

# Green Generation- Heat Insulation Solar Glass

## Heat Insulation Solar Glass (Solar thin film + Heat isolation thin film)

### Application

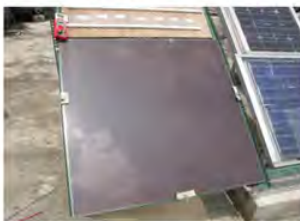


**Power generation  
+  
Heat insulation  
+  
Self-cleaning**

### Benefits

- (1) Generate power :  $46W / m^2$
- (2) Heat isolation :  $10^{\circ}C$  difference between outdoor and indoor.
- (1) Self-cleaning
- (2) Summer time : save air condition expense
- (3) Winter time : save heater expense
- (4) Transparent : save light expense
- (5) UV transmission 0%
- Infrared transmission 0%
- Heat transmission 1% (protect people and furniture inside)
- (8) See through 10% from inside : see the sky but not so harsh to the eyes
- (9) Not see through from outside : Keep Private
- (10) More good looking than current solar roof

### Power generation function



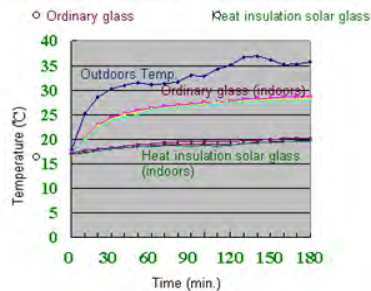
Outdoors power generation test

Direction: South      Slope:  $23.5^{\circ}$   
Time: 12:02 p.m.      Date: 2008/03/31



voltage (DCV)	current (DCA)	power (W)
82.1	0.66	54.186

### Heat Insulation Function Indoor thermal test (No air condition)



### Heat Insulation Solar Glass

See through 10%

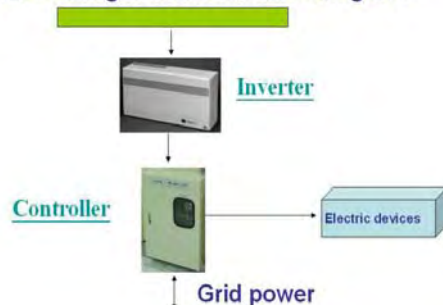
No glass      Heat Insulation solar glass



Applied on window

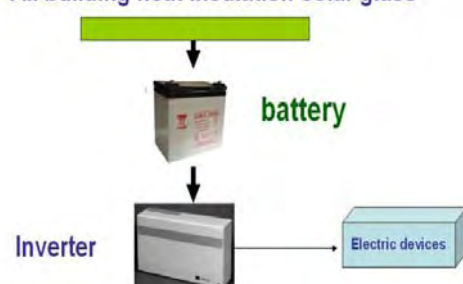
### power supply system 1: Grid- connected system

All building heat insulation solar glass










### Power supply system 2: Independent generation


All building heat insulation solar glass




# Heat Insulation Solar House (Gain Energy+ Save Energy)

<b>Type</b> (Test Date: 2008/11/05 Location: Taipei, Taiwan Weather: Sunny, Hot)	<b>Heat Insulation Solar House</b> 	<b>Ordinary House</b> 
<b>Power Generation</b> (Roof : 2m <sup>2</sup> ) (Window : 2m <sup>2</sup> )  (Gain Sun Power Energy)	<b>Roof :</b> 82.0 V 1.55A 127W  <b>Window :</b> 82.0 V 1.18A 95W 	
<b>Heat Insulation</b> (Save Air Condition Expense)	<b>Roof Surface : 47.5 C</b> <b>Indoors Air : 31.5 C</b> 	<b>Roof Surface : 48 C</b> <b>Indoors Air : 40.4 C</b> 
<b>Light Penetration</b>	<b>Soft</b> 	<b>Harsh</b> 


