



8.	Business Address:	(1)	121 LAFAYETTE ROAD		
		(2)			
		(3)			
			NORTH HAMPTON	NH	03862
			(City)	(State)	(Zip Code)
9.	Telephone number:		(603) 964-7700		
10.	Facsimile number:		(603) 964-5890		
11.	Email address:		<a href="http://www.gorelco.com">www.gorelco.com</a>		
12.	Equipment				
	vendor's Name:		altE		
13.	Business Address:	(1)	43 BROAD STREET		
		(2)	SUITE A408		
		(3)			
			HUDSON	MA	01749
			(City)	(State)	(Zip Code)
14.	Telephone number:		(978) 562-5858		
15.	Facsimile number:		(978) 320-9514		
16.	Email address:		<a href="http://www.altdirect.com">www.altdirect.com</a>		
17.	Independent Monitor's Name:		Enphase Energy, Inc.		
18.	Business Address:	(1)	201 1ST STREET		
		(2)			
		(3)			
			PETALUMA	CA	94952
			(City)	(State)	(Zip Code)

19.	Telephone number:	(707) 763-4784
20.	Facsimile number:	(707) 763-0784

21.	Email address:	www.enphase.com															
22.	The ISO-New England asset identification number, if applicable:									or N/A:	<input checked="" type="checkbox"/>						
23.	The GIS facility code, if applicable:							or N/A:	<input checked="" type="checkbox"/>								
24.	If Class I, please identify type of source below:																
	<input type="checkbox"/>	solar hot water heating,	<input type="checkbox"/>	wind generation and/or	<input type="checkbox"/>	other generation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	<input type="checkbox"/>				
	If other type of generation, provide a description. (Attach as "Exhibit A")																
25.	A list and description of the equipment used at the facility, including the meter and, if applicable, the inverter (Attach as "Exhibit B")																
26.	A copy of the interconnection agreement pursuant to Puc 307.06, if applicable, between the applicant and the distribution utility. (Attach as "Exhibit C" or N/A											<input checked="" type="checkbox"/>					
27.	A signed attestation by the owner/applicant that the project is installed and operating in conformance with any applicable building codes. (Attach as "Exhibit D" or N/A											<input type="checkbox"/>					
28.	For an installation with electric output, documentation of the applicable distribution utility's approval of the installation. (Attach as "Exhibit E" or N/A											<input type="checkbox"/>					
29.	This application and all future correspondence should be sent to:																
	Ms. Debra A. Howland																
	Executive Director and Secretary																
	State of New Hampshire																
	Public Utilities Commission																
	21 S. Fruit St, Suite 10																
	Concord, NH 03301-2429																

30.	Preparer's Information:		
	Name:	SAME AS OWNER	
	Title:		
	Address:	(1)	
		(2)	
		(3)	
		(City)	(State) (Zip Code)
	Preparer's Signature:	<i>Burrell M. Upde</i>	Date: 9/16/11
I attest that this project has been installed and is operating in conformance with any applicable building and electrical codes:			
	Owner's Signature:	<i>Burrell M. Upde</i>	Date: 9/16/11
	Notary's Signature:	<i>Kara A. Young</i>	Date: 9/16/11



EXHIBIT B

York PV Installation  
1 Red Fox Road  
North Hampton, NH 03862-2050

Parts List:

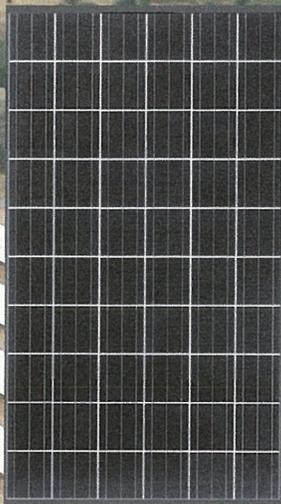
1. 11 each 235w Kocera KD235GX-LPB solar panels (Data sheet attached).
2. 11 each Enphase M190-72-240-S12 micro inverters. One on each panel (Data sheet attached).
3. 1 each Envoy Communications Gateway (Data sheet attached)

Note: There is not "electrical meter" recording electrical production in the classical sense. The only visual monitoring device is the Envoy LCD display. All data is transmitted to and stored by Enphase Energy, Inc.

