

Sell Solar TODAY with Solar in a Box<sup>®</sup>



  
**ReadySolar**

*The Most Cost-Effective Solar Solution*

# Sell Solar TODAY with Solar in a Box

## Ready Solar 101



- Photovoltaic Technology
- Solar in a Box
  - Product
  - Advantages
- Solar Growth Market
- Selling Solar in a Box
  - Pricing & incentives
  - Tools for effective sales
  - Frequently asked questions

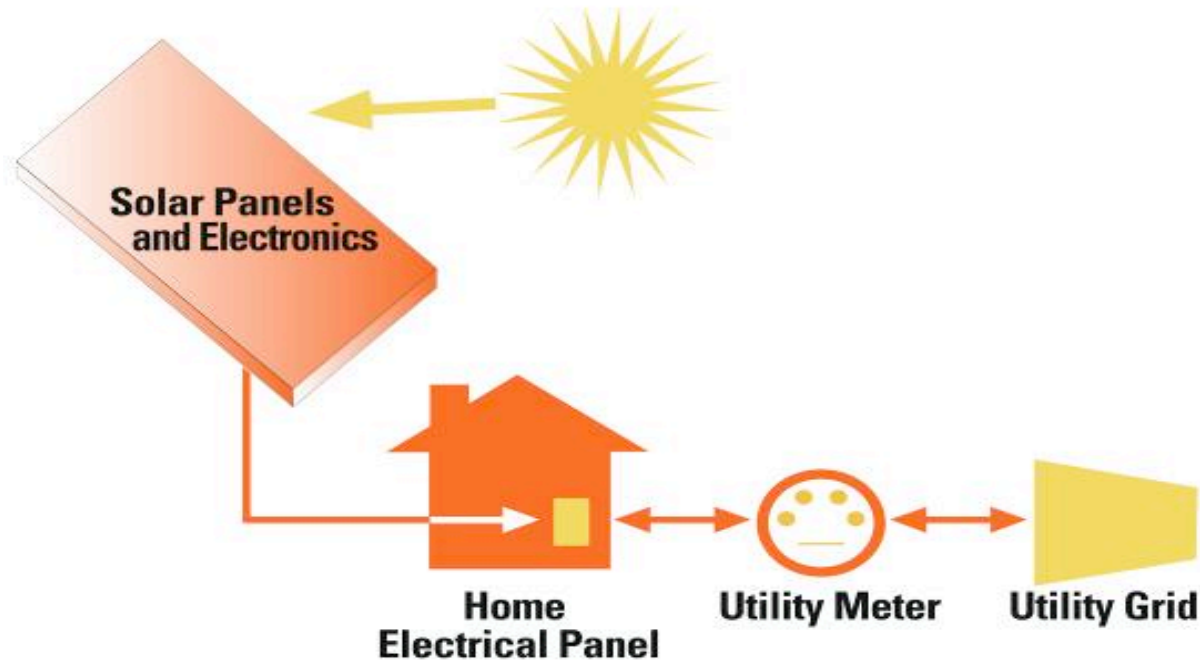
# About Ready Solar



- Founded in 2004.
- Shipping all AC product with microinverters since August 2008.
- Headquartered in San Mateo, CA (near San Francisco).
- 2 design patents and 1 patent pending.
- U.S. production and warehousing in Los Angeles, CA.
- Nationwide network of representatives and distribution partners



# How Solar Electric Systems Work



- Solar electric or photovoltaic (PV) systems produce electricity.
- Grid-tied systems lower electric bills and produce positive environmental benefits.
- No batteries.

# How Reliable are Solar Electric Systems?



- Bell Labs invented the silicon solar cell in 1954.
- Proven, long lasting technology in harsh environments.
- “Thin film” for solar farms.



**25 year warranty** from manufacturers like: Sharp, Sanyo, BP Solar, GE, Mitsubishi, others.

# Ready Solar vs. Traditional Solar



Traditionally, solar has been complicated:

- Complicated to sell.
- Complicated to design and engineer.
- Complicated to source equipment.
- Complicated to build.

**Ready Solar makes it easy to get into the solar business!**

- Simple tools to sell solar.
- Pre-engineered and pre-designed product.
- Simple packaging – 4 different boxes to build a system.
- Pre-assembled product is easier and faster (1/2 the time) to install.

**And Ready Solar offers a higher performance and better looking product at a competitive price!**

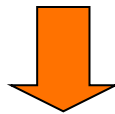
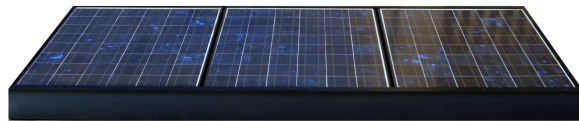


# Pre-assembled Design Makes it Easy to Install



*Only Solar in a Box comes pre-assembled*

**Solar in a Box**



**Old Way**

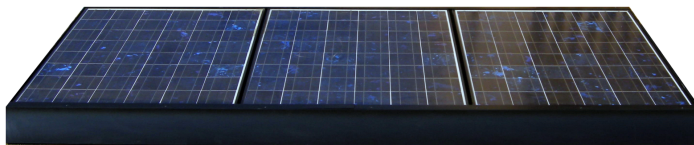
vs.



# Complete Pre-assembled Rooftop Units



Solar in a Box includes solar modules, racking frame, micro-inverters, and grounding in one factory assembled unit.