### Air condition testing




Heat insulation solar glass



Ordinary 10 mm tempered glass



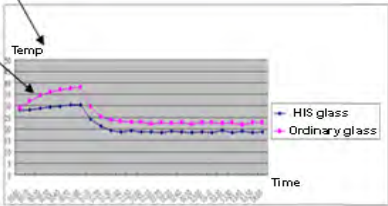
Energy consumption : 0.8 Kwh



Energy consumption : 1.5 Kwh

HIS glass possess both better cooling effect and energy saving

Heating 1 hour and then cooling 3 hours




Temp

Time

— HIS glass  
— Ordinary glass

Setting air Condition to 16 C



## SPECIFICATION:

HIS	Transparency	Thickness(mm)	Watt	Photocatalyst
	10%	29 (non temp)	46	T: coating
	5%	33 (temp)	52	N: non coating

Standard Size : 980mm × 950mm

## ORDER INFORMATION:

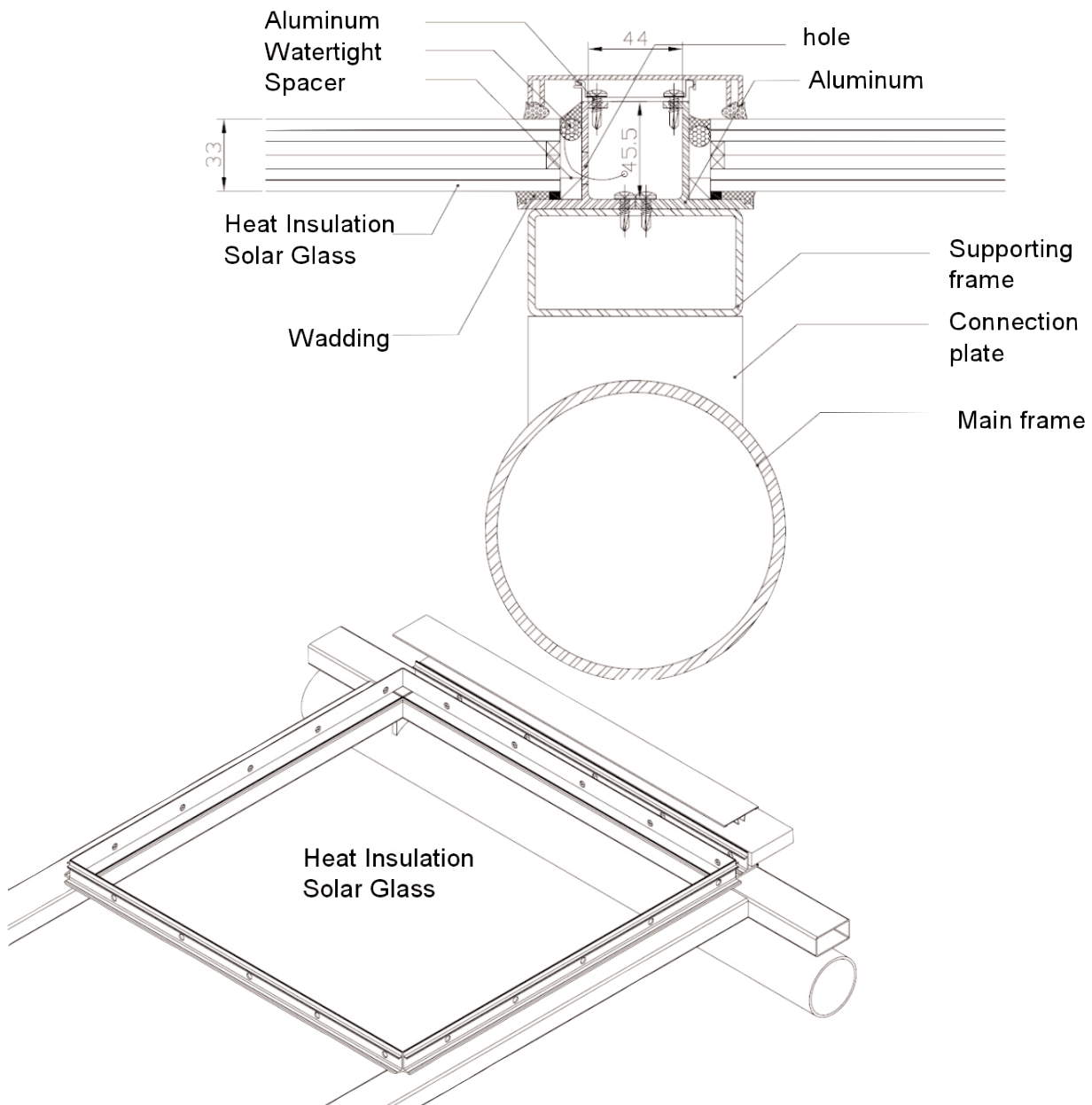
**HIS**   10   29   46   T  
 ↓   ↓   ↓   ↓  
 Transparency   Thickness   Watt   Photocatalyst