New Release

# 235 WATT

HIGH EFFICIENCY MULTICRYSTAL  
PHOTOVOLTAIC MODULE



**KD235GX-LPB**

NEC 2008 Compliant  
UL 1703, ISO 9001  
and ISO 14001  
Certified and Registered  
Class C IEC 61215



#### Cutting Edge Technology

As a pioneer with 35 years in solar, Kyocera demonstrates leadership in the development of solar energy products. Kyocera's *Kaizen* Philosophy, commitment to continuous improvement, is shown by repeatedly achieving world record cell efficiencies.

#### Quality Built In

- UV stabilized, aesthetically pleasing black anodized frame
- Supported by major mounting structure manufacturers
- Easily accessible grounding points on all four corners for fast installation
- Proven junction box technology with PV wire to work with transformerless inverters
- Quality locking plug-in connectors to provide safe & quick connections
- Support bars added for improved stability

#### Fully Integrated Manufacturing

Kyocera manufactures and assembles solar cells and modules at its own worldwide production sites using a true vertical integration process. This superior approach gives Kyocera complete control over every step of the manufacturing process, producing modules with promising high quality and efficiency.

#### Reliable

- Superior built-in quality
- Proven superior field performance

#### Warranty

- Kyocera standard 20 year power output warranty and 5 year workmanship warranty applies in USA
- Extended warranties available per project requirements
- Kyocera standard 20 year power output warranty and 2 year workmanship warranty applies outside of USA
- Refer to Kyocera warranty policy for details

#### Compatibility

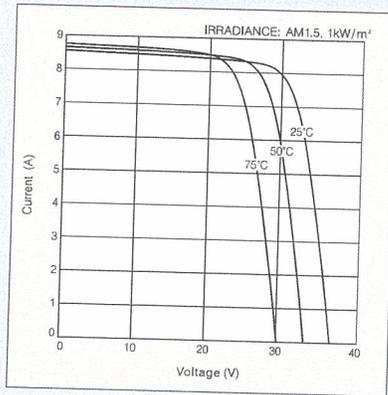
- Compatible with Enphase Energy microinverters 

**SOLAR** by KYOCERA

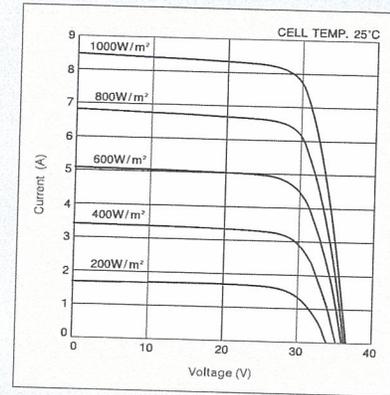
# KD235GX-LPB

## ELECTRICAL CHARACTERISTICS

Current-Voltage characteristics of Photovoltaic Module KD235GX-LPB at various cell temperatures