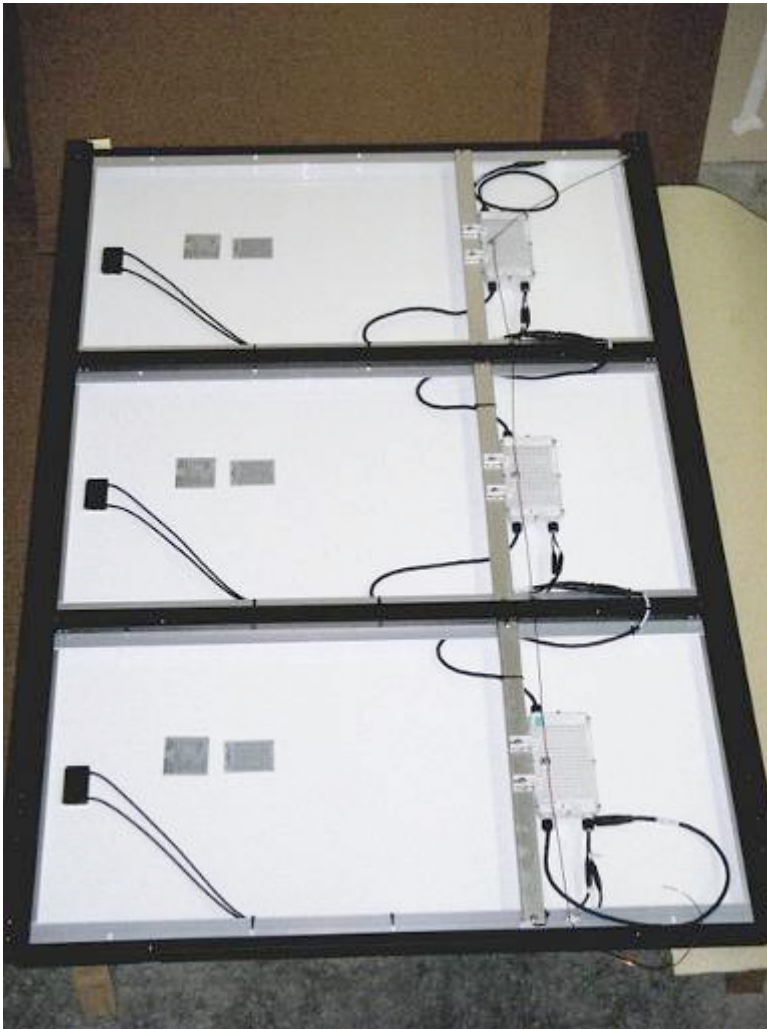
**510 Watt unit**



**400 Watt unit**

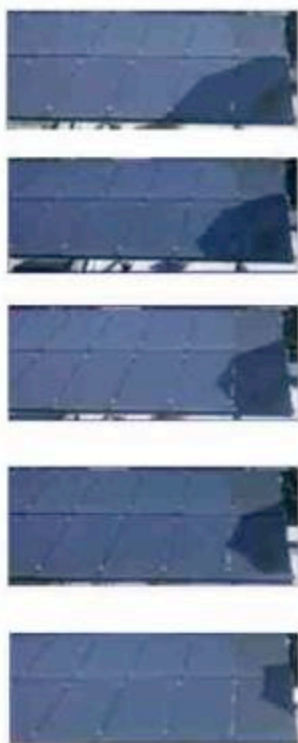


# Micro-inverters - All AC solution



- Pre-installed micro-inverters automatically convert solar modules' DC power to AC
- No DC wiring/disconnects, or inverter installation requirements – safer, easier, faster
- Eliminates single point of failure
- **Higher performance under partially shaded conditions**

# Shade Disproportionately Affects Production of Single Inverter Systems



| % of Array Shaded | Power Loss Due to Shade |
|-------------------|-------------------------|
| 13%               | 44%                     |
| 11%               | 47%                     |
| 9%                | 54%                     |
| 6.5%              | 44%                     |
| 3%                | 25%                     |

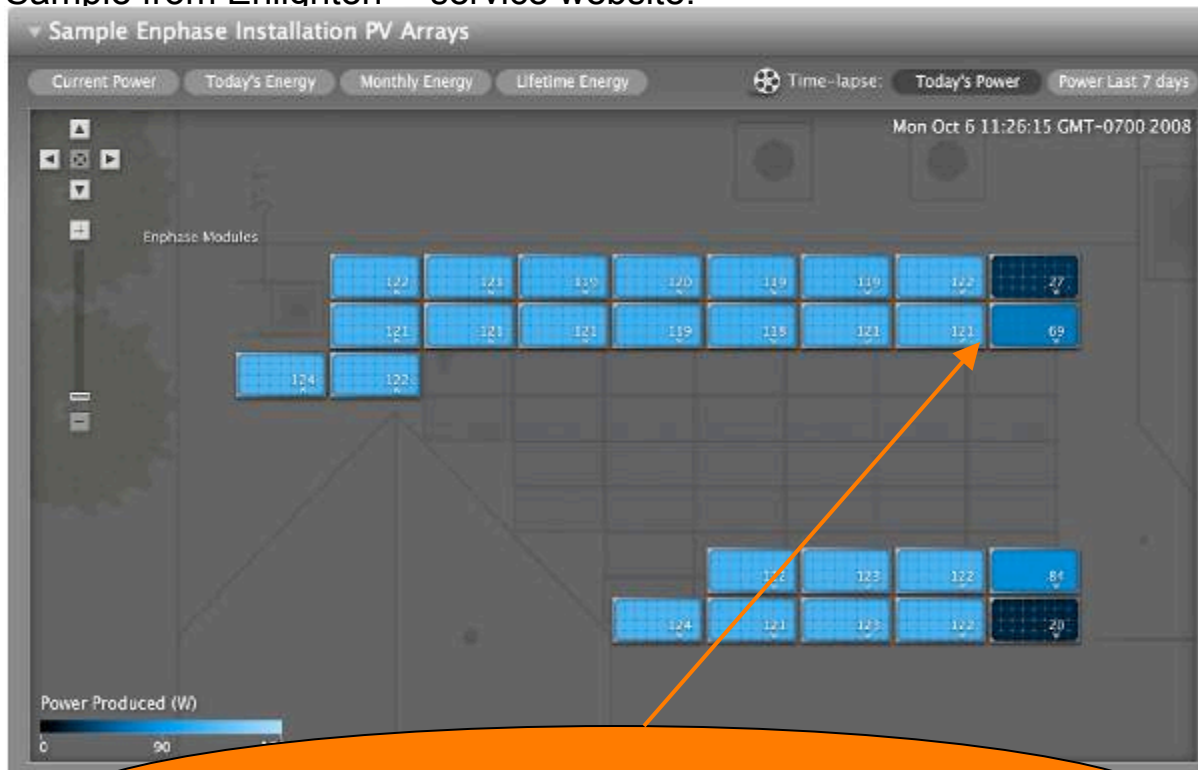
- Series wiring means voltage adds and current stays the same through string.
- Power (Watts) = Volts X Amps
- Shade on one panel reduces the amperage and/or voltage of the entire string of 8 to 14 panels – “Christmas light” effect.
- Production loss is disproportional to shaded area.
- **Microinverters maximize production from each panel.**

