



City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
 Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

PERMIT CARD – PLEASE POST AT JOB SITE

THIS DOCUMENT BECOMES YOUR PERMIT WHEN PROPERLY VALIDATED

Per FBC 105.3.3: An enforcing authority may not issue a building permit for any building construction, erection, alteration, modification, repair or addition unless the permit either includes on its face or there is attached to the permit the following statement: "NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies." The issuance of this permit does not grant permission to violate any applicable City, Orange County, State of Florida and/or Federal codes and/or ordinances. Separate permits are required for Signs, Roofing, Electrical, Gas, Plumbing and Mechanical services. This permit becomes VOID if the work authorized is not commenced within 6 months, or is suspended or abandoned for a period of 6 months after commencement. WORK SHALL BE CONSIDERED SUSPENDED IF AN APPROVED INSPECTION HAS NOT BEEN MADE WITHIN A 6 MONTH PERIOD. PERMISSION IS GRANTED TO DO THE FOLLOWING WORK ACCORDING TO THE CONDITIONS HEREON AND THE APPROVED PLANS AND SPECIFICATIONS, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF BELLE ISLE, FLORIDA.

Scope of Work: PLUMBING for Solar Hot Water
Comments: None

Project Information
 Address: 1307 E. Wallace Street, Belle Isle, FL 32809
 Parcel ID: 24-23-29-3400-00-078
 Property Owner: Hafley, Michael & Patricia
 Phone Number: None

 Company Name: Solar-Ray Inc
 Contractor Name: Weirich, Carl
 License Number: CVC56880
 Address: 6007 Anno Ave, Orlando, FL 32809
 Phone Number: 407-443-4404

Permit Number: 2015-04-058
Date of Application: 04/24/2015
Date Permit Issued: 04/27/2015

WARNING TO OWNER: "YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT." ON THE JOB INSPECTION(S) MUST BE MADE BEFORE PROCEEDING WITH SUBSEQUENT WORK. THIS CARD MUST BE DISPLAYED OUTSIDE AND BE PROTECTED FROM THE WEATHER WHILE BEING VISIBLE FROM THE STREET UNTIL THE FINAL INSPECTIONS HAVE BEEN APPROVED.

BUILDING FEATURES

IMPACT FEES
 School \$
 Traffic \$

ZONING FEES
 Zoning Fee \$

UNIVERSAL ENG - BUILDING FEES

Cert of Occ	\$
Demo	\$
Building	\$
Fence	\$
Driveway	\$
Shed	\$
Window(s)	\$
Door(s)	\$
PrePower	\$
Electrical	\$
Temp Pole	\$
Plumbing	\$109.50
Mechanical	\$
Gas	\$
Roofing	\$
Boat Dock	\$
Screen Encl	\$
Swimming Pool	\$
Sign	\$

SURCHARGE FEES

Surcharge Fee	\$2.00
Surcharge Fee	\$2.00

TOTAL FEES \$113.50

Date Paid 4-28-15
CC or Check # VISA 8271
Amount Paid 113.50

The person accepting this permit shall conform to the terms of the application on file and construction shall conform to the requirements of the Florida Building Code (FS 553).

BUILDING INSPECTOR USE ONLY

IF APPLICABLE:
 Have Zoning Approval Conditions Been Met? YES NO Have Stormwater Approval Conditions Been Met? YES NO Silt fencing in place? YES NO Turbidity Barrier in place? YES NO

€ **BUILDING**

1st _____ (Footing/Foundation)
 Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? ____

2nd _____ (Slab)

3rd _____ (Lintel)(Wall Reinforcing on Masonry Building)

4th _____ (Exterior Framing)(Roof/Wall Sheathing)

5th _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins & Windows/Doors Installed)

6th _____ (Insulation to be Made After Roof Installed)

7th _____ (Drywall)

8th _____ (Sidewalk/Driveway)

9th _____ (Other)

10th _____ (Final – After MEP and Other Applicable Finals)

€ **ROOFING**

1ST ROOFING Deck Nailing/Dry-in/Flashing _____

2nd ROOFING Covering In-Progress _____

3rd ROOFING Covering Final _____

€ **PLUMBING** (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...)