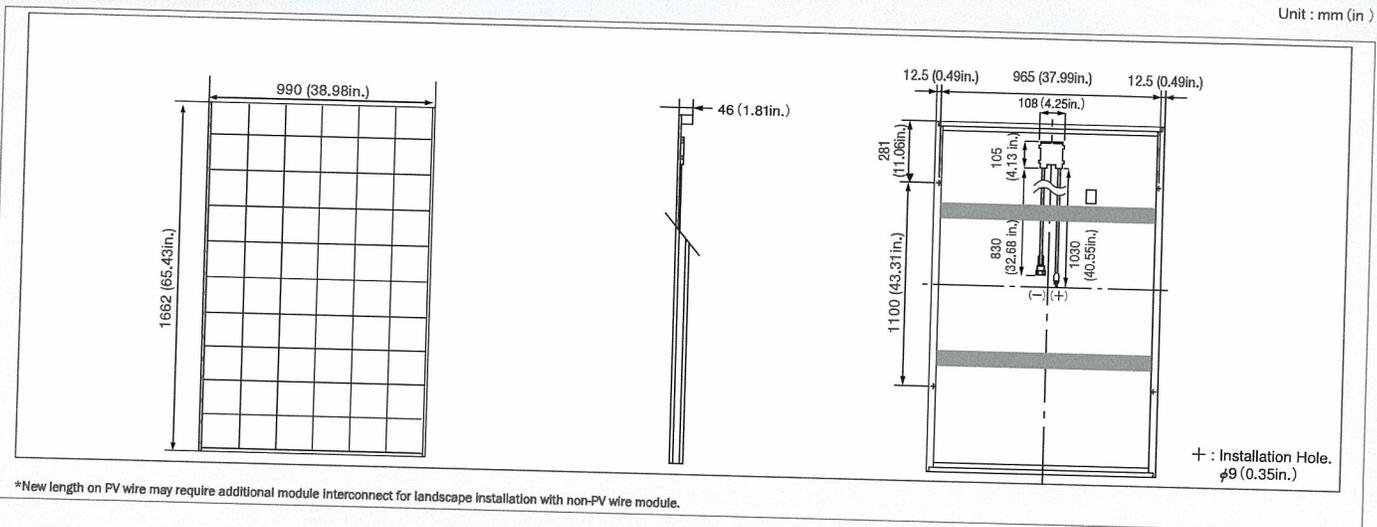
Current-Voltage characteristics of Photovoltaic Module KD235GX-LPB at various irradiance levels



## SPECIFICATIONS

### Physical Specifications

Unit : mm (in.)



### Specifications

#### Electrical Performance under Standard Test Conditions (\*STC)

Maximum Power (P <sub>max</sub> )	235W (+5% / -3%)
Maximum Power Voltage (V <sub>mpp</sub> )	29.8V
Maximum Power Current (I <sub>mpp</sub> )	7.89A
Open Circuit Voltage (V <sub>oc</sub> )	36.9V
Short Circuit Current (I <sub>sc</sub> )	8.55A
Max System Voltage	600V
Temperature Coefficient of V <sub>oc</sub>	-1.33x10 <sup>-1</sup> V/°C
Temperature Coefficient of I <sub>sc</sub>	5.13x10 <sup>-3</sup> A/°C

\*STC : Irradiance 1000W/m<sup>2</sup>, AM1.5 spectrum, cell temperature 25°C

#### Electrical Performance at 800W/m<sup>2</sup>, \*NOCT, AM1.5

Maximum Power (P <sub>max</sub> )	166W
Maximum Power Voltage (V <sub>mpp</sub> )	26.4V
Maximum Power Current (I <sub>mpp</sub> )	6.31A
Open Circuit Voltage (V <sub>oc</sub> )	33.3V
Short Circuit Current (I <sub>sc</sub> )	6.93A

\*NOCT (Nominal Operating Cell temperature): 47.9°C

ISO 9001 and ISO 14001 Certified and Registered

Kyocera reserves the right to modify these specifications without notice.

www.kyocerasolar.com  
800-223-9580 toll free 800-523-2329 fax

#### Cells

Number per Module	60
-------------------	----

#### Module Characteristics

Length x Width x Depth	1662mm (65.43in) x 990mm (38.98in) x 46mm (1.81in)
Weight	21.0kg (46.3 lbs)
Cable	(+)1030mm (40.55in), (-)830mm (32.68in)

#### Junction Box Characteristics

Length x Width x Depth	105mm (4.13in) x 108mm (4.25in) x 20mm (0.79in)
IP Code	IP65

