Design Flexibility

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Traditional Systems – Site Design Guidelines – **NOT needed in SolarEdge systems**

Design steps

- Determine min/max string length:
  - Calculate Voc at minimum ambient temperature
  - Calculate Vmpp at maximum ambient temperate
  - Calculate min/max string length, given the above + inverter voltage limits
- Group modules into strings of permitted equal length
- Design physical layout, considering shading and facet angles
- In larger sites: design required DC connection boxes and monitoring

Many design constraints that limit PV space in many cases

- Limited string length
- All strings must match
  - Same string length
  - Same orientation towards the sun
  - Same module type
  - Shading avoidance
- Unmatched strings generally require multiple inverters or an inverter with multiple MPP trackers

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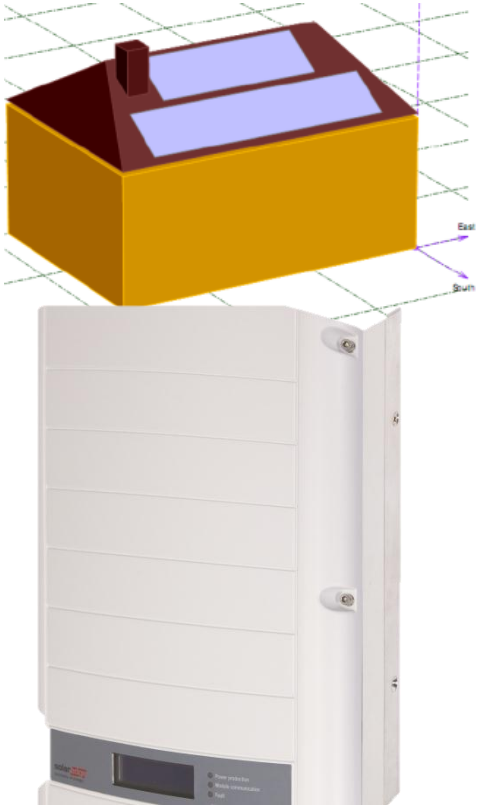
SolarEdge Flexible Design & Longer Strings for Maximum Roof Utilization

Fit more modules on each roof:

- 1-Phase guidelines:
  - 8 to 25 power optimizers per string (<5.25kW)
- 3-Phase guidelines:
  - 3-Phase: 16 to 50 power optimizers per string (<11.25kW)



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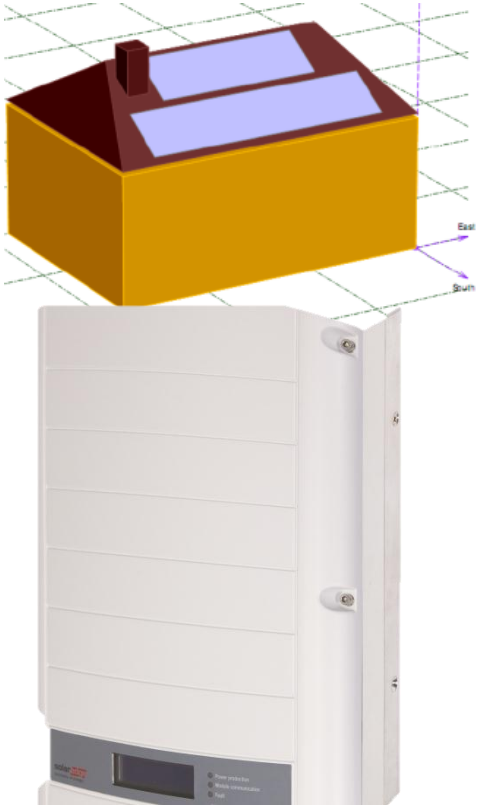
SolarEdge Flexible Design & Longer Strings for Maximum Roof Utilization (cont.)

Mismatch? no problem:

- Parallel strings of unequal lengths
- Modules on multiple roof facets
- Modules with different power ratings
- Vertical and horizontal modules