Source: National Semiconductor

# Micro Inverters Provide Comprehensive System Monitoring



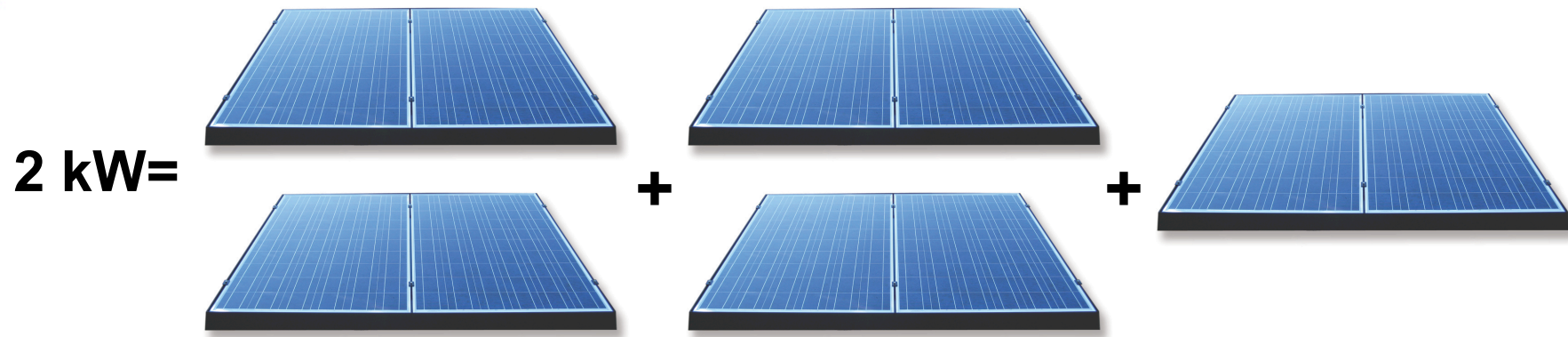
Sample from Enlighten™ service website:



Service shows power production at module level

- Web-based monitoring included
- Proactive problem alerts & power replacement guarantee
- *A great homeowner perk & a money saver on service: no unnecessary truck rolls*

# Typical On-Grid Solar in a Box System is 2 kW



Each unit structurally integrates 2 or 3 standard solar modules into one “panel”.

2 kW Solar in a Box system  
with 400 W units  
= 5 Rooftop units  
= 10 solar panels

2 kW = 2000 Watts

# Bill of Material for Traditional Solar Job



| Bill of Materials                          |    |
|--|----|
| Kyocera KD180GX-LP Modules                 | 12 |
| UNIRAC Solarmount 4 rail kit 168"          | 6  |
| UNIRAC Serrated L-Foot                     | 24 |
| UNIRAC Endclamp "C"                        | 12 |
| UNIRAC Midclamp                            | 18 |
| UNIRAC 1/4" x 2" T-Bolt                    | 30 |
| UNIRAC 1/4" Flange Nut                     | 30 |
| UNIRAC 3/8" x 3/4" Bolt                    | 24 |
| UNIRAC 3/8" Flange Nut                     | 24 |
| UNIRAC Rail Splice Bar                     | 6  |
| 1100 watt PV Inverter                      | 0  |
| 2000 watt PV Inverter                      | 1  |
| 3000 watt PV Inverter                      | 0  |
| 3500 watt PV Inverter                      | 0  |
| 4800 watt PV Inverter                      | 0  |
| Washer, GND Bond                           | 16 |
| Lug, GND Bond Assembly                     | 8  |
| Jumper, GND Bond Assemble                  | 2  |
| Soladeck Roof J-Box                        | 1  |
| Terminal Block, DIN. 0-15, AWG, Blue, UT35 | 1  |
| Terminal Block, DIN. 0-15, AWG, Grey, UT35 | 1  |
| Wire, Bare, Copper 6AWG Solid              | 1  |
| Safety Switch, Heavy Duty, 3               | 1  |
| Lightning Arrestor                         | 1  |
| Copper Lug                                 | 1  |
| Solid Neutral Kit                          | 1  |
| Ground Bar                                 | 1  |
| Disconnect / 30amp / 2 pole / UNFU         | 1  |
| Cable Management Clip                      | 24 |
| Bilingual Warning Label                    | 1  |
| High Voltage Danger Label                  | 1  |
| Mygen Manual                               | 1  |

2 kW residential solar project, the traditional way:

- 30+ different component categories
- 250+ pieces to keep track of and assemble on a jobsite
- Often ordered from 3 – 4 different suppliers

# Ready Solar Packaging - Just 4 Boxes to Build a System



## Box 1: ***Rooftop***

*Contains:* 400 Watt panel with micro-inverters pre-assembled and grounded to code.



## Box 2: ***Connection***

*Contains:* Monitoring system, interconnect cable, and junction box.



## Box 3: ***Expansion***

*Contains:* Expansion cable and components.



## Box 4: ***Roof Mount***

*Contains:* Roof mount assembly for specified roof type (shingle, tile, metal).





# Packaging - Build a System



| <b>kW System Size</b> | <b>Rooftop Boxes</b> | <b>Connection Boxes</b> | <b>Expansion Boxes</b> | <b>Roof Mount Boxes</b> |
|-----------------------|----------------------|-------------------------|------------------------|-------------------------|
| <b>2</b>              | 5                    | 1                       | 0                      | 5                       |
| <b>2.4</b>            | 6                    | 1                       | 0                      | 6                       |
| <b>2.8</b>            | 7                    | 1                       | 0                      | 7                       |
| <b>3.2</b>            | 8                    | 1                       | 1                      | 8                       |
| <b>3.6</b>            | 9                    | 1                       | 1                      | 9                       |
| <b>4</b>              | 10                   | 1                       | 1                      | 10                      |
| <b>4.4</b>            | 11                   | 1                       | 1                      | 11                      |
| <b>4.8</b>            | 12                   | 1                       | 1                      | 12                      |
| <b>5.2</b>            | 13                   | 1                       | 1                      | 13                      |
| <b>5.6</b>            | 14                   | 1                       | 1                      | 14                      |