#### Others

*Operating Temperature	-40 °C ~ 90 °C
Maximum Fuse	15A

\*This Temperature is based on cell



Enphase Microinverter Operating Parameters				
Topic/Model	Unit	Min	Typical	Max
Operating temperature range	°C	-40		65
Night Tare Loss				
✓ M190-72-240-S1x	mW		30	
M190-72-208-S1x	mW		30	
M210-84-208-S12	mW		30	
M210-84-240-S12	mW		30	
Storage temperature range	°C	-40		65
Features				
Dimensions (approximate)	8" x 5 1/4" x 1 1/4"			
Weight	4.4 Lbs			
Enclosure environmental rating	NEMA6			
Cooling	Convective – no fan			
Communication	Powerline			
Standard warranty term	15 years			
Compliance	UL1741, IEEE1547, FCC Part 15 Class B			
Integrated AC Disconnect	AC has been evaluated and approved for use as the load-break disconnect required by the NEC			

Voltage and Frequency Limits for Utility Interaction			
Condition	Simulated utility source		Maximum time (sec) (cycles) at 60 Hz before cessation of current to the simulated utility
	Voltage (V)	Frequency (Hz)	
A	$< 0.50 V_{\text{Typical}}$	Rated	0.16
B	$0.50 V_{\text{Typical}} \leq V < 0.88 V_{\text{Typical}}$	Rated	2
C	$1.10 V_{\text{Typical}} < V < 1.20 V_{\text{Typical}}$	Rated	1
D	$1.20 V_{\text{Typical}} \leq V$	Rated	0.16
E	Rated	$f > 60.5$	0.16
F	Rated	$f < (59.8 - 57.0)$	0.16 – 300
G	Rated	$f < 57.0$	0.16



The Enphase Envoy Communications Gateway is the networking hub for the Enphase Microinverter System.

System owners can easily check the status of their solar system using the Envoy's LCD display or they can get more detailed, per module information through Enlighten, Enphase's web-based monitoring and analysis software, included with purchase of Envoy.

**SMART** [ - Includes web-based monitoring & control  
- Integrates with smart energy devices

**SIMPLE** [ - Plug & play installation  
- Automatic upgrades & diagnostics

**RELIABLE** [ - 24/7 monitoring & analysis  
- Advanced data management & storage



# ENVOY COMMUNICATIONS GATEWAY

## Interface

Power Line Communications	Enphase proprietary
Local Area Network (LAN)	10/100 auto-sensing, auto-negotiating

## Power Requirements

AC supply	120Vac, 60Hz
Power Consumption	2.5 watts typical, 7 watts maximum

## Capacity

Number of microinverters polled	Recommended up to 210  For commercial installations, multiple Envoy devices are used in combination with Line Communications Filters (LCF) to separate networking domains across the site.
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## Mechanical Data

Dimensions (WxHxD)	222.5mm x 112mm x 43.2mm (8.8" x 4.4" x 1.7")
Weight	340g (12oz.)
Ambient temperature range	-40°C to +65°C (-40° to 149°F)
Cooling	Natural convection - no fans
Enclosure environmental rating	Indoor NEMA 1

## Features

Standard warranty term	One year
Compliance	UL 60950-1, EN 60950-1 FCC Part 15 Class B

142-00014 Rev 02

Enphase Energy, Inc.  
201 1st Street  
Petaluma, CA 94952  
Phone: +1 707-763-4784  
Fax: +1 707-763-0784  
[info@enphaseenergy.com](mailto:info@enphaseenergy.com)  
<http://www.enphase.com>

EXHIBIT D

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
INTERCONNECTION STANDARDS FOR INVERTERS  
SIZED UP TO 100 KVA (Continued)

Exhibit B - Certificate of Completion for Simplified Process Interconnections

Installation Information:

Check if owner-installed

Customer or Company Name (print): Burrell M. York

Contact Person, if Company: \_\_\_\_\_

Mailing Address: 1 RED FOX ROAD

City: NORTH HAMPTON State: NH Zip Code: 03862

Telephone (Daytime): (603)964-1993 (Evening): SAME

Facsimile Number: \_\_\_\_\_ E-Mail Address: Butch.york@COMCAST.NET

Address of Facility (if different from above): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Generation Vendor: \_\_\_\_\_ Contact Person: \_\_\_\_\_

I herby certify that the system hardware is in compliance with Puc 900.