€

1ST _____ (Underground) 2nd _____ (Sewer)

3rd _____ (Rough-In/Tub Set) 4th _____ (Final)

CHECK APPROPRIATE BOX

€ **GAS** __ Natural __ LP € **MECHANICAL** € **ELECTRICAL** € **LOW VOLTAGE**

1st _____ (Rough-In) 2nd _____ (Final)

Inspection requests are to be emailed to BDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. Next-Day Inspection requests must be made by 1pm. Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed.

PROJECT NUMBER 0115.1300623.000

TASK NUMBER 17

CITY OF BELLE ISLE
Permit Application Review Sheet

Permit Number	2015-04-058
Property Owner	H. Pley
Address	1307 E. Wallace St.
Nature of Improvement	Solar- for hot water for house use
Received Application	4-24-15
Sent for Stormwater Review	
Stormwater Approved	✓
Sent for Zoning Review	
Zoning Approved	✓
Applied for Variance	
Variance Approved	
Sent to BO for Review	4-24-15
Building Official Approved	Richard Oles via email
Comments	
1.	Susan 4-24-15 review w/ # 52215
2.	per Collina- no zoning needed
3.	all credentials on file
4.	Susan 4-24-15 Per Collina- emailed to Richard
5.	Need NCC
6.	
7.	
8.	NCCs under
9.	2015-04-017
10.	Same project
11.	
12.	

73
36.50

109.50

Susan Manchester

From: Richard Olds
Sent: Saturday, April 25, 2015 5:53 PM
To: Susan Manchester
Subject: RE: 4 First Ct Mechanical & 1307 E. Wallace Solar attached for review

Susan,
Please approve for me both of these permit requests. I will add .5 hr work time for each.....Thanks, Richard

From: Susan Manchester
Sent: Friday, April 24, 2015 3:43 PM
To: Richard Olds
Cc: BIDReviews
Subject: 4 First Ct Mechanical & 1307 E. Wallace Solar attached for review

Hi Richard,

Collina advised you would look at these over the weekend.

Thank you,

Susan Manchester
Universal Engineering Sciences, Inc.
3532 Maggie Blvd.
Orlando, FL 32811
Phone: 407-581-8161
Fax: 407-581-0313
Email: smanchester@universalengineering.com





City of Belle Isle
 Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
 Tel 407-581-8181 * Fax 407-581-0313 * www.universaleengineering.com

RECEIVED
 4-24-15

APPLICATION FOR PLUMBING PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: 4-23-2015 PERMIT NUMBER: 2015-04-058
 The undersigned hereby applies for a permit to make plumbing installations as indicated below. PLEASE PRINT
 Project Address 1307 E. Wallace Street, Belle Isle FL 32809 32812
 Property Owner Michael & Patricia Hafley Phone 727-687-2518
 Property Owner's Mailing Address same City _____
 State _____ Zip Code _____ Parcel Id Number: 24-23-29-3400-00-078
 To obtain this information, please visit <http://www.ocpafi.org/Searches/ParcelSearch.aspx>

Class of Building: Old New Type of Building: Residential Commercial Other
 Type of Work: New Alteration Addition Repair Type of System: Sewer Septic Re-pipe

YOU MAY BE REQUIRED TO PROVIDE SEPTIC SYSTEM VERIFICATION FOR NEW / ALTERED / ADDITION to Septic System - ORANGE COUNTY DOCUMENT 84E-6

VALUATION OF JOB (labor & materials) \$ 3800.00

FIXTURES	Quantity
Water Closets (Toilet)	
Bathtubs	
Urinals	
Disposals	
Washing Machines	
Water Heaters	1
Sewer	
Catch Basins/Sumps	
Service Sink	
Lavatory (Bathroom Sink)	
Showers	
Sinks	

FIXTURES	Quantity
Dishwashers	
Laundry Tubs	
Floor Drains	
Grease Traps	
Trailer Connections	
Spa	
Solar	1
Pool Piping	
*Irrigation: (# Systems / # Heads)	
Water Softener	
Re-pipe	
Miscellaneous (Specify)	

**Per FBC, Sec. 608, a Backflow Preventer must be installed & tested; the report must be posted with permit for Final Inspection.*

Building Official: Richard Ols Date 4-27-15
 Verified Contractor's Licenses & Insurance are on file [Signature] Date 4-27-15

Permit Fee 73.00
 Review Fee 36.50
 3% State Surcharge (\$4.00 minimum) 4.00
 Total Permit Fee 113.50

I hereby certify that the above is true and correct to the best of my knowledge and make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances.