# Complete System on One Pallet



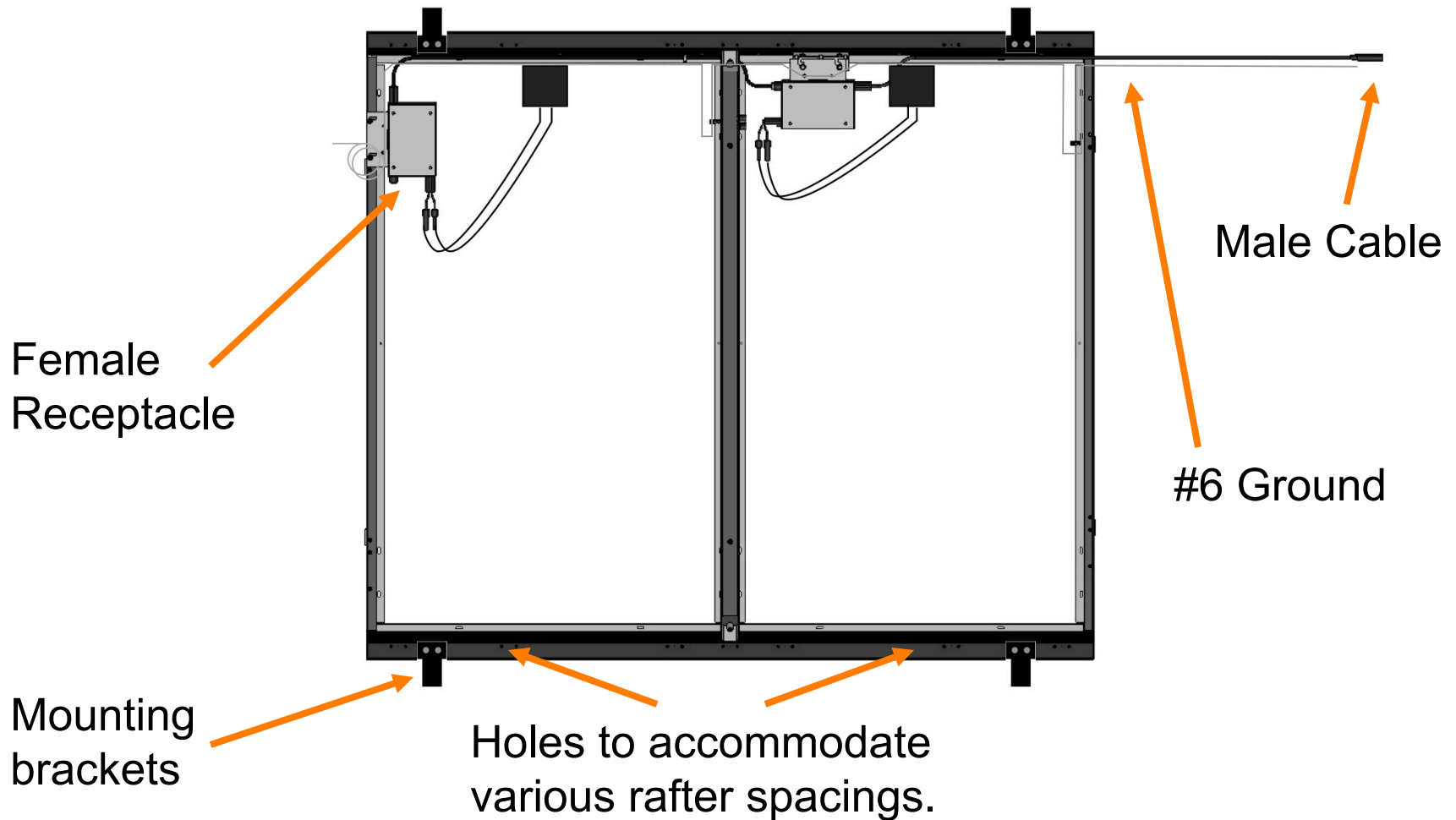
- Up to 4 kW can fit on one pallet.
- Weight is approximately 190 lbs per 1/2 kW.
- Pick up system at electrical distributor along with everything else for a job (12/3 Romex; 15 Amp, 2 pole breakers.)

# Easiest Way to Install Solar

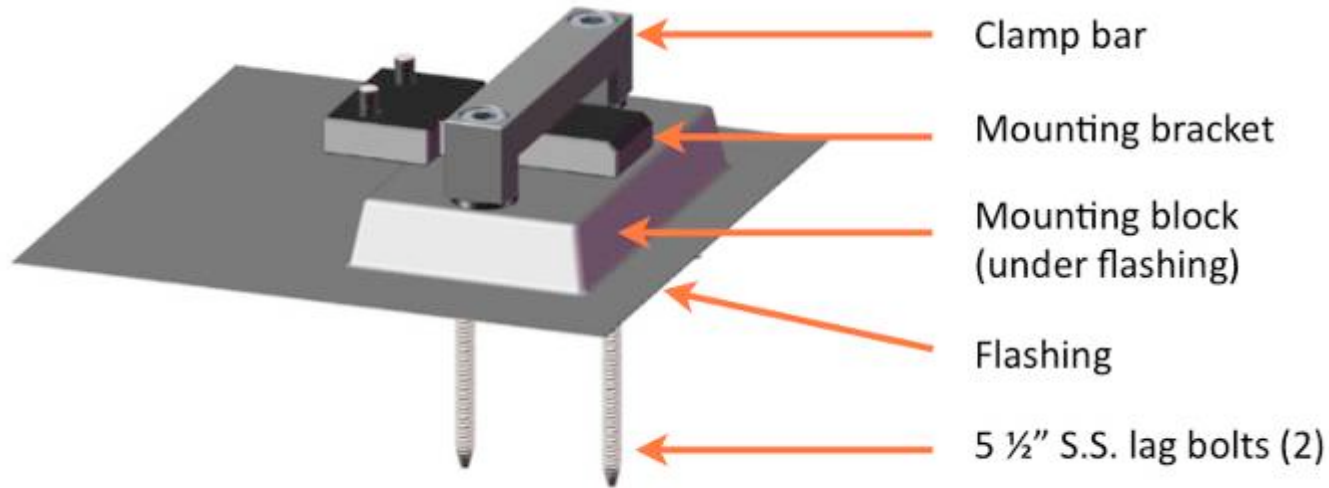


1. Lay out system – one side of panel is male and the other is female.
2. Install mounting blocks and flashings.
3. Two to three men can raise unit (weighs 120 or 165 lbs.) to roof with ladders and guide ropes. A small crane can also be used.
4. Wire system to load center and activate monitoring.

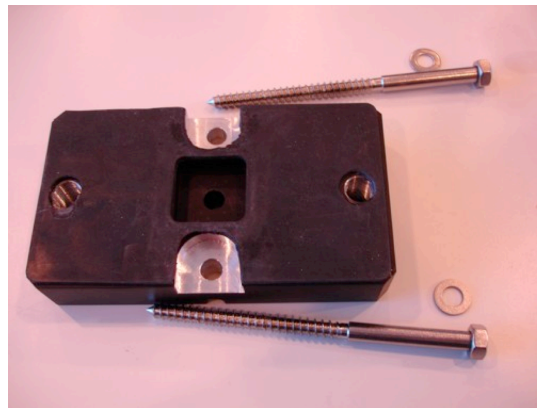
# Backside of Rooftop Unit



# Composition Shingle Mounting System



Bracket attaches to frame.