Vendor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Electrical Contractor's Name (if appropriate): RESCO/KOHLHASE ELECT. DIV

Mailing Address: 121 LAZAYETTE ROAD

City: NORTH HAMPTON State: NH Zip Code: 03862

Telephone (Daytime): (603)964-7700 (Evening): N/A

Facsimile Number: (603)964-5890 E-Mail Address: SPILLING@BORELCO.COM

License number: 0189C

Date of approval to install Facility granted by the Company: 9/7/2010 Installation Date: 9/21/2010

Application ID number: N2244

Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of  
NORTH HAMPTON, NH / ROCKINGHAM  
(City/County)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection): [Signature]

Name (printed): Richard Mabey

Date: 10/5/10

Customer Certification:

I hereby certify that, to the best of my knowledge, all the information contained in this Interconnection Notice is true and correct. This system has been installed and shall be operated in compliance with applicable electrical standards. Also, the initial start up test required by Puc 905.04 has been successfully completed.

Customer Signature: [Signature] Date: 10/5/2010

[Signature] SESD-PSNH 10/7/2010

EXHIBIT E

#N 2244  
York PV

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
INTERCONNECTION STANDARDS FOR INVERTERS  
SIZED UP TO 100 KVA (Continued)

Simplified Process Interconnection Application and Service Agreement

Contact Information: Date Prepared: 8/27/2010  
Legal Name and Address of Interconnecting Customer (or, Company name, if appropriate)  
Customer or Company Name (print): Burrell M. York  
Contact Person, if Company:  
Mailing Address: 1 Red Fox Road  
City: North Hampton State: NH Zip Code: 03862  
Telephone (Daytime): (603) 964-1993 (Evening): (603) 964-1993  
Facsimile Number: E-Mail Address: butch.york@comcast.net

Alternative Contact Information (e.g., system installation contractor or coordinating company, if appropriate):  
Name: GOGREEN INDUSTRIES, INC.  
Mailing Address: 2 Doris Rd.  
City: WESTFORD State: MA Zip Code: 01886  
Telephone (Daytime): (978) 496-1881 (Evening): (978) 496-1881  
Facsimile Number: (978) 496-1919 E-Mail Address: SMC@gogreenindustries.us

Electrical Contractor Contact Information (if appropriate):  
Name: RELCO Telephone: (603) 964-7700  
Mailing Address: 121 LAFAYETTE ROAD  
City: NORTH HAMPTON State: NH Zip Code: 03862

Facility Information:  
Address of Facility: 1 RED FOX RD  
City: North Hampton State: NH Zip Code: 03862  
Electric Service Company: PSNH Account Number: 56210241048 Meter Number: D87027393  
Electricity Supply Company: PSNH Account Number: 56210241048  
Generator/Inverter Manufacturer: ENPHASE Model Name and Number: M190 Quantity: 11  
Nameplate Rating: 2.6 (kW) 2.40 (kVA) (AC Volts) Single X or Three Phase  
System Design Capacity: 0.19 (kVA) 5.2 (kVA) Battery Backup: Yes No X  
Net Metering: If Renewably Fueled, will the account be Net Metered? Yes X No  
Prime Mover: Photovoltaic  Reciprocating Engine  Fuel Cell  Turbine  Other  
Energy Source: Solar  Wind  Hydro  Diesel  Natural Gas  Fuel Oil  Other  
UL 1741.1 (IEEE 1547.1) Listed? Yes X No External Manual Disconnect: Yes No  
Estimated Install Date: 9/15/2010 Estimated In-Service Date: 9/30/2010

Interconnecting Customer Signature  
I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to the Terms and Conditions on the following page:  
Customer Signature: B. M. York Title: Date: 9/2/2010  
Please attach any documentation provided by the inverter manufacturer describing the inverter's UL 1741 listing.

