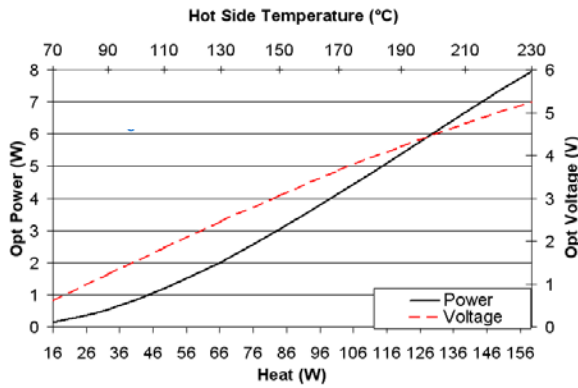
Model Number	Description
TG12-8-01	Leadwires
TG12-8-01L	Leadwires, Lapped
TG12-8-01S	Leadwires, Sealed
TG12-8-01LS	Leadwires, Lapped, Sealed
TG12-8-01G	Leadwires, Graphite Pads
TG12-8-01LG	Leadwires, Lapped, Graphite Pads
TG12-8-01SG	Leadwires, Sealed, Graphite Pads
TG12-8-01LSG	Leadwires, Lapped, Sealed, Graphite Pads

### PRODUCT FEATURES

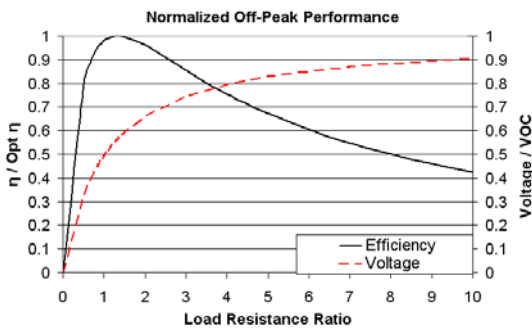
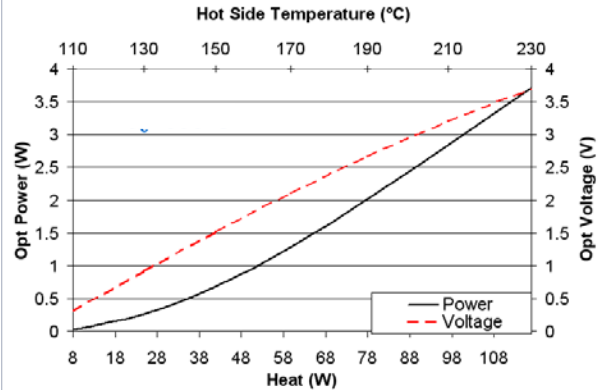
- Rated operating temperature 230°C for short periods, 200°C extended operation.
- Superior diffusion barriers on elements.
- High strength for rugged environment.
- Porch configuration for enhanced leadwire strength.
- RTV sealing option available.
- Lapped option available for improved flatness and parallelism.
- Graphite thermal interface option available.

ENVIRONMENT: 10<sup>-5</sup> TORR VACUUM

**Cold Side Temperature 50°C**



**Cold Side Temperature 100°C**



Hot Side Temperature (°C)	230	170	110
Cold Side Temperature (°C)	50	50	50
Optimum Efficiency, $\eta$ (%)	4.97	4.08	2.39
Optimum Power (W)	7.95	4.17	1.19
Optimum Voltage (V)	5.25	3.65	1.86
Load Resistance for Opt $\eta$ ( $\Omega$ )	3.46	3.20	2.90
Open Circuit Voltage, $V_{OC}$ (V)	9.43	6.48	3.27
Closed Circuit Current (A)	3.38	2.60	1.48
Thermal Resistance (°C/W)	1.13	1.17	1.20

Performance information is given in a nitrogen environment and cold side temperatures of 50°C and 100°C. TG device temperature does not include thermal resistance of heat sinks, Thermal Interface Materials (TIM) such as graphite pads or thermal greases, and clamping techniques. Hot side and cold side temperatures represent the temperatures of the hot and cold ceramics on the module. For performance information in vacuum, other cold side temperatures, or specific heat sinks and TIM materials, consult our applications engineers.

**Installation**

Recommended mounting methods: Clamp with uniform pressure to a flat surface with thermal interface material. Recommended 1.4 MPa (200 psi) with thermal grease or flexible graphite pads. For additional information, please contact an applications engineer.

**Operation Cautions**

For maximum reliability, continuous operation below 200°C (cold side and hot side) is recommended. Intermittent operation up to 230°C on the hot side of the TG is permissible.

**CONTACT US:**

For customer support or general questions please contact a local office below or visit our website at [www.marlow.com](http://www.marlow.com).

Marlow Industries, Inc.  
10451 Vista Park Road  
Dallas Texas 75238-1645  
214-340-4900 (tel)  
214-341-5212 (fax)  
877-627-5691 (tech support)  
[www.marlow.com](http://www.marlow.com)

Marlow Industries Europe GmbH  
Brunnenweg 19-21  
64331 Weiterstadt  
Germany  
Tel.: +49 (0) 6150 5439 - 403  
Fax: +49 (0) 6150 5439 - 400  
[info@marlow-europe.eu](mailto:info@marlow-europe.eu)

II-VI Japan Inc.  
WBG Marive East 17F  
2-6 Nakase, Mihama-ku  
Chiba-Shi, Chiba 261-7117  
Japan  
81 43 297 2693 (tel)  
81 43 297 3003 (fax)  
[center@ii-vi.co.jp](mailto:center@ii-vi.co.jp)  
[www.ii-vi.co.jp](http://www.ii-vi.co.jp)

II-VI Singapore Pte., Ltd.  
Blk. 5012, Techplace II  
#04-07 & 05-07/12, Ang Mo Kio Ave. 5  
Singapore 569876  
(65) 6481 8215 (tel)  
(65) 6481 8702 (fax)  
[info@ii-vi.com.sg](mailto:info@ii-vi.com.sg)  
[www.ii-vi.com.sg](http://www.ii-vi.com.sg)

Marlow Industries China, II-VI  
Technologies Beijing  
A subsidiary of II-VI Incorporated  
Rm 202, 1# Lize 2nd Middle Road  
Wangjing, Chaoyang District  
Beijing 100102 China  
010-64398226 ext 105 (tel)  
010-64399315 (fax)  
[info@iivibj.com](mailto:info@iivibj.com)