



Lesson #1: Intro to Solar Installation

Objectives

Students will be able to...

- Identify the tools and equipment used by solar installers today
- Understand contributing factors to layout placement/design
- Read and interpret solar array layout design documents
- Develop and apply basic skills in roof penetration, flashing, and waterproofing
- Locate center of rafter/top-cord, pilot drilling and roof attachment
- Racking assembly, adjustability, leveling and planning for array uniformity
- Maximize teamwork to assist in module placement and attachment
- Name and identify all racking components and connectors
- Name and identify micro inverter wiring components
- Layout and install modules from permit sets/engineering drawings
- Lay out trunk cables and install with accessories for proper operation
- Complete rooftop wire management
- Complete project documentation
- Work cooperatively as a member of a team
- Identify hazards and how to avoid or minimize them in the workplace

Standards

LS11-12.6
RSIT 11-12.2
Technology 4.1, 4.2, 4.3,
Problem Solving and Critical Thinking 5.1, 5.2, 5.3, 5.4
Health and Safety 6.3, 6.6,
Ethics and legal responsibilities 8.1,
Leadership and Teamwork 9.1, 9.2, 9.3
Technical Knowledge and Skills 10.1, 10.2, 10.3, 10.4
Demonstration and Application 11.1

| Materials | | | |
|---|-----------------------|------|---|
| "Intro Solar Installation" Resource Guide (includes content and student worksheets) | | | |
| Solar Model Kit: | | | |
| Modules: | LG, or any compatible | 0 | 2 |
| Inverters: | Enphase | 1 | 2 |
| Q Cable "Drops": | Enphase | 2 | 3 |
| Terminator Cap: | Enphase | 1 | 1 |
| Enphase Cable Clips | Enphase | 2 | 6 |
| UniRac Rail: | UniRac | 0.17 | 1 |
| UniRac Splice w/ Tek | UniRac | 1 | 1 |
| Screws: | | | |
| UniRac End Clamp: | UniRac | 0 | 4 |
| UniRac Mid Clamp: | UniRac | 0 | 2 |
| UniRac Weeb Lug: | UniRac | 0 | 2 |
| UniRac T Bolt: | UniRac | 1 | 2 |
| L Feet | UniRac | 1 | 6 |
| Comp Shingle Flashing | UniRac | 1 | 6 |
| Lag Bolt | UniRac | 1 | 6 |
| Station Roof Mockup | Custom Build | 1 | 0 |

| Lesson Sequence |
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| See attached "Intro Solar Installation" Resource Guide |

| Assessment |
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| Student Quizzes Student Observations During Hands on Installation Practice |

| Accommodations/Modifications |
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| Check for Understanding Strategic Partners Visuals One on One Support |