# Initial Design CP V3 (CPS and 480s) Westside Tractor Sales - Lisle, 3300 Ogden Ave, Lisle, IL 60532

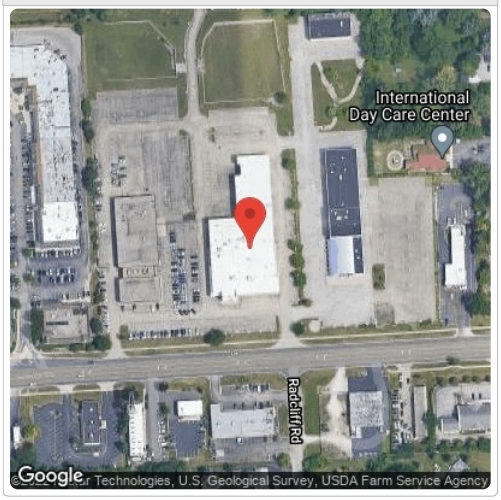
## Report

| | |
|---|---|
| Project Name | Westside Tractor Sales - Lisle |
| Project Address | 3300 Ogden Ave, Lisle, IL 60532 |
| Prepared By | Calvin Preston<br>cpreston@verdesolutions.com |

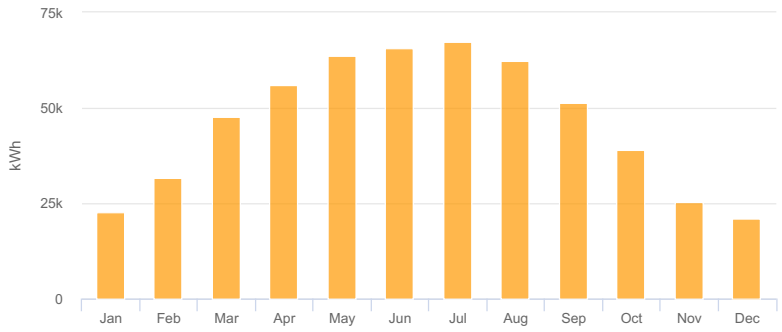
## System Metrics

| | |
|---|---|
| Design | Initial Design CP V3 (CPS and 480s) |
| Module DC Nameplate | 412.3 kW |
| Inverter AC Nameplate | 333.0 kW<br>Load Ratio: 1.24 |
| Annual Production | 553.4 MWh |
| Performance Ratio | 85.9% |
| kWh/kWp | 1,342.3 |
| Weather Dataset | TMY, 10km grid (41.75,-88.15), NREL (prospector) |
| Simulator Version | 1c804bf0ee-f7b47e4bba-7aae9b983e-ffbb843594 |

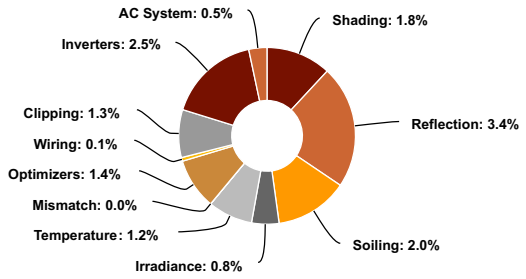
## Project Location




## Monthly Production




## Sources of System Loss




## Annual Production

| | Description | Output | % Delta |
|---|---|---|---|
| Irradiance (kWh/m²) | Annual Global Horizontal Irradiance | 1,446.9 | |
| | POA Irradiance | 1,561.9 | 7.9% |
| | Shaded Irradiance | 1,534.0 | -1.8% |
| | Irradiance after Reflection | 1,482.2 | -3.4% |
| | Irradiance after Soiling | 1,452.6 | -2.0% |
| | **Total Collector Irradiance** | **1,452.6** | **0.0%** |
| Energy (kWh) | Nameplate | 598,795.4 | |
| | Output at Irradiance Levels | 594,294.6 | -0.8% |
| | Output at Cell Temperature Derate | 587,007.6 | -1.2% |
| | Output After Mismatch | 587,006.6 | 0.0% |
| | Optimizer Output | 578,787.8 | -1.4% |
| | Optimal DC Output | 578,207.6 | -0.1% |
| | Constrained DC Output | 570,627.4 | -1.3% |
| | Inverter Output | 556,223.6 | -2.5% |
| | **Energy to Grid** | **553,442.5** | **-0.5%** |
| Temperature Metrics | | | |
| | Avg. Operating Ambient Temp | | 12.8 °C |
| | Avg. Operating Cell Temp | | 19.7 °C |
| Simulation Metrics | | | |
| | Operating Hours | | 4692 |
| | Solved Hours | | 4692 |

## Condition Set

| | |
|---|---|
| Description | Condition Set 1 |
| Weather Dataset | TMY, 10km grid (41.75,-88.15), NREL (prospector) |
| Solar Angle Location | Meteo Lat/Lng |
| Transposition Model | Perez Model |
| Temperature Model | Sandia Model |

**Temperature Model Parameters**

| Rack Type | a | b | Temperature Delta |
|---|---|---|---|
| Fixed Tilt | -3.56 | -0.075 | 3°C |
| Flush Mount | -2.81 | -0.0455 | 0°C |

**Soiling (%)**

| J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

| | |
|---|---|
| Irradiation Variance | 5% |
| Cell Temperature Spread | 4° C |
| Module Binning Range | -2.5% to 2.5% |
| AC System Derate | 0.50% |

**Module Characterizations**

| Module | Uploaded By | Characterization |
|---|---|---|
| Q.Peak DUO XL-G10.2 480 (Hanwha Q Cells) | Folsom Labs | Spec Sheet Characterization, PAN |

**Component Characterizations**

| Device | Uploaded By | Characterization |
|---|---|---|

## Components

| Component | Name | Count |
|---|---|---|
| Inverters | SE33.3KUS (2020) (SolarEdge) | 10 (333.0 kW) |
| Strings | 10 AWG (Copper) | 28 (3,149.1 ft) |
| Optimizers | P960 NA (SolarEdge) | 859 (824.6 kW) |
| Module | Hanwha Q Cells, Q.Peak DUO XL-G10.2 480 (480W) | 859 (412.3 kW) |

## Wiring Zones

| Description | Combiner Poles | String Size | Stringing Strategy |
|---|---|---|---|
| Wiring Zone | - | 13-31 | Along Racking |

## Field Segments

| Description | Racking | Orientation | Tilt | Azimuth | Intrarow Spacing | Frame Size | Frames | Modules | Power |
|---|---|---|---|---|---|---|---|---|---|
| Field Segment 1 | Fixed Tilt | Landscape (Horizontal) | 10° | 176.46179° | 1.2 ft | 1x1 | 452 | 452 | 217.0 kW |
| Field Segment 2 | Fixed Tilt | Landscape (Horizontal) | 10° | 176.58676° | 1.2 ft | 1x1 | 146 | 146 | 70.1 kW |
| Field Segment 3 | Fixed Tilt | Landscape (Horizontal) | 10° | 176.66058° | 1.2 ft | 1x1 | 261 | 261 | 125.3 kW |

Detailed Layout