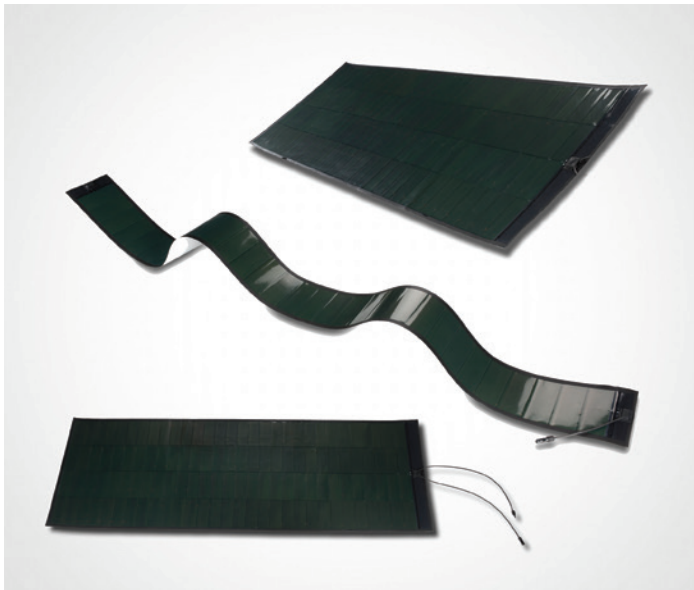




**Dow Solar**

# Dow Solar taps into the power of NuvoSun™ CIGS technology

New product concepts enables Flexible Lightweight solar called FlexsoLyt™



**The empowering future of Dow Solar.**

Innovative solar products are currently in development at Dow Solar using NuvoSun™ CIGS (Copper Indium/Gallium di-Selenide) technology. These flexible and lightweight NuvoSun™ PV (photovoltaic) modules have high conversion efficiencies, making them ideal for both portable applications and commercial structures with loading requirements, curved surfaces or flat roofs, as well as both metal and membrane roof market segments.

This new technology is helping create a bright solar future with:

- Flexible construction, allowing solar installation in low-roof-load applications and portable applications
- Reduced installation costs
- Integrated bypass diodes that provide shading protection
- Superior low-sun-angle and low-light performance, providing excellent energy yield

Electrical Performance at STC <sup>1</sup>		FL0927	FL1132	FL0432	FL0912
Rated Peak Power (P <sub>mpp</sub> )*	[W]	291	436	130	116
Cell Efficiency	[%]	13.5	13.5	13.5	13.5
Power Output Tolerance		+5%, -0	+5%, -0	+5%, -0	+5%, -0
Open Circuit Voltage (V <sub>oc</sub> )	[V]	74.4	111.6	22.3	29.8
Max. Power Voltage (V <sub>MPP</sub> )	[V]	58.8	88.2	17.6	23.5
Short Circuit Current (I <sub>sc</sub> )	[A]	5.8	5.8	8.6	5.8
Max. Power Current (I <sub>MPP</sub> )	[A]	4.95	4.95	7.4	4.95
Nominal Operating Cell Temp. (°C)	[°C]	TBD	TBD	TBD	TBD
Temp. Coefficient of P <sub>MPP</sub>	[%/°C]	-0.43	-0.43	-0.43	-0.43
Temp. Coefficient V <sub>oc</sub>	[%/°C]	-0.35	-0.35	-0.35	-0.35
Temp. Coefficient of I <sub>sc</sub>	[%/°C]	-0.02	-0.02	-0.02	-0.02
# of cells, electrical connection		120, series	180, series	36, series	48, series

<sup>1</sup>Standard Test Condition (STC): 1000 W/m<sup>2</sup>, 25°C cell temperature, AM 1.5 spectrum

Physical & Mechanical Characteristics					
		FL0927	FL1132	FL0432	FL0912
Cell Type	Copper Indium Gallium di-Selenide (CIGS)				
Length	[mm]	2700	3214.2	3214.2	1157.4
Width	[mm]	891	1106	351	891
Weight	[kg]	6	8.9	2.8	2.6
Thickness	[mm]	15 @ Junction Box			
Properties	Flexible top and back sheet barrier films, single Junction Box				

At Dow Solar, we're continually innovating products to meet your needs and specifications. If you're interested in partnering with us to develop and commercialize this technology, please contact:

**Audrey Kram, Public Affairs**  
**The Dow Chemical Company**  
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### About The Dow Chemical Company

Dow (NYSE: DOW) combines the power of science and technology to passionately innovate what is essential to human progress. The Company is driving innovations that extract value from the intersection of chemical, physical and biological sciences to help address many of the world's most challenging problems, such as the need for clean water, clean energy generation and conservation, and increasing agricultural productivity. Dow's integrated, market-driven, industry-leading portfolio of specialty chemical, advanced materials, AgroSciences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 180 countries and in high-growth sectors, such as packaging, electronics, water, coatings and agriculture. In 2013, Dow had annual sales of more than \$57 billion and employed approximately 53,000 people worldwide. The Company's more than 6,000 products are manufactured at 201 sites in 36 countries across the globe. References to "Dow" or the "Company" mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted. More information about Dow can be found at [www.dow.com](http://www.dow.com).



### About NuvoSun™

NuvoSun™, a wholly owned subsidiary of The Dow Chemical Company, is a second-generation innovator of thin-film photovoltaic (PV) cells and modules based on flexible Copper Indium/Gallium di-Selenide (CIGS) technology, low-cost equipment, and a low-cost proprietary manufacturing process. Dow's investment in NuvoSun™ is one of several examples of Dow investing in alternative energy technologies to deliver superior value for our customers now and into the future.

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