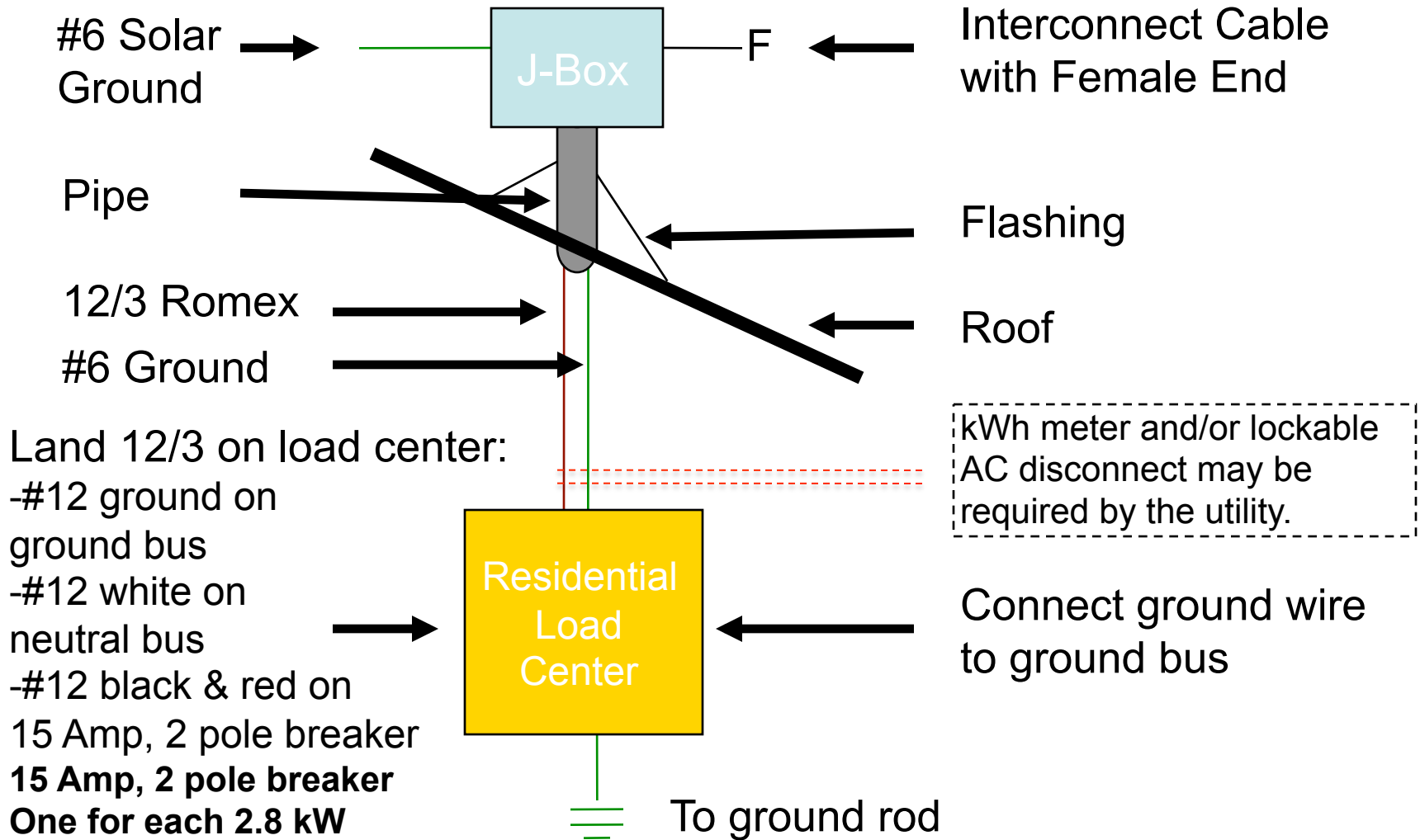


Block attaches to roof.



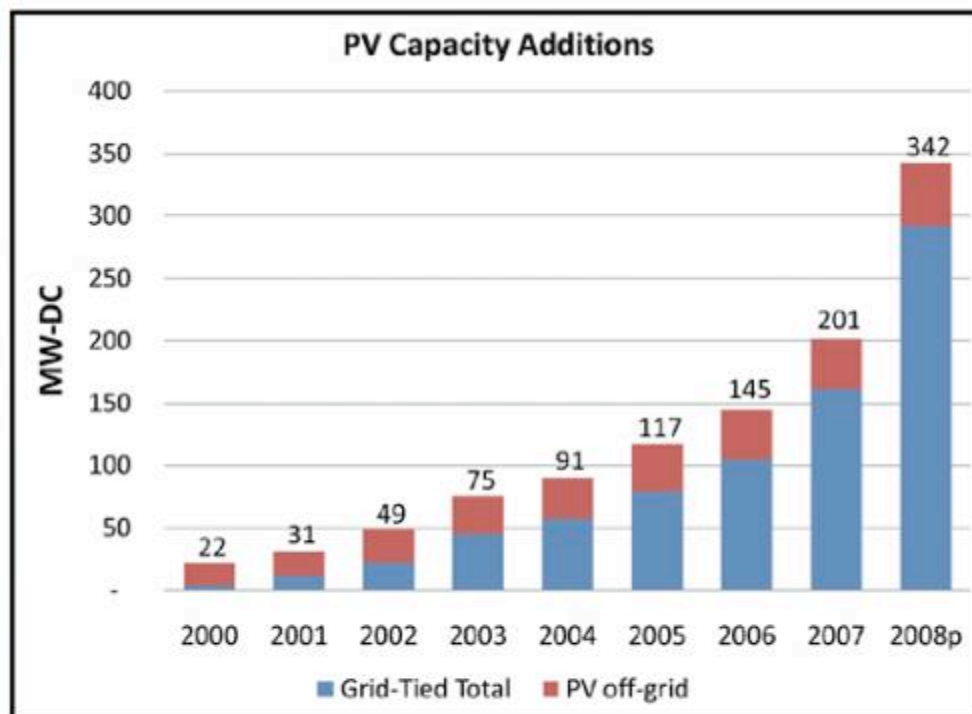
Completed assembly.

# System Wiring





# Solar market is growing rapidly in the U.S.



p = preliminary

Source: Larry Sherwood (IREC), SEIA

- 8 year extension of Federal Tax Credit, 2009 - 2017, and lifting of \$2,000 residential cap - now 30% credit or grant.
- State Renewable Portfolio Standards.
- New stimulus impact.

# Rising electricity prices



Source: Energy Information Administration / Annual Energy Outlook 2008

- Customers want relief from rising electricity costs, which have increased average of 5% per year over last 38 years and are expected to increase more.
- Solar locks in electricity costs.
- Financing solar with a mortgage often results in savings in each and every year.