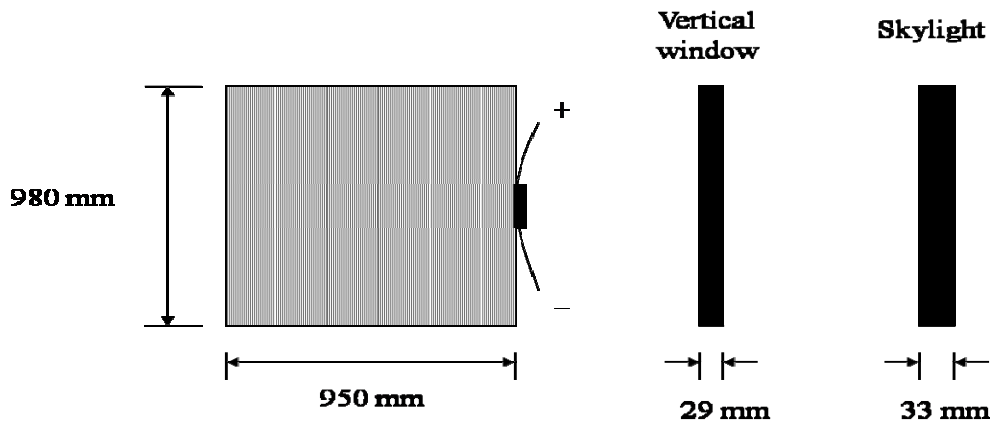
Alsvej 5 – DK-8940 Randers SV – Tlf. 87119999 – Fax 87119990

web: <http://www.actec.dk/> - Email: info@actec.dk

## Example of assembly



# Spec. of Heat Insulation Solar Glass



## ELECTRICAL DATA

Transmittance	10%	5%
Output power	44 W	50 W
Max. power voltage	59.6 V	64.4 V
Max. power current	0.74 A	0.78 A
Open circuit voltage	91.8 V	91.8 V
Short circuit current	0.97 A	1.09 A

## HEAT INSULATION DATA

SC (Shading Coefficient)	0.144
U (W/m <sup>2</sup> K)	1.65
RHG (W/m <sup>2</sup> )	104
Heat transmittance (%)	2.6
Air condition saving (%)	50
K value (W/m K)	0.032

## OPTICAL DATA

Visible light	Transmitted	7.34 %
	Reflected	7.9 %
Total solar energy	Transmitted	2.8 %
	Reflected	18 %
	absorbed	79.35 %
IR	rejected	100 %
UV	rejected	100 %

## MECHANICAL DATA

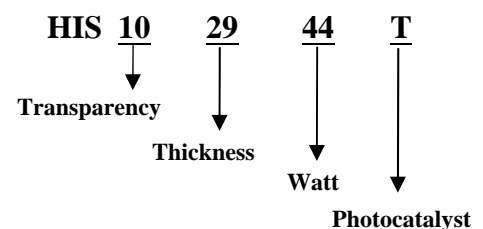
Length (mm)	980	
Width (mm)	950	
Thickness (mm)	Vertical window	29
	Skylight	33
Wind resistance (kg/M <sup>2</sup> )	580	
Weight (Kg)	Vertical window	35
	Skylight	37

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