



Conference: Congreso Interdisciplinario de Energías Renovables -  
Mantenimiento Industrial - Mecatrónica e Informática

*Booklets*



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DOI - REBID - Mendeley - DIALNET - ROAD - ORCID

**Title:** Modelado de la etapa de hidrólisis para la producción de hidrogeno con CeO2 utilizando energía solar concentrada

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**Editorial label ECORFAN:** 607-8324  
**BCIERMIMI Control Number:** 2016-01  
**BCIERMIMI Classification(2016):** 191016-0101

**Pages:** 20

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**RNA:** 03-2010-032610115700-14

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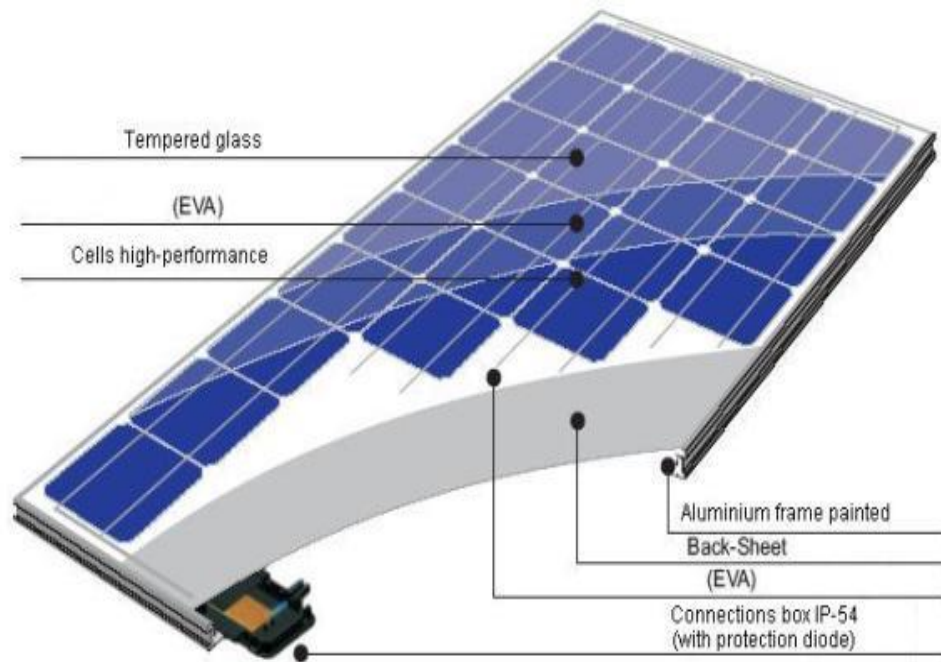


**Congreso Interdisciplinario de Energías Renovables,  
Mantenimiento Industrial, Mecatrónica e Informática**

2016

Mes	Temperatura diaria mínima	Temperatura diaria máxima	Total de lluvia (mm)	Numero de días de lluvia
Enero	16.7	28.8	33.8	2.2
Febrero	16.3	29	5.3	0.7
Marzo	16.9	29.2	2	0.6
Abril	17.2	29.9	1.5	0.2
Mayo	20.2	31	15.4	1
Junio	22.8	32.3	187.6	10.8
Julio	22.9	33.3	328.1	16.4
Agosto	23	33.7	312.4	15.2
Septiembre	22.9	33.6	370	15.6
Octubre	22.2	33.6	93.8	5.1
Noviembre	19.7	32.6	19.8	1.4
Diciembre	18	29.9	22.5	1.9


*Temperaturas y total de lluvia para la región de Bahía de Banderas, Nayarit.*



*Componentes de un módulo fotovoltaico.*

# Hoja de datos técnicos, modulo fotovoltaico Solartec® 250W.

POLYCRYSTALLINE



## 225 - 250W SOLAR PANEL


EXCEPTIONAL EFFICIENCY AND PERFORMANCE /  
EFICIENCIA Y DESEMPEÑO EXCEPCIONAL

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### S60PC

60 Cell Modules

S60PC-225, S60PC-230, S60PC-240,  
S60PC-245, S60PC-250



**BENEFITS / BENEFICIOS**

**High Efficiency / Alta Eficiencia**  
High cell efficiency of up to 16.8%.  
Lider en la industria empleando celdas policristalinas con eficiencias de hasta 16.8%.

**More Power / Mayor Potencia**  
Delivers up to 50% more power per unit area than conventional solar panels and 100% more than thin film solar panels.  
Ofrece hasta un 50% más de potencia por unidad de área a comparación de los paneles solares convencionales y un 100% más que los paneles solares de película delgada.


**Reduces Installation Cost / Reducción en Costos de Instalación**  
More power per panel means fewer modules per installation. This saves both time and money.  
Mas potencia por panel representa menos módulos por instalación. Este ahorra tanto tiempo como dinero.