LICENSE HOLDER SIGNATURE [Signature] LICENSE # CVC56880
 LICENSE HOLDER NAME Carl Weirich COMPANY NAME Solar-Ray Inc
 Street Address 6007 Anno Ave.
 City Orlando State FL Zip Code 32809 Phone Number 407-443-4404
 Email Address carl@solar-ray.net

NOTE: The Building Permit Number is required if the Plumbing Installation is associated with any construction or alteration where a Building Permit has been issued.

Building Permit Number _____



Residential Electric Indirect
Solar Booster Water Heaters

RESIDENTIAL ELECTRIC INDIRECT SOLAR BOOSTER WATER HEATERS

A. O. Smith 80 and 120-gallon indirect solar booster water heaters are specially designed for installation as part of closed loop solar water heating system. They provide an energy-efficient supplementary source of water heating power and hot water storage to help maintain consistent water temperature during periods when the solar components cannot keep up with system demands. Count on A. O. Smith for innovative products that provide hot water solutions for residential renewable-energy applications.

INTERNAL HEAT EXCHANGER

- Single wall internal heat exchange coil for the most efficient heat transfer from solar panels
- Suitable for propylene glycol heat transfer fluid with corrosion inhibitor

LONG-LASTING LOW-WATT DENSITY COPPER HEATING ELEMENT

- Low-watt density design spreads wattage over larger surface area to prolong element life and maximize energy-efficiency
- Prewired for surface mount temperature sensor (sensor supplied separately)

2 INCH-THICK ENVIRONMENTALLY FRIENDLY NON-CFC FOAM INSULATION FOR HIGH ENERGY-EFFICIENCY

PERMAGLAS® GLASS TANK COATING

- Patented PermaGlas lining helps maximize tank life against corrosion and buildup

DYNACLEAN™ DIFFUSER DIP TUBE

- Helps reduce lime and sediment buildup to maximize hot water output
- Made from long-lasting PEX cross-linked polymer

TWO COREGARD™ ANODE RODS

- Primary and secondary magnesium anodes with stainless steel core protect tank against corrosion longer than ordinary anodes

