

SOLAR Z Radian
Radiation Collection (Sun) Availability
Test Measurement & Analysis
Positioning System

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1. TEST MEASUREMENT PARAMETERS:

- Dates: **7/8/2018 (Summer)** and **1/4/2025 (Winter)** when test measurements were performed.
- Location:
 - 131 Star Lane, Santa Cruz, California USA
 - 37 Degrees N (36 deg, 57 min, 53.336 sec N) *Latitude*
 - -122 Degrees W (-121deg, 58min, 12.230 sec W) *Longitude*
- Building Structure: (Design)
 - Single story
 - Gable roof structure: with Gable walls facing North & South (roof ridge aligned Parallel in North /South direction)
 - Roof slopes facing East & West
 - Single Family Home
 - 32 X 40 feet
 - 2 feet (24 inch) Roof Overhang all sides
 - Objects and structures blocking sunlight not included in data (building only, sun at walls, omitted West wall chimney stack & neighbor bush)
- Four Cardinal Directions measurements: (South side wall had Solar Z installed, other sides (3x) measured in Solar Z mounted parameter identified locations for sunlight availability)
 - North wall
 - South wall
 - East wall
 - West wall
- Solar Oven Position: (Solar Z mounted parameter locations)
 - Solar Z Appliance positioning system identified locations near center of 4x wall lengths of the 32 X 40ft Building.
 - 4.5 to 5.0 feet above ground
 - 6.0 feet out from building wall (perpendicular to the wall)
- Data Time Duration Measured:
 - Start Time sun arrives and available in location for Solar Z solar cooking to the end time, the sun no longer available (Range of available time to successfully access sunlight for solar cooking with a Solar Z)

2. MEASUREMENT RESULTS: Date: **7/8/2018: Summer**, when test measurements were performed (Cooking time with available sunlight with Solar Z)

- **NORTH WALL ----- 12.5 Hrs (start 0700 – 1930 hrs)**
- **SOUTH WALL ----- 10.3 Hrs (Start 0745 – 1805 hrs)**
- **EAST WALL ----- 9.0 Hrs (Start 0700 – 1600 hrs)**
- **WEST WALL ----- 8.6 Hrs (Start 1020 – 1900 hrs)**

NOTES: (Summary)

- Test shows **Four Cardinal directions available** for **Solar Z solar cooking** at this above test site location and experimental test building parameters at 37 degrees Latitude in the **Summer**.
- Can begin cooking in 3X directions as early as 0745 Hrs with a Solar Z, West wall later at 1020 hrs
- Minimum cook time over 8 hours with available sunlight (in Summer)

3. MEASUREMENT RESULTS: Date: **1/4/2025: Winter**, when test measurements were performed (Cooking time with available sunlight with Solar Z)

- **NORTH WALL ----- 0.0 Hrs (Start 0830 – 1600 hrs)**
- **SOUTH WALL ----- 7.5 Hrs (Start 0830 – 1600 hrs)**
- **EAST WALL ----- 5.0 Hrs (Start 0830 – 1330 hrs)**
- **WEST WALL ----- 5.5 Hrs (Start 1030 – 1600 hrs)**

NOTES: (Summary)

- Test shows **Three Cardinal directions available** for **Solar Z solar cooking** at this above test site location and experimental test building parameters at 37 degrees Latitude in the **Winter**.
- Can begin cooking in 2X directions as early as 0830 Hrs with a Solar Z, West wall later at 1030 hrs
- Minimum cook time 5 hours with available sunlight (in Winter)