**Reliable and Robust Design / Diseño Robusto y Confiable**  
Certified materials, tempered front glass, and a sturdy anodized frame allows the module to operate reliably in multiple mounting configurations.  
Materiales certificados, cristal templado y un robusto marco anodizado al cual permite al módulo operar sin problema alguno y en múltiples configuraciones de montaje.

**Solartec 225 - 250W solar modules provide industry leading efficiency and performance.**  
Utilizing 60 next generation solar cells and an optimized module design, Solartec S60PC solar module deliver an unprecedented total conversion efficiency of 15.29%. Solartec 225 - 250W modules reduced voltage - temperature coefficient, and exceptional low - light performance attributes, provide far higher energy delivery at peak power than conventional modules.

Los módulos solares Solartec de 225 - 250W proveen un liderazgo incomparable en la industria gracias a su eficiencia y desempeño.  
El módulo solar Solartec S60PC utiliza 60 celdas solares de última generación,

POLYCRYSTALLINE



## 225 - 250W SOLAR PANEL

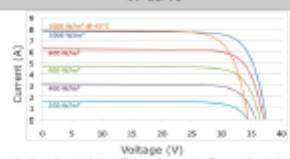
EXCEPTIONAL EFFICIENCY AND PERFORMANCE /  
EFICIENCIA Y DESEMPEÑO EXCEPCIONAL

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**Specifications / Especificaciones**

Number of cells / Numero de celdas	60 (6 x 10)
Module dimensions / Dimensiones del modulo	1640mm x 992mm
Weight / Peso	23.9 kg
Cell / Celda	50 um long double RPE layer, TiV Certified, 4.9mm <sup>2</sup>
Connective / Conexión	3005 Type IV Junction box with 6 bypass diodes, MC4 Type PL4, TiV Certified.
Back Sheet / Hoja Trasera	White/Black/Blue TPT or Glass
Frame / Marco	Aluminum (40 mm) or Without frame
Fire Rating / Clasificación de fuego	Class C

**IV Curve**



Current / voltage characteristic with dependence on irradiance and module temperature.  
Corriente / voltaje característica con dependencia de irradiancia y temperatura del modulo.

Maximum system voltage / Voltaje máximo del sistema	600 V	Maximum series fuse / Valor máximo del fusible en serie	15 A
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**150mm Polycrystalline Silicon Cells Solar Module / Panel Solar con Celdas de 150mm de Silicio Policristalino**

Model / Modelo	S60PC-225		S60PC-230		S60PC-240		S60PC-245		S60PC-250	
Test Conditions / Condiciones de Medición	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Open circuit voltage (V <sub>oc</sub> ) / Voltaje de circuito abierto	37.00 V	34.10 V	37.17 V	34.30 V	37.51 V	34.60 V	37.68 V	34.80 V	37.85 V	35.00 V
Optimum operating voltage (V <sub>mp</sub> ) / Voltaje en el punto de máxima potencia	29.12 V	27.10 V	29.32 V	27.40 V	29.72 V	28.10 V	29.32 V	28.30 V	30.12 V	28.60 V
Short circuit current (I <sub>sc</sub> ) / Corriente de cortocircuito	8.23 A	6.65 A	8.31 A	6.73 A	8.48 A	6.86 A	8.57 A	6.94 A	8.65 A	7.30 A
Optimum operating current (I <sub>mp</sub> ) / Corriente en el punto de máxima potencia	7.73 A	6.07 A	7.84 A	6.14 A	8.08 A	6.29 A	8.19 A	6.37 A	8.39 A	6.45 A
Maximum power (P <sub>max</sub> ) / Potencia máxima	225 W	164.4 W	230 W	168.2 W	240 W	176.5 W	245 W	186.4 W	250 W	184.5 W
Module efficiency / Eficiencia del modulo	13.76%	14.07%	14.69%	14.69%	14.98%	14.98%	15.29%	15.29%	15.29%	15.29%

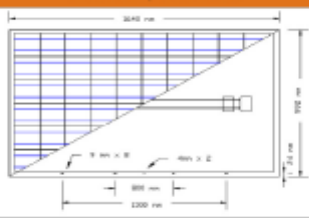
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**Temperature Coefficients / Coeficientes de Temperatura**

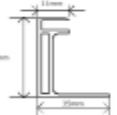
of V <sub>oc</sub> / de V <sub>oc</sub> (V)	+0.362% / °C	of V <sub>mp</sub> / de V <sub>mp</sub> (V)	-0.330% / °C	of P <sub>max</sub> / de P <sub>max</sub> (W)	-0.45% / °C
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**Dimensions / Dimensiones**



Aluminium Frame / Marco de Aluminio



**Guarantees / Garantías**

Materiales comprising photovoltaic modules and any possible defects due to the manufacturing process for 10 years.  
Los materiales que componen los módulos fotovoltaicos y los posibles defectos que se deben al proceso de fabricación por un periodo de 10 años.

At least 80% output power provided by the photovoltaic module over 10 years.  
Generación mínima del 80% de la potencia de salida nominal del módulo a los 10 años.