FACTORY INSTALLED CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE



MODEL SUNX-80



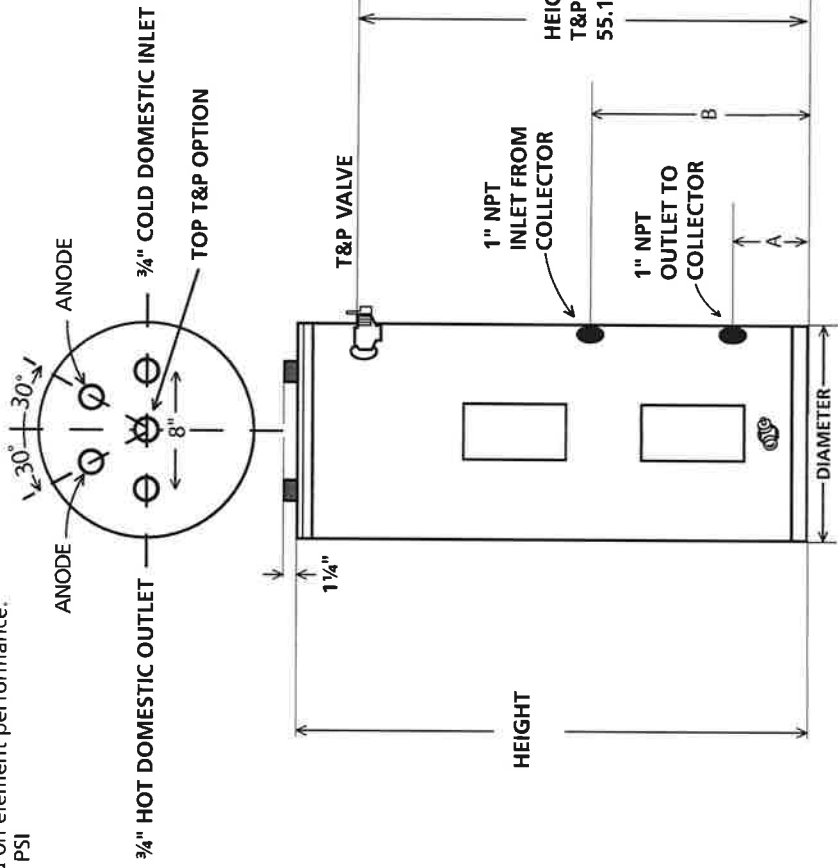


Residential Electric Indirect Solar Booster Water Heaters

RESIDENTIAL ELECTRIC INDIRECT SOLAR BOOSTER WATER HEATER

MODEL NUMBER	GALLON CAPACITY	ELEMENT WATTAGE (240 VOLT)	RECOVERY 90° RISE GALLONS PER HOUR	NUMBER OF ELEMENTS	FOAM THICKNESS (INCHES)	DIMENSIONS IN INCHES			APPROX. SHIPPING WEIGHT (LBS)	
						HEIGHT	A	B		DIAMETER
SUNX-80	76	4500	21	1	2	63-1/4	5-3/8	30-1/8	24	257
SUNX-120	108	4500	21	1	2	63-1/4	5-3/8	26-1/2	28	365

All dimension in inches.
Recovery capacity based on element performance.
Working Pressure = 150 PSI





Approved Solar Energy System

Approval Date: FEB 2010

FSEC # S00170B

DISTRIBUTOR	SYSTEM
Solene 950 Sunshine Lane Altamonte Springs, Florida 32714	Solene/Aurora 40DC

This system was evaluated by the Florida Solar Energy Center (FSEC) in accordance with the Florida Standards Program for Solar Domestic Water and Pool Heating Systems (FSEC Standard 104-05) and was found to meet the minimum standards established by FSEC.

	North	Central	South
The calculated Florida Energy Factors for this system are:	3.2	3.5	3.5

DESCRIPTION

Collector Manufacturer	Model Number	Units	Total Rating (Btu)
1. Solene	Solene/Aurora SLAR-40	1	37,900
2.			
3.			
4.			

Tank Manufacturer	Model Number	Capacity (gal)	Type: Direct
1. Lochinvar	FTA-082K	80	
2. Rheem	81RV80-1	80	
3. AO Smith	Sun 80	80	
4. Any Equivalent UL listed Tank		80	

Pump Manufacturer	Model Number	Power Draw (Watts)	Rated Power
1. TACO	006BC4	75	1/40 H.P.
2. March	809-BR	30	1/100 H.P.
3. Grundfos	UP1518	85	1/25 H.P.
4. Wilo	Star 8	50	1/25 H.P.

Controller Manufacturer	Model Number	Type: Differential controller
1. Goldline	GL-30	
2. Goldline	GL-30LCO	
3. STECA	TR0301U	