Approval to Install Facility (For Company use only)  
Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required. (Are system modifications required? Yes No  To be Determined )  
Company Signature: Matthew Long Title: Associate Engr. Date: 9/7/2010

3172x2  
Portsmouth

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
INTERCONNECTION STANDARDS FOR INVERTERS  
SIZED UP TO 100 KVA (Continued)

Company waives inspection/Witness Test? Yes  No

**Terms and Conditions for Simplified Process Interconnections**

1. **Construction of the Facility.** The Interconnecting Customer may proceed to construct the Facility in compliance with the specifications of its Application once the Approval to Install the Facility has been signed by the Company.
2. **Interconnection and operation.** The Interconnecting Customer may operate Facility and interconnect with the Company's system once the all of the following has occurred:
  - 2.1. **Municipal Inspection.** Upon completing construction, the Interconnecting Customer will cause the Facility to be inspected or otherwise certified by the local electrical wiring inspector with jurisdiction.
  - 2.2. **Certificate of Completion.** The Interconnecting Customer returns the Certificate of Completion to the Agreement to the Company at address noted.
  - 2.3. **Company has completed or waived the right to inspection.**
3. **Company Right of Inspection.** The Company will make every attempt within ten (10) business days after receipt of the Certificate of Completion, and upon reasonable notice and at a mutually convenient time, conduct an inspection of the Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with the Interconnection Standard. The Company has the right to disconnect the Facility in the event of improper installation or failure to return Certificate of Completion. All projects larger than 10 kVA will be witness tested, unless waived by the Company.
4. **Safe Operations and Maintenance.** The Interconnecting Customer shall be fully responsible to operate, maintain, and repair the Facility.
5. **Disconnection.** The Company may temporarily disconnect the Facility to facilitate planned or emergency Company work.
6. **Metering and Billing.** All renewable Facilities approved under this Agreement that qualify for net metering, as approved by the Commission from time to time, and the following is necessary to implement the net metering provisions:
  - 6.1. **Interconnecting Customer Provides:** The Interconnecting Customer shall furnish and install, if not already in place, the necessary meter socket and wiring in accordance with accepted electrical standards. In some cases the Interconnecting Customer may be required to install a separate telephone line.
  - 6.2. **Company Installs Meter.** The Company will make every attempt to furnish and install a meter capable of net metering within ten (10) business days after receipt of the Certificate of Completion if inspection is waived, or within 10 business days after the inspection is completed, if such meter is not already in place.
7. **Indemnification.** Interconnecting Customer and Company shall each indemnify, defend and hold the other, its directors, officers, employees and agents (including, but not limited to, Affiliates and contractors and their employees), harmless from and against all liabilities, damages, losses, penalties, claims, demands, suits and proceedings of any nature whatsoever for personal injury (including death) or property damages to unaffiliated third parties that arise out of, or are in any manner connected with, the performance of this Agreement by that party, except to the extent that such injury or damages to unaffiliated third parties may be attributable to the negligence or willful misconduct of the party seeking indemnification.
8. **Limitation of Liability.** Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever.
9. **Termination.** This Agreement may be terminated under the following conditions:
  - 9.1. **By Mutual Agreement.** The Parties agree in writing to terminate the Agreement.
  - 9.2. **By Interconnecting Customer.** The Interconnecting Customer may terminate this Agreement by providing written notice to Company.
  - 9.3. **By Company.** The Company may terminate this Agreement (1) if the Facility fails to operate for any consecutive 12 month period, or (2) in the event that the Facility impairs or, in the good faith judgment of the Company, may imminently impair the operation of the electric distribution system or service to other customers or materially impairs the local circuit and the Interconnecting Customer does not cure the impairment.
10. **Assignment/Transfer of Ownership of the Facility.** This Agreement shall survive the transfer of ownership of the Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the Company.
11. **Interconnection Standard.** These Terms and Conditions are pursuant to the Company's "Interconnection Standards for Inverters Sized Up to 100 kVA" for the Interconnection of Customer-Owned Generating Facilities, as approved by the Commission and as the same may be amended from time to time ("Interconnection Standard"). All defined terms set forth in these Terms and Conditions are as defined in the Interconnection Standard (see Company's website for the complete document).