At least 80% output power provided by the photovoltaic module over 25 years.  
Generación mínima del 80% de la potencia de salida nominal del módulo a los 25 años.

Measured under standard test conditions and normal operating cell temperature (STC: 1000W/m<sup>2</sup>, 25°C, AM 1.5, NOCT: 800W/m<sup>2</sup>, 45°C, AM 1.5.)  
Medido bajo condiciones de prueba estándar y bajo condiciones de temperatura de operación normales de la celda (condiciones STC, en U.S. - Standard Test Conditions, en U.S.)

The electric characteristics of each photovoltaic module are individually monitored leaving the results available to the customer. Warranted Tolerance ±3%.  
Las características eléctricas de cada módulo fotovoltaico son monitorizadas individualmente dejando los resultados a disposición del cliente. Tolerancia Garantizada ±3%.

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**Applications / Aplicaciones**

- Building Integration / Integración arquitectónica
- Solar Power Ads and Plants / Parques de energía solar
- Solar Charging Systems / Sistemas de carga solar
- Energy Bill Savings / Reducción de costos en energía




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**Contact / Contacto**

**Solartec S.A. de C.V.**  
info@solartec.mx

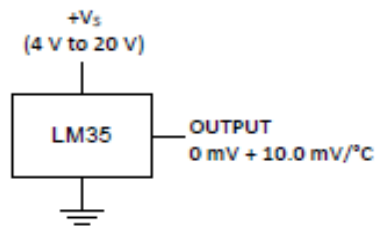
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Lote No. 9, Parque Industrial Apolo  
Irapuato, Gto. México CP 36826  
Phone Number: +52 (462) 635 9828

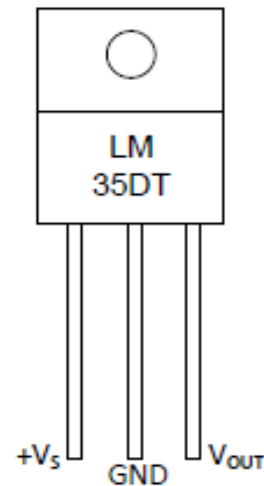
[www.solartec.com](http://www.solartec.com)



Basic Centigrade Temperature Sensor  
(2°C to 150°C)



NEB Package  
3-Pin TO-220  
(Top View)



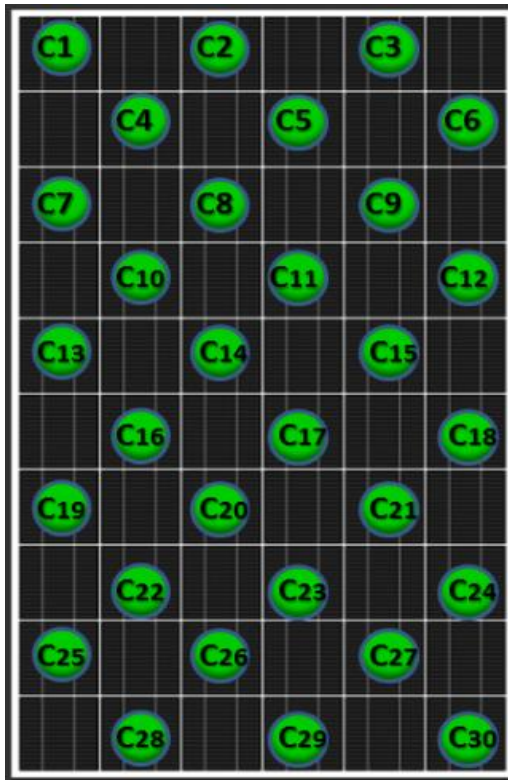
Tab is connected to the negative pin (GND).

NOTE: The LM35DT pinout is different than the discontinued LM35DP

*Sensor LM35, diagrama de conexión y encapsulado*

°C	mV
125	1,250
...	...
45	450
40	400
35	350
30	300
25	250
20	200
15	150
10	100
5	50
0	0
-10	-10
...	...
-40	-400