Freeze Protection

- Freeze prevention valve
- Manual drain down

Other Major Components

-
-

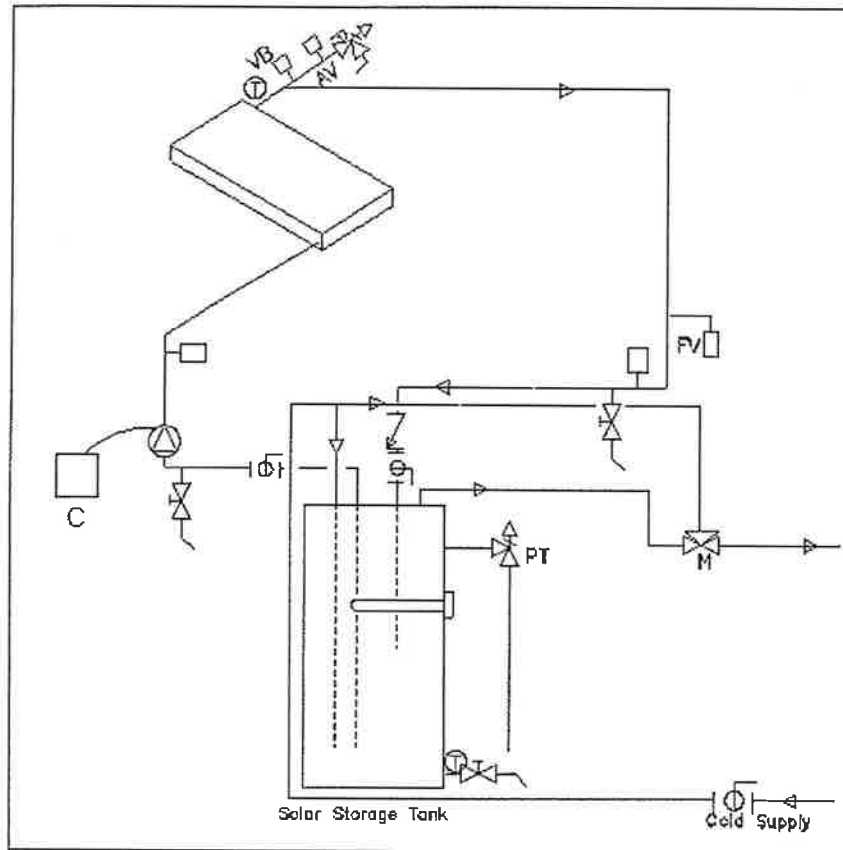




Approved Solar Energy System

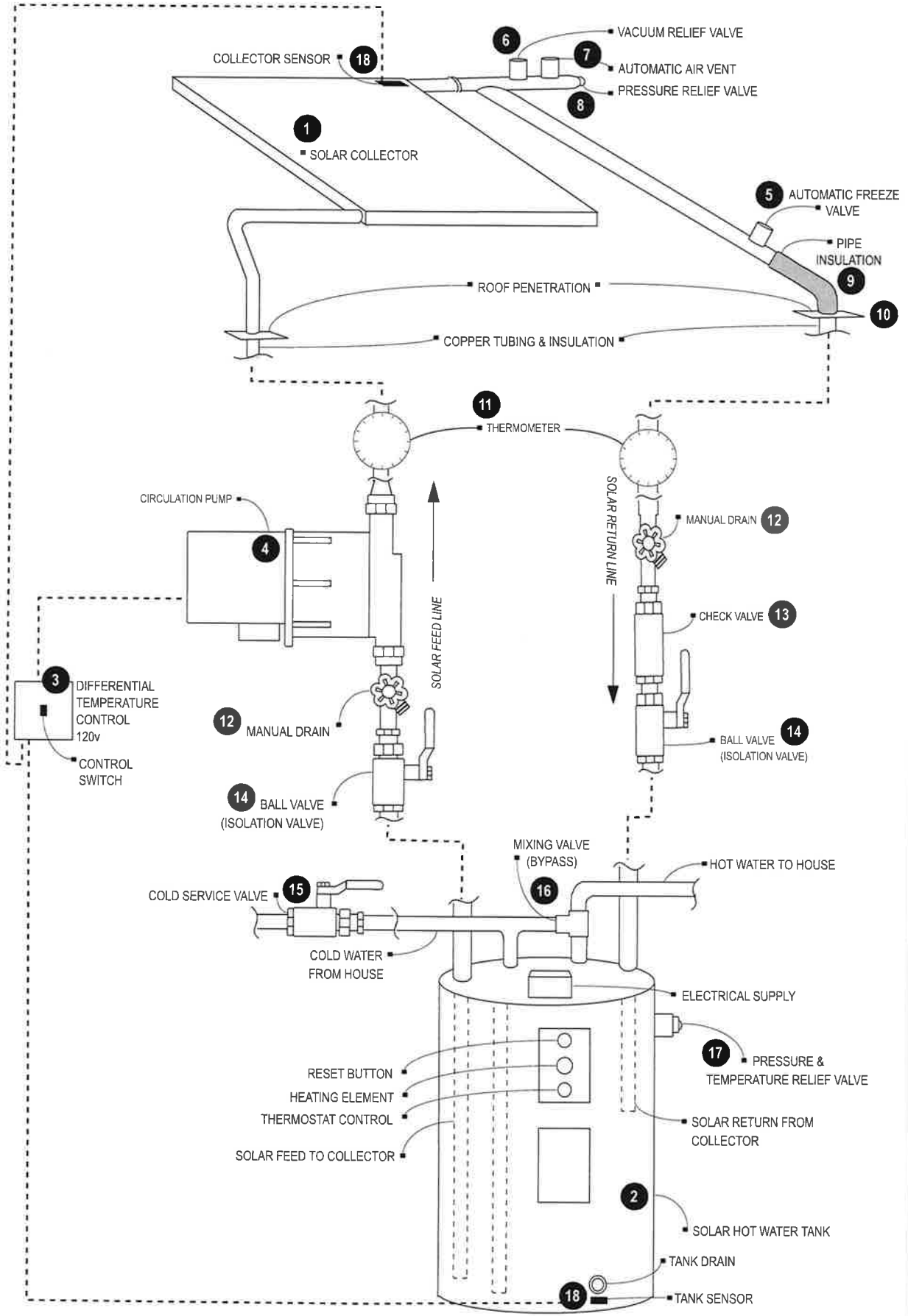
Approval Date: FEB 2010

FSEC # S00170B



MODEL SLCR40DC-80
 MODEL SLCR32DC-66

SOLENE DHW SYSTEM SCHEMATIC



AURORA Solar Collectors by Solene™

SPECIFICATIONS AND EFFICIENCIES



model

SLAR -40

general specifications

Gross Area (sq. ft.)
Net Aperture Area (sq. ft.)
Ratio Net/Gross Area
Length (in.)
Width (in.)
Thickness (in.)
Weight (lbs.)
Fluid Capacity (gal.)
Recommended Flow Rate
Test Pressure (psi)
Operating Pressure (psi)

40.38
37.44
0.95
120.25"
48.38"
3.88
134
1.05
1 gpm
160
145

efficiency ratings

Low Temp (95° F)
Intermediate Temp (122° F)
High Temp (212° F)
Btu per Square Foot
Efficiency Equation

SLAR -40

45,700
37,900
16,400
976
78.7-81 (Ti/Ta)/I

Ti = Water temperature (T out - T in)/2 F
Ta = Ambient temperature F
I = Solar radiation Btu/hr/ft²

Efficiency ratings as measured by the
Florida Solar Energy Center (FSEC).