# Why are Homeowners Buying Solar?



## Economic

- A very good return on investment.
- A very stable investment.
- Adds value to home.

## Environmental

- Renewable power from the sun.
- Clean power - less CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>.

## Energy Independence

- Protection from rising grid prices.
- Reduce dependence on foreign sources of fuel (big picture).

# Savings Overview

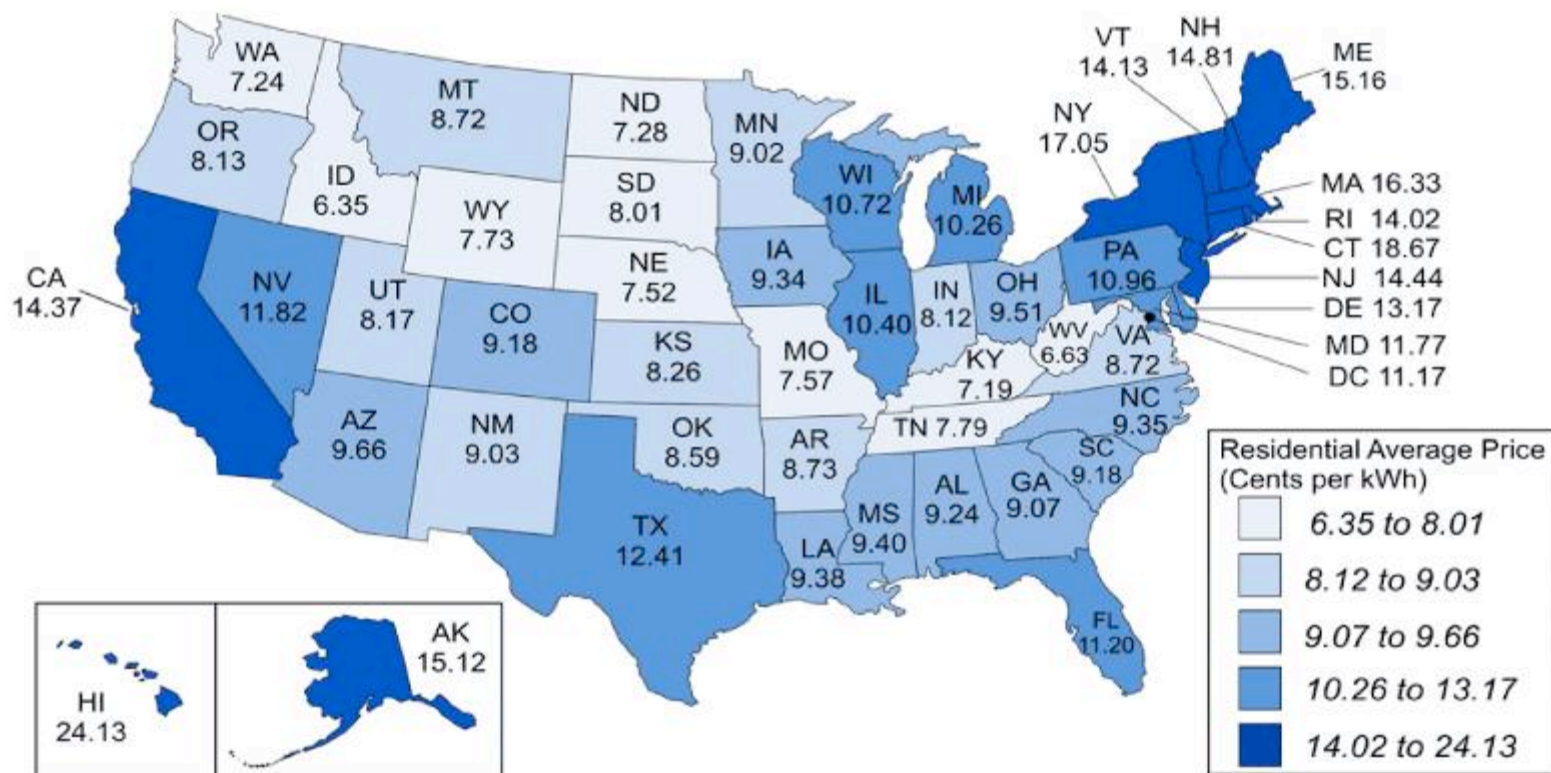


- Solar savings are driven by:
  - States Incentives, rebates, and tax credits. These vary considerably from state to state
  - New Federal Tax Credit extension
  - Cost of local utility electricity and rate structure
  - Amount of sun irradiance/ hours (i.e. zone 1, 2 or 3)
- **Certain states are better “solar states” based on the above variables.** Solar system should pay for itself 2 - 3 times over the life of the system (30 years) in these states.
- Rolling solar purchase into a 30 year mortgage allows for positive cash flow each year from year 1 in most solar states.

# US Electric Rates by State



The U.S. average residential retail price of electricity was **10.64 cents per kilowatt-hour in 2007.**



Source: Energy Information Administration, Form EIA-826, "Monthly Electric Sales and Revenue with State Distributions Report."

# Incentives



- **State or utility rebates** – Cash payments back to homeowner or installer reducing cost of solar
- **State tax credits** – Credits reducing solar buyer's tax bill by all or a portion of solar purchase cost
- **State or utility production incentives** – Payments per kWh generated (instead of up-front rebate)
- **State Net Metering laws** – Laws requiring utilities to pay owners of solar energy systems a fair market value (often the current electric rate) for electricity they generate in excess of what they use
- **State solar sales tax exemptions** – Laws exempting solar energy systems from sales tax in some states. Other laws also prohibit properties from being re-assessed upward when their owners install solar energy systems.
- **Federal Solar Investment Tax Credit** – Federal Tax Credit, 30% of net system cost for solar energy systems. (Like a cash rebate.)
- *More info: [www.dsireusa.org](http://www.dsireusa.org)*



# Incentives Comparisons



|   | Arizona  | New Mexico | El Paso Texas |
|---|----------|------------|---------------|
| <b>Gross Price of 2kW System</b>                  | \$16,000 | \$16,000   | \$16,000      |
| <b>Utility Rebate</b>                             | -\$6,000 | -\$4,470*  |               |
| <b>State Tax Credit</b>                           | -\$1,000 | -          | -             |
| <b>Federal Grant (30% of price after rebates)</b> | -\$2,700 | -\$4,800   | -\$4,800      |
| <b>Net Price to Homeowner</b>                     | \$6,300  | \$6,730    | \$11,200      |
| <b>% Paid for</b>                                 | 61%      | 58%        | 30%           |

\* Present value of 12 year payments at 4% discount rate.