***Rangos de temperatura del sensor LM35***

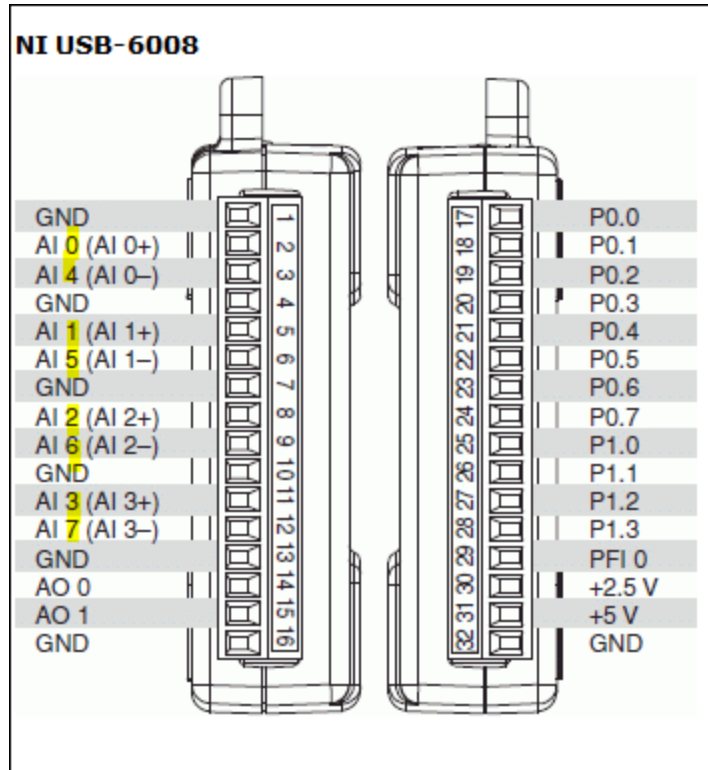


*Ubicación de los sensores de temperatura en el módulo fotovoltaico*

*Vista interior de los sensores de temperatura en el módulo fotovoltaico*

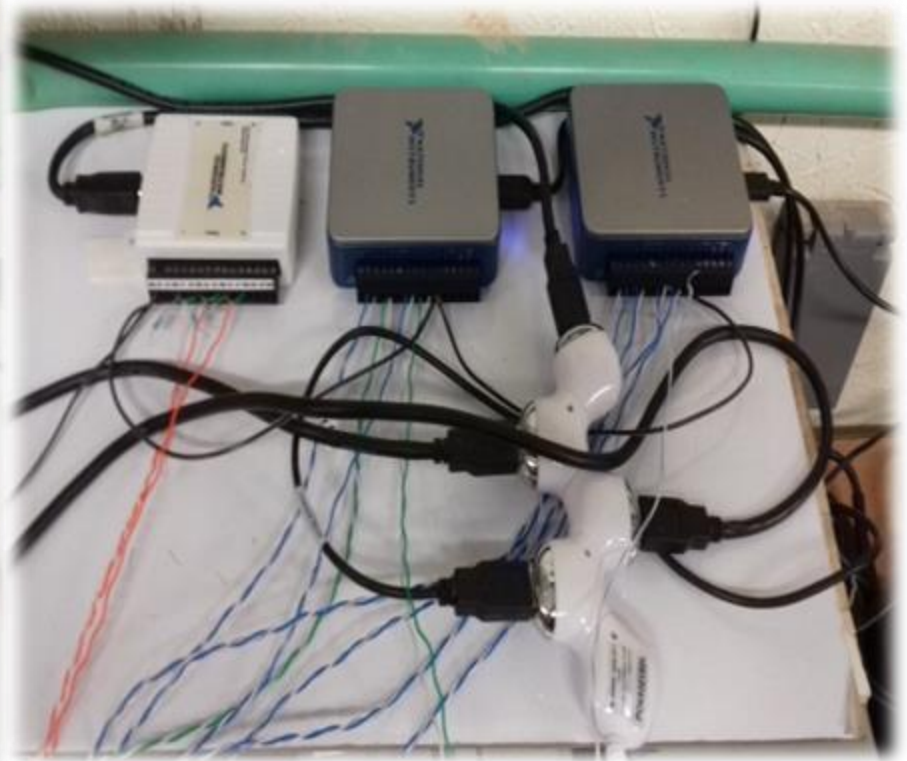
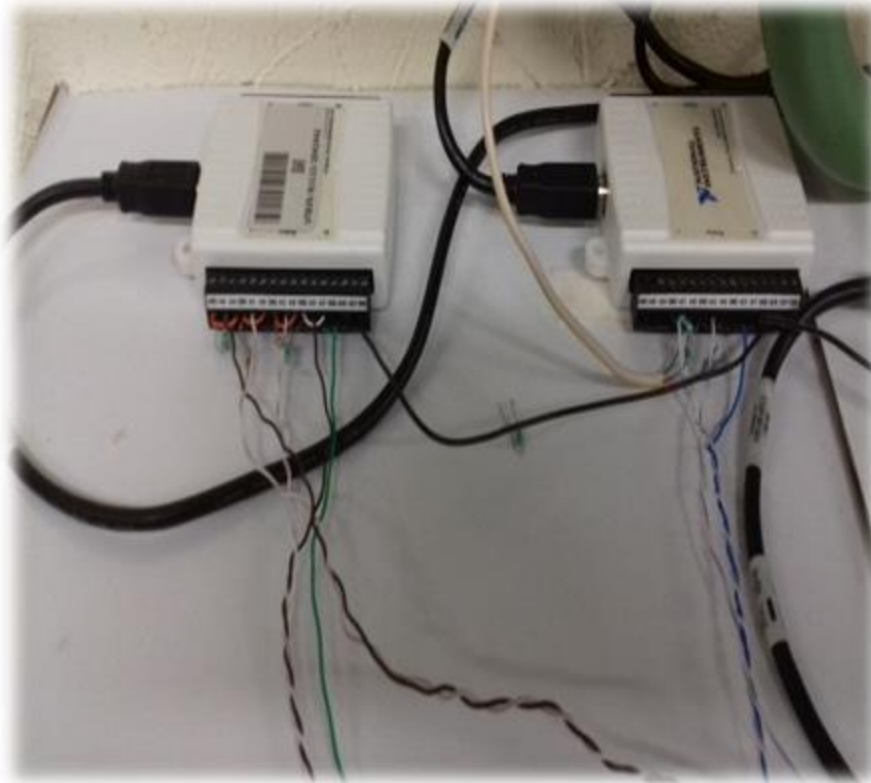