OG-100 Collector A



950 Sunshine Lane
Altamonte Springs, FL 32714
Toll Free 1-866-902-0060
www.solene-usa.com



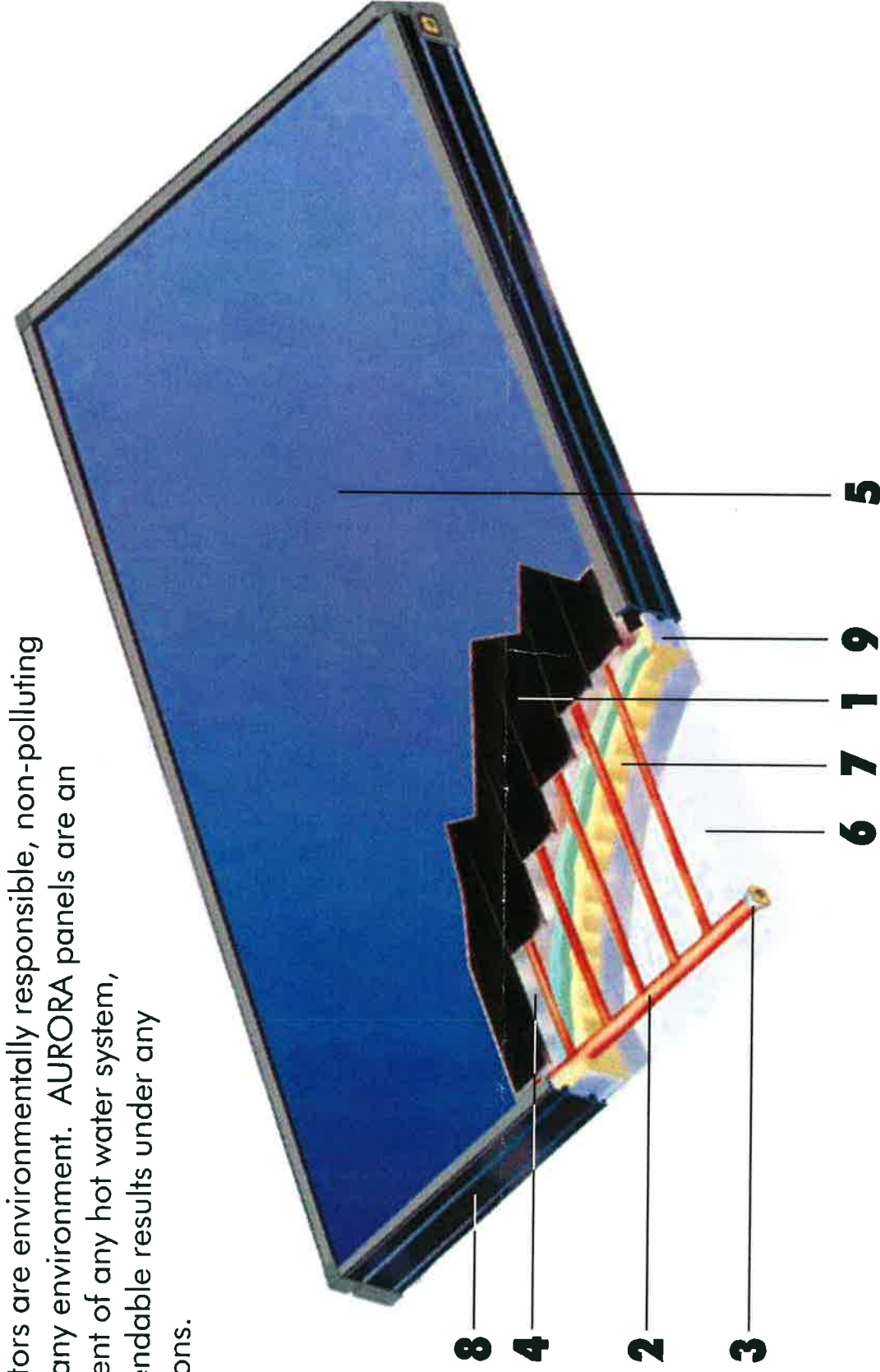
AURORA Solar Collectors by Solene™



TECHNOLOGICALLY ADVANCED ENGINEERING FOR MAXIMUM PERFORMANCE

AURORA Solar Collectors are the most technologically advanced collectors on the market today. AURORA features the highest quality materials & state-of-the-art engineering to provide maximum efficiency & durability you can depend on for years to come.

AURORA collectors are environmentally responsible, non-polluting and reliable in any environment. AURORA panels are an important element of any hot water system, producing dependable results under any weather conditions.



1. Absorber Plate

Utilizing a state-of-the-art ultrasound weld, copper fins and risers provide superior thermal connectivity between the fins and risers. Revolutionary coating is black chrome on nickel, producing a premium selective surface with maximum efficiency for solar energy use.

Absorbability = 0.95
Emissivity = 0.12

2. Tubing Grid

3/8" copper risers are brazed to 1" copper mainfolds for optimal flow distribution.

3. Piping Connection

Four 1" Type M copper tubes.

4. Aluminum Foil

Attached to the insulation, acts as a barrier against out-gasing.

5. Solar Glass Glazing

A single pane of 1/8" thick solar glass is patterned to reduce reflection and tempered to maximize strength and durability.

*Iron oxide content:
0.03%

*Solar transmittance: 91%

6. Back Plate

Fiberglass Backing: Reduces torque in the frame, is lightweight and eliminates the possibility of any electrolysis issues for maximum benefit.

7. Insulation

1-3/16" polyurethane foam casing and around the side of the absorber retains the heat of the water in the DFC-free P.U. meets U.S. and I standards.

8. Casing

All aluminum extrusion casings are sleek framewall. Unique extruded allows easy anchoring to the roof tile, tar) or collector stands.

9. Gaskets

All-around EPDM gasket. Highly resistant to temperature differences and UV rays. Absorbs the differential expansion and glazing.



The best investment under the sun!