# Colorado Homeowner Example

## 3.2 kW System



\$24,000 Gross Price  
less \$6,400 Rebate (3200 W x \$2.00/W)  
less \$4,800 REC payment (3200 W x \$1.50/W)  
less \$3,840 Federal ITC (30% of GP less rebates)  
  
= \$8,960 Net Price

\* Rebates and tax credits pay for 63% of system.

# Make More Money with Solar in a Box



|      |               |                                     |
|------|---------------|-------------------------------------|
|      | \$24,000      | Gross Price (\$7.35/Watt)           |
| less | \$16,160      | Solar in a Box 3.2 kW (\$5.05/Watt) |
| less | \$ 800        | Shipping                            |
| less | \$ 200        | Misc. parts                         |
| less | \$ 840        | Labor (3 men x 8 hours x \$35)      |
| less | \$ 500        | Paperwork, permitting, etc.         |
| less | <u>\$ 500</u> | Other ?                             |
| =    | \$ 5,000      | Gross Profit – One day job!         |

# Make More Money with Solar in a Box



## Your Profits



What is your profits?

|                           | 18 x 175W       | 30 x 175W       | 40 x 175        |
|---------------------------|-----------------|-----------------|-----------------|
| System Size (W DC)        | 3150            | 5250            | 7000            |
| \$5 /W Sunkit cost        | \$15,750        | \$26,250        | \$35,000        |
| Labor hours               | 60              | 80              | 100             |
| \$25 /Hr Labor costs      | \$1,500.00      | \$2,000.00      | \$2,500.00      |
| Incidentals               | \$700.00        | \$1,000.00      | \$1,300.00      |
| Sales Commission          | \$700.00        | \$1,000.00      | \$1,500.00      |
| <b>Total Costs</b>        | <b>\$18,650</b> | <b>\$30,250</b> | <b>\$40,300</b> |
| 8% Sales Tax on parts     | \$1,553         | \$2,572         | \$3,427         |
| \$7.25 /W Installed Price | \$22,838        | \$38,063        | \$50,750        |
| <b>Gross Profit</b>       | <b>\$2,635</b>  | <b>\$5,240</b>  | <b>\$7,023</b>  |

# Advantages of Buying from Your Distributor



- ✓ Everything needed for a solar job can be picked up at one place. Saves \$ on paperwork and logistics.
- ✓ Offer a higher performance and better looking product.
- ✓ Installers can spend less time and money on design and install and more time on sales and marketing - sell more jobs.
- ✓ Make it easier for new to solar contractors to get into the business.

# Tools for Effective Sales: Brochures



## Contractor Flyers



**Get into the Solar Business Today with Ready Solar®**

**Ready Solar introduces off-the shelf solar energy systems designed for rapid installation.**

Complete systems arrive ready to install and connect in **ONE DAY.**

- Fully modular units: EASY to install and service
- Patented mounting frame and brackets: NO racking
- Solar modules pre-wired and grounded to NEC code
- Pre-installed micro-inverters: NO inverter installation or DC wiring
- Simple system sizing
- 1 year complimentary module-level, web based monitoring
- Sales tools
- Fast-track permit pack

Ask your distributor for details.  
Start selling solar today!  
**1-877-81-Ready or 1-877-817-3239**


*"A superb product"*  
- Monroe Nash, Terra Forma, Inc., general contractor

*"My experience in the field verifies any 2-3 person team can install a Ready Solar system in ONE DAY. It looks sleek and attractive, too."*  
- Tim Swilling, Owner Lighthouse Solar & Electric El Granada, CA



ELECTRICAL CONTRACTOR

## Homeowner Brochures



**Save Money with a Reliable Ready Solar® System**

**Ready Solar introduces affordable and practical off-the-shelf solar energy systems.**

Tired of rising electric bills? Frustrated with continued dependence on foreign energy sources? Concerned about the impact of fossil fuels on the environment? Would you like to do something about it...without the cost and time of a major home improvement project? It makes sense to use solar energy to power your home. With Solar in a Box systems, you will be up and running with economical, clean electricity, quickly and conveniently.

**It's Easy** - Buy a Ready Solar system like you buy an appliance - a complete, all-in-one package.


**It's Affordable and Saves You Money** - Ready Solar's basic system, Solar in a Box 1KW, costs about the same as a hot tub, and can save you thousands of dollars in electricity bills. You get a Federal tax credit & may qualify for state or utility rebates.

**It's Attractive** - Solar in a Box systems resemble skylights. Ready Solar's patented installation technology provides a superior appearance compared to other roof mounting methods.

**It's State-of-the-Art** - Solar in a Box systems utilize the latest solar technology and include proactive system monitoring and a comprehensive warranty.

Ask your dealer for details.

*"Unless the system is attractive it does not add value to your home...When I looked around, Ready Solar had the only solution to meet my needs and make it attractive."*  
- Virginia Bacon, Realtor and Ready Solar Customer