*Tarjeta de Adquisición de Datos, DAQ por sus siglas en Ingles NI USB 6008, con 8 puertos de entrada análogos*

*Tarjetas de adquisición de datos utilizada  
para la concentración de la información hacia  
la PC*



*Pantalla principal del programa para la toma de lecturas de los sensores de temperatura en LabView*





*Pantalla principal del programa para la toma de lecturas de los sensores de temperatura en LabView*



*Pantalla principal del programa con lecturas fuera de rango u anómalas*





*Pantalla con la tabla de datos*

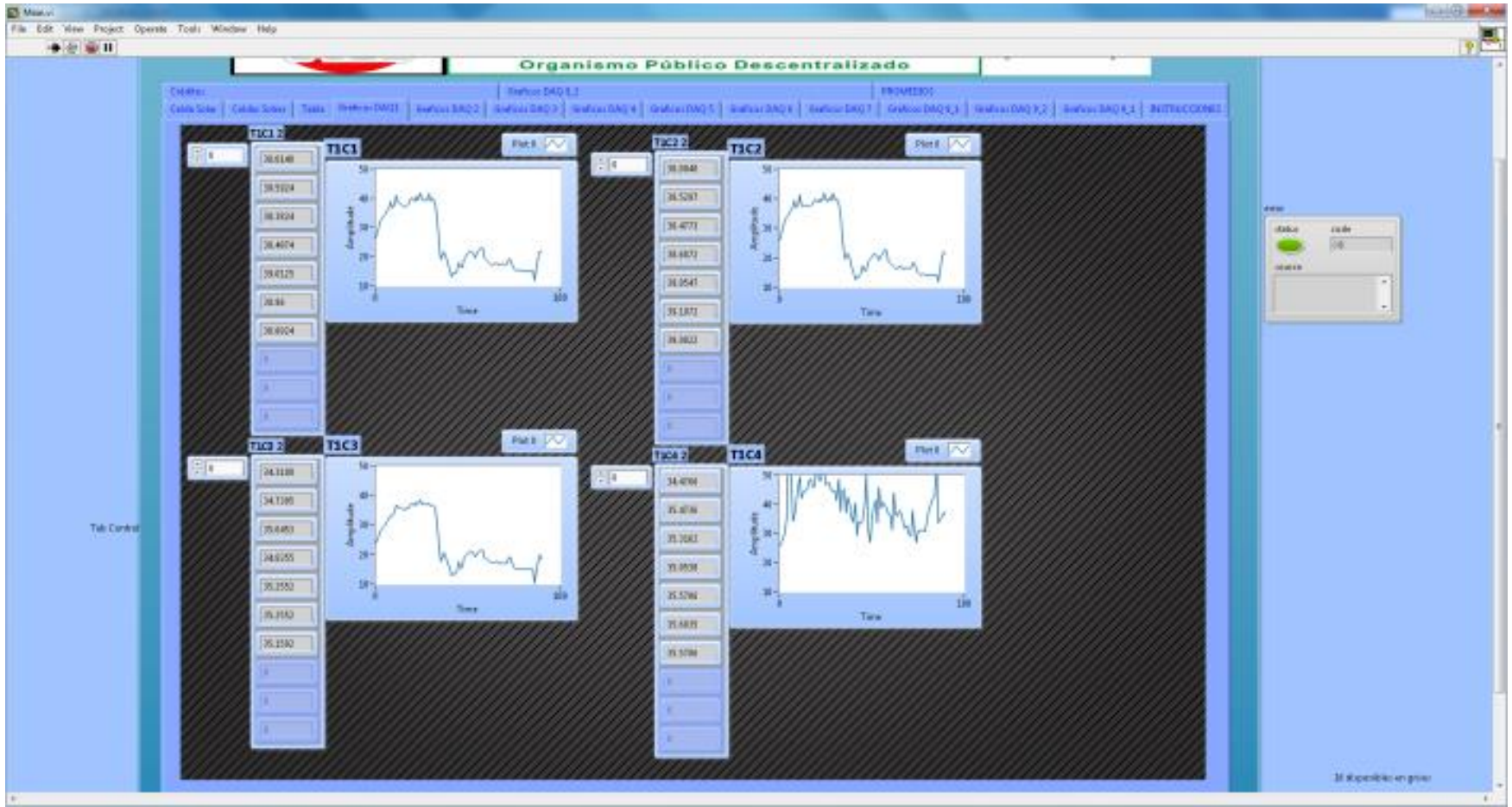


The screenshot shows a web application window with a menu bar and a header containing the university logo and name. The main content area displays a table titled 'Lecturas Gas' with the following data:

OP	Fecha	Pres	T2C1	T2C2	T2C3	T2C4	T2C5
1	15/09/2016	89.2900 kpa	11.81149	11.14019	11.27150	11.51621	11.80546
2	15/09/2016	89.3800 kpa	11.81182	11.14060	11.27099	11.65290	11.63015
3	15/09/2016	89.4600 kpa	11.81268	11.14013	11.26938	11.64691	11.60719
4	15/09/2016	89.5500 kpa	11.81298	11.13295	11.26182	11.34001	11.20645
5	15/09/2016	89.6600 kpa	11.81227	11.13951	11.26498	11.31041	11.51210

Below the table, there is a 'No. Medic' field with the value '1'.

*Grafica de cuatro sensores operando simultáneamente*





*Pantalla con la tabla de datos*



The screenshot shows a web application window with a menu bar (File, Edit, View, Project, Operate, Tools, Window, Help) and a toolbar. The main content area features the logos of Universidad Tecnológica de Bahía de Banderas and upiita-ipn. Below the logos is a navigation menu with options like 'Inicio', 'Inicio DAQ 1', 'Inicio DAQ 2', etc. The central part of the screen displays a table titled 'Lecturas Dia' with columns for 'ID', 'Fecha', 'Hora', and five 'TIC' columns (TIC1 to TIC5). The table contains five rows of data. To the right of the table is a control panel with 'stop', 'start', and 'modo' buttons. At the bottom of the table area, there is a 'No. Muestros' field with the value '1'.

ID	Fecha	Hora	TIC1	TIC2	TIC3	TIC4	TIC5
1	15/06/2016	09:29:00 hrs	11.831028	11.740339	10.271180	10.544021	11.889386
2	15/06/2016	09:30:00 hrs	15.952190	15.740663	13.790189	14.052540	13.832615
3	15/06/2016	09:30:00 hrs	18.361088	20.489913	18.084388	19.840091	14.967919
4	15/06/2016	09:30:00 hrs	20.805568	21.152190	19.851480	19.340071	18.308425
5	15/06/2016	09:30:00 hrs	21.891227	21.119073	17.874088	26.300941	17.527200

## Temperatura registrada en celdas solares con un rango de 0 a 20°C

UTBB\_12092016\_0936 [Modo de compatibilidad] - Microso

Archivo Inicio Insertar Diseño de página Fórmulas Datos Revisar Vista Complementos

Calibri 11 A A Ajustar texto General \$ % 000 000 Forr condic

Portapapeles Fuente Alineación Número

AJ18

**UTBB Medición Temperaturas Celdas Solares**

Fecha: 10/09/2016

			VI01	VI02	VI03	VI04	VI05	VI06	VI07	VI08	VI09	VI10	VI11	VI12	VI13	VI14	VI15	VI16	VI17	VI18	VI19	VI20	VI21	VI22	VI23	VI24	VI25	VI26	VI27	VI28	VI29	VI30	VI31	VI32	VI33	VI34	VI35	VI36	VI37	VI38	VI39	VI40	VI41	VI42	VI43	VI44	VI45	VI46	VI47	VI48	VI49	VI50	VI51	VI52	VI53	VI54	VI55	VI56	VI57	VI58	VI59	VI60	VI61	VI62	VI63	VI64	VI65	VI66	VI67	VI68	VI69	VI70	VI71	VI72	VI73	VI74	VI75	VI76	VI77	VI78	VI79	VI80	VI81	VI82	VI83	VI84	VI85	VI86	VI87	VI88	VI89	VI90	VI91	VI92	VI93	VI94	VI95	VI96	VI97	VI98	VI99	VI100										
1	0	1	22.10	22.09	22.08	22.07	22.06	22.05	22.04	22.03	22.02	22.01	21.99	21.98	21.97	21.96	21.95	21.94	21.93	21.92	21.91	21.90	21.89	21.88	21.87	21.86	21.85	21.84	21.83	21.82	21.81	21.80	21.79	21.78	21.77	21.76	21.75	21.74	21.73	21.72	21.71	21.70	21.69	21.68	21.67	21.66	21.65	21.64	21.63	21.62	21.61	21.60	21.59	21.58	21.57	21.56	21.55	21.54	21.53	21.52	21.51	21.50	21.49	21.48	21.47	21.46	21.45	21.44	21.43	21.42	21.41	21.40	21.39	21.38	21.37	21.36	21.35	21.34	21.33	21.32	21.31	21.30	21.29	21.28	21.27	21.26	21.25	21.24	21.23	21.22	21.21	21.20	21.19	21.18	21.17	21.16	21.15	21.14	21.13	21.12	21.11	21.10	21.09	21.08	21.07	21.06	21.05	21.04	21.03	21.02	21.01	21.00
2	0	1	22.10	22.09	22.08	22.07	22.06	22.05	22.04	22.03	22.02	22.01	21.99	21.98	21.97	21.96	21.95	21.94	21.93	21.92	21.91	21.90	21.89	21.88	21.87	21.86	21.85	21.84	21.83	21.82	21.81	21.80	21.79	21.78	21.77	21.76	21.75	21.74	21.73	21.72	21.71	21.70	21.69	21.68	21.67	21.66	21.65	21.64	21.63	21.62	21.61	21.60	21.59	21.58	21.57	21.56	21.55	21.54	21.53	21.52	21.51	21.50	21.49	21.48	21.47	21.46	21.45	21.44	21.43	21.42	21.41	21.40	21.39	21.38	21.37	21.36	21.35	21.34	21.33	21.32	21.31	21.30	21.29	21.28	21.27	21.26	21.25	21.24	21.23	21.22	21.21	21.20	21.19	21.18	21.17	21.16	21.15	21.14	21.13	21.12	21.11	21.10	21.09	21.08	21.07	21.06	21.05	21.04	21.03	21.02	21.01	21.00

Lista T 0 - 20 Temperatura 20 - 30 T 30 - 50 T > 50



# Temperatura registrada en celdas solares con un rango de 20 a 30°C

**UTBB Medición Temperaturas Celdas Solares**

Fecha: 08/09/2016

NO.	Zona	Area	08/09/2016 10:00 am	08/09/2016 10:15 am	08/09/2016 10:30 am	08/09/2016 10:45 am	08/09/2016 11:00 am	08/09/2016 11:15 am	08/09/2016 11:30 am	08/09/2016 11:45 am	08/09/2016 12:00 pm	08/09/2016 12:15 pm	08/09/2016 12:30 pm	08/09/2016 12:45 pm	08/09/2016 01:00 pm	08/09/2016 01:15 pm	08/09/2016 01:30 pm	08/09/2016 01:45 pm	08/09/2016 02:00 pm	08/09/2016 02:15 pm	08/09/2016 02:30 pm	08/09/2016 02:45 pm	08/09/2016 03:00 pm	08/09/2016 03:15 pm	08/09/2016 03:30 pm	08/09/2016 03:45 pm	08/09/2016 04:00 pm	08/09/2016 04:15 pm	08/09/2016 04:30 pm	08/09/2016 04:45 pm	08/09/2016 05:00 pm	08/09/2016 05:15 pm	08/09/2016 05:30 pm	08/09/2016 05:45 pm	08/09/2016 06:00 pm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
1	UBB 1	UBB 1	28.2	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	49.0	49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9	50.0	50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.3	51.4	51.5	51.6	51.7	51.8	51.9	52.0	52.1	52.2	52.3	52.4	52.5	52.6	52.7	52.8	52.9	53.0	53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	53.9	54.0	54.1	54.2	54.3	54.4	54.5	54.6	54.7	54.8	54.9	55.0	55.1	55.2	55.3	55.4	55.5	55.6	55.7	55.8	55.9	56.0	56.1	56.2	56.3	56.4	56.5	56.6	56.7	56.8	56.9	57.0	57.1	57.2	57.3	57.4	57.5	57.6	57.7	57.8	57.9	58.0	58.1	58.2	58.3	58.4	58.5	58.6	58.7	58.8	58.9	59.0	59.1	59.2	59.3	59.4	59.5	59.6	59.7	59.8	59.9	60.0	60.1	60.2	60.3	60.4	60.5	60.6	60.7	60.8	60.9	61.0	61.1	61.2	61.3	61.4	61.5	61.6	61.7	61.8	61.9	62.0	62.1	62.2	62.3	62.4	62.5	62.6	62.7	62.8	62.9	63.0	63.1	63.2	63.3	63.4	63.5	63.6	63.7	63.8	63.9	64.0	64.1	64.2	64.3	64.4	64.5	64.6	64.7	64.8	64.9	65.0	65.1	65.2	65.3	65.4	65.5	65.6	65.7	65.8	65.9	66.0	66.1	66.2	66.3	66.4	66.5	66.6	66.7	66.8	66.9	67.0	67.1	67.2	67.3	67.4	67.5	67.6	67.7	67.8	67.9	68.0	68.1	68.2	68.3	68.4	68.5	68.6	68.7	68.8	68.9	69.0	69.1	69.2	69.3	69.4	69.5	69.6	69.7	69.8	69.9	70.0	70.1	70.2	70.3	70.4	70.5	70.6	70.7	70.8	70.9	71.0	71.1	71.2	71.3	71.4	71.5	71.6	71.7	71.8	71.9	72.0	72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9	73.0	73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9	74.0	74.1	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9	75.0	75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9	76.0	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.3	80.4	80.5	80.6	80.7	80.8	80.9	81.0	81.1	81.2	81.3	81.4	81.5	81.6	81.7	81.8	81.9	82.0	82.1	82.2	82.3	82.4	82.5	82.6	82.7	82.8	82.9	83.0	83.1	83.2	83.3	83.4	83.5	83.6	83.7	83.8	83.9	84.0	84.1	84.2	84.3	84.4	84.5	84.6	84.7	84.8	84.9	85.0	85.1	85.2	85.3	85.4	85.5	85.6	85.7	85.8	85.9	86.0	86.1	86.2	86.3	86.4	86.5	86.6	86.7	86.8	86.9	87.0	87.1	87.2	87.3	87.4	87.5	87.6	87.7	87.8	87.9	88.0	88.1	88.2	88.3	88.4	88.5	88.6	88.7	88.8	88.9	89.0	89.1	89.2	89.3	89.4	89.5	89.6	89.7	89.8	89.9	90.0	90.1	90.2	90.3	90.4	90.5	90.6	90.7	90.8	90.9	91.0	91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9	92.0	92.1	92.2	92.3	92.4	92.5	92.6	92.7	92.8	92.9	93.0	93.1	93.2	93.3	93.4	93.5	93.6	93.7	93.8	93.9	94.0	94.1	94.2	94.3	94.4	94.5	94.6	94.7	94.8	94.9	95.0	95.1	95.2	95.3	95.4	95.5	95.6	95.7	95.8	95.9	96.0	96.1	96.2	96.3	96.4	96.5	96.6	96.7	96.8	96.9	97.0	97.1	97.2	97.3	97.4	97.5	97.6	97.7	97.8	97.9	98.0	98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0