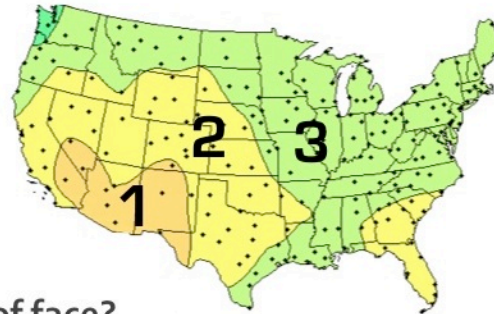
READY SOLAR: EASY



# Tools for Effective Sales: Easy System Sizing Tool

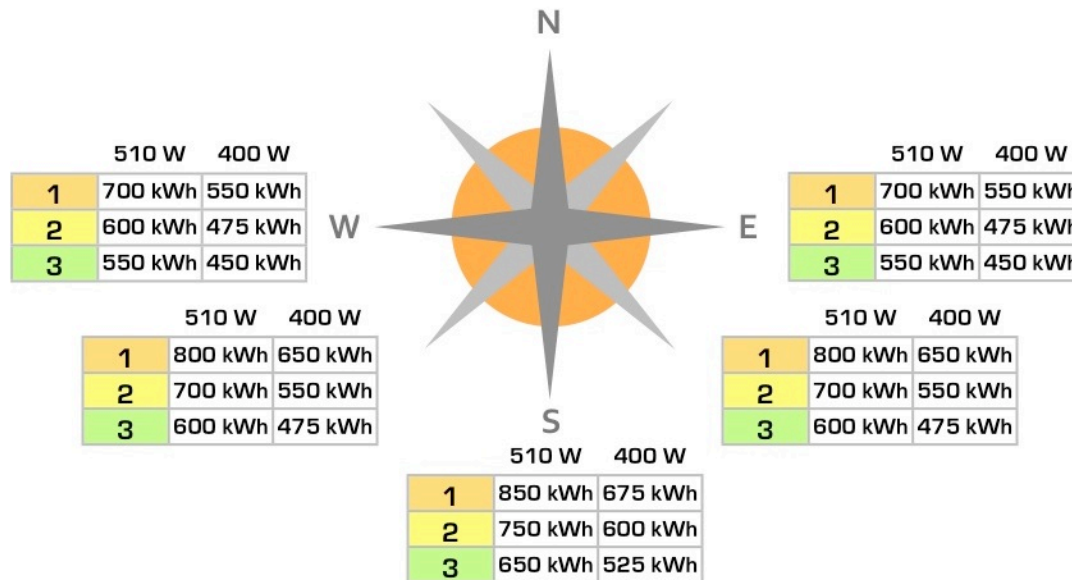


1. What region are you in?



2. What direction does your roof face?

Based on your region and roof direction, each Solar in a Box Rooftop unit will annually produce approximately the power (kWh) listed below.\*



# Tools for Effective Sales: Sales and Installation Training



## 25 Page State Specific Homeowner Pitch Book



## Ready Solar 102 Training Webinar

Topics Covered:

- ✓ Solar technology, components, and terminology.
- ✓ Selling solar – pre-qualifying leads, site assessments, quoting solar, closing deals.
- ✓ Detailed installation overview.

# Ready Solar Quote and Savings Calculator



Simple tool for quoting solar and estimating approximate bill savings and economics.

**Solar Quotation and Savings Calculator**

3.0 kW System Size (DC)

Name: Brandon Dato      \$17,200.00 Gross System Price  
 Address: 1660 Rivers St.      -\$4,200.00 State or Utility Rebate  
 City: San Francisco, CA      \$0.00 State Tax Credit  
 Zip: 94116      -\$5,200.00 Federal Tax Credit  
 Phone: (415) 515-1162      \$8,100 Net Price After Rebates and Credits

Calculate Year 1 Production from NREL's PV Watts Calculator: **PV Watts**

Estimated Year 1 Production: **3306 kWh**  
 Current Electric Rate: **0.26 \$/kWh**  
 Annual Electric Rate Escalation: **7 %**  
 Customer's Total Tax Rate: **36 %**

**Economic Benefits**

**Provides \$8,100 Net Price of System**  
 Provides **\$15,550** in electric bill savings over 25 years.

**Returns 6.97% on Investment (IRR calculation)**  
 Electric bill savings are converted to pre-tax dollars to make a comparison to other investments like the stock market or a savings account which produce taxable income.

**Protects 19.5 \$/kWh**  
 Homeowner is protected from rising electric rates by fixing a portion of the electric bill at this amount. Net system payback is by total savings.

**Adds \$5,350 to the value of the home.**  
 The Appraisal Journal estimates that an energy efficiency measure like solar adds 3.9% the annual savings to the value of the home.

## Production and Savings

| Year                         | Production kWh | Bill Savings | Total Savings   | Cash Flows for IRR Calculation<br>Pre-tax bill savings |
|------------------------------|----------------|--------------|-----------------|--|
| 1                            | 3658           | \$968        | \$968           | \$417  |
| 2                            | 3684           | \$953        | \$953           | \$420  |
| 3                            | 3690           | \$950        | \$950           | \$420  |
| 4                            | 3686           | \$953        | \$953           | \$420  |
| 5                            | 3671           | \$964        | \$964           | \$420  |
| 6                            | 3637           | \$989        | \$989           | \$420  |
| 7                            | 3628           | \$990        | \$990           | \$420  |
| 8                            | 3629           | \$985        | \$985           | \$420  |
| 9                            | 3745           | \$842        | \$842           | \$420  |
| 10                           | 3741           | \$870        | \$870           | \$420  |
| 11                           | 3757           | \$801        | \$801           | \$420  |
| 12                           | 3753           | \$833        | \$833           | \$420  |
| 13                           | 3730           | \$888        | \$888           | \$420  |
| 14                           | 3726           | \$864        | \$864           | \$420  |
| 15                           | 3712           | \$843        | \$843           | \$420  |
| 16                           | 3688           | \$885        | \$885           | \$420  |
| 17                           | 3686           | \$799        | \$799           | \$420  |
| 18                           | 3671           | \$770        | \$770           | \$420  |
| 19                           | 3658           | \$827        | \$827           | \$420  |
| 20                           | 3646           | \$880        | \$880           | \$420  |
| 21                           | 3632           | \$897        | \$897           | \$420  |
| 22                           | 3618           | \$997        | \$997           | \$420  |
| 23                           | 3606           | \$1,040      | \$1,040         | \$420  |
| 24                           | 3582           | \$1,131      | \$1,131         | \$420  |
| 25                           | 3579           | \$1,204      | \$1,204         | \$420  |
| <b>Total Pre-Tax Savings</b> |                |              | <b>\$54,156</b> |  |

### Notes:

- \* Year 1 production estimate is based on the National Renewable Energy Laboratory's PV Watts Performance Calculator: [http://www.nrel.gov/pv/watts/pv\\_watts.html](http://www.nrel.gov/pv/watts/pv_watts.html)
- \* All numbers are estimates only. Production and economic return can vary due a variety of factors like abnormal weather patterns, shade or dirt on solar panels, electric rates, etc.
- \* The Energy Information Association conservatively predicts a 5% annual increase in the retail price of electricity through 2030.
- \* Solar panels include a 25 year production warranty. They are guaranteed by the manufacturer to still produce 80% of their initial rated power at year 25.
- \* Consult with the local utility regarding rebates and net metering status, rules, and availability.
- \* Consult with a tax advisor regarding the applicability of all tax credits.

# Additional Tools Available



- Online system monitoring demo
- Point of sale materials
- Pitch Book / Training Manual
- Sales Training & Installation Webinars
- Partner Login on Ready Solar Website
- Additional requests – *just ask us*

# Ready Solar Advantages



***Ready Solar makes it easy to get into the solar business! Systems come fully pre-assembled and pre-grounded to NEC. Benefits are:***

- ▶ No complicated system design and engineering required
- ▶ No DC wiring required
- ▶ No inverter or disconnects to install
- ▶ No racking to build
- ▶ Completely modular design – start small and add more later
- ▶ Higher performance system
- ▶ Systems connect to load center with 12/3 Romex and 15 Amp breaker
- ▶ Web-based system monitoring package included
- ▶ Fast-track permit package included
- ▶ Simple system sizing, sales, and quoting tools
- ▶ Sales and installation training and support provided