## Congreso Interdisciplinario de Energías Renovables, Mantenimiento Industrial, Mecatrónica e Informática

**2016**



2016



# Temperatura registrada en celdas solares con un rango de 30 a 50°C

UTBB Medición Temperaturas Celdas Solares		
Fecha: 08/09/2016		
N°	Fecha	Temperatura (°C)
1	08/09/2016	35.00
2	08/09/2016	35.00
3	08/09/2016	35.00
4	08/09/2016	35.00
5	08/09/2016	35.00
6	08/09/2016	35.00
7	08/09/2016	35.00
8	08/09/2016	35.00
9	08/09/2016	35.00
10	08/09/2016	35.00
11	08/09/2016	35.00
12	08/09/2016	35.00
13	08/09/2016	35.00
14	08/09/2016	35.00
15	08/09/2016	35.00
16	08/09/2016	35.00
17	08/09/2016	35.00
18	08/09/2016	35.00
19	08/09/2016	35.00
20	08/09/2016	35.00
21	08/09/2016	35.00
22	08/09/2016	35.00
23	08/09/2016	35.00
24	08/09/2016	35.00
25	08/09/2016	35.00
26	08/09/2016	35.00
27	08/09/2016	35.00
28	08/09/2016	35.00
29	08/09/2016	35.00
30	08/09/2016	35.00
31	08/09/2016	35.00
32	08/09/2016	35.00
33	08/09/2016	35.00
34	08/09/2016	35.00
35	08/09/2016	35.00
36	08/09/2016	35.00
37	08/09/2016	35.00
38	08/09/2016	35.00
39	08/09/2016	35.00
40	08/09/2016	35.00
41	08/09/2016	35.00
42	08/09/2016	35.00
43	08/09/2016	35.00
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45	08/09/2016	35.00
46	08/09/2016	35.00
47	08/09/2016	35.00
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61	08/09/2016	35.00
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63	08/09/2016	35.00
64	08/09/2016	35.00
65	08/09/2016	35.00
66	08/09/2016	35.00
67	08/09/2016	35.00
68	08/09/2016	35.00
69	08/09/2016	35.00
70	08/09/2016	35.00
71	08/09/2016	35.00
72	08/09/2016	35.00
73	08/09/2016	35.00
74	08/09/2016	35.00
75	08/09/2016	35.00
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77	08/09/2016	35.00
78	08/09/2016	35.00
79	08/09/2016	35.00
80	08/09/2016	35.00
81	08/09/2016	35.00
82	08/09/2016	35.00
83	08/09/2016	35.00
84	08/09/2016	35.00
85	08/09/2016	35.00
86	08/09/2016	35.00
87	08/09/2016	35.00
88	08/09/2016	35.00
89	08/09/2016	35.00
90	08/09/2016	35.00
91	08/09/2016	35.00
92	08/09/2016	35.00
93	08/09/2016	35.00
94	08/09/2016	35.00
95	08/09/2016	35.00
96	08/09/2016	35.00
97	08/09/2016	35.00
98	08/09/2016	35.00
99	08/09/2016	35.00
100	08/09/2016	35.00





Estado	Ciudad	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Min	Max	Med
Jal/Nay	PV/BAdeB A	5.2	5.7	6	5.8	5.7	5.5	5.6	5.7	5.5	5.6	5.2	4.7	4.7	6	5.5

*Horas solares pico para la región de Bahía de Banderas, Nayarit*



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