Use SolarEdge Site Designer for recommended setup



SolarEdge Power Optimizers Concept of Operation

2013

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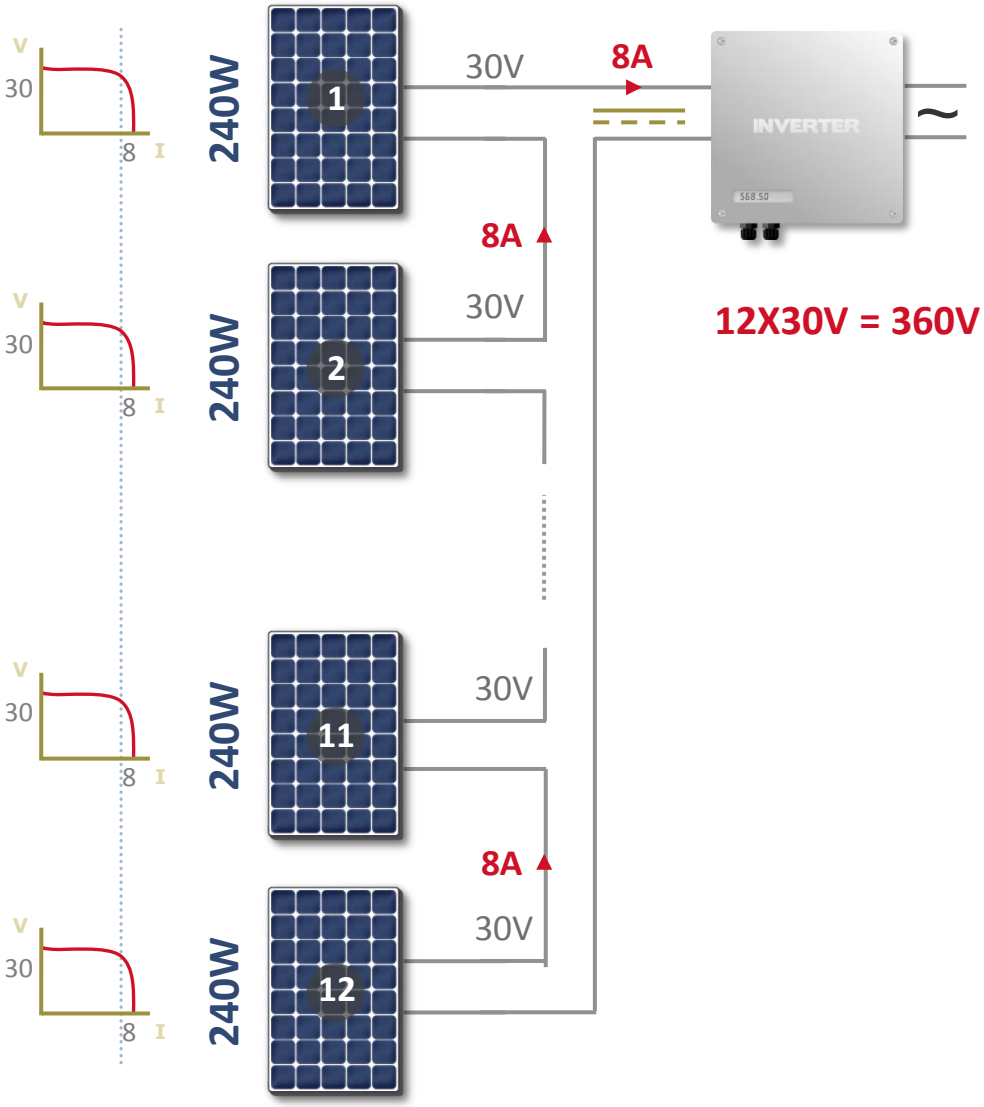
Traditional System – Ideal Scenario

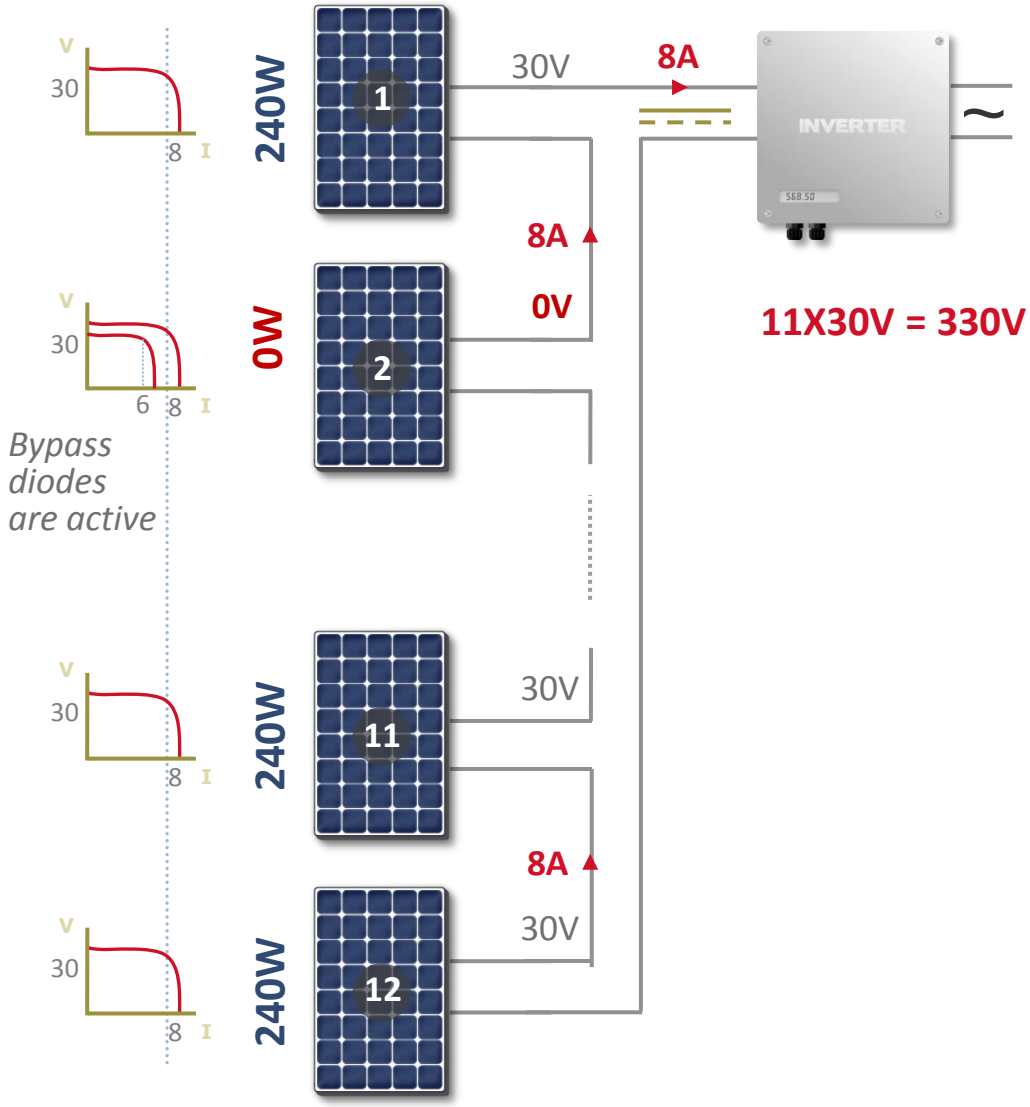
- No Mismatch (all modules are at MPP)



Total power:
12 modules are connected
12X240W = 2880W

Traditional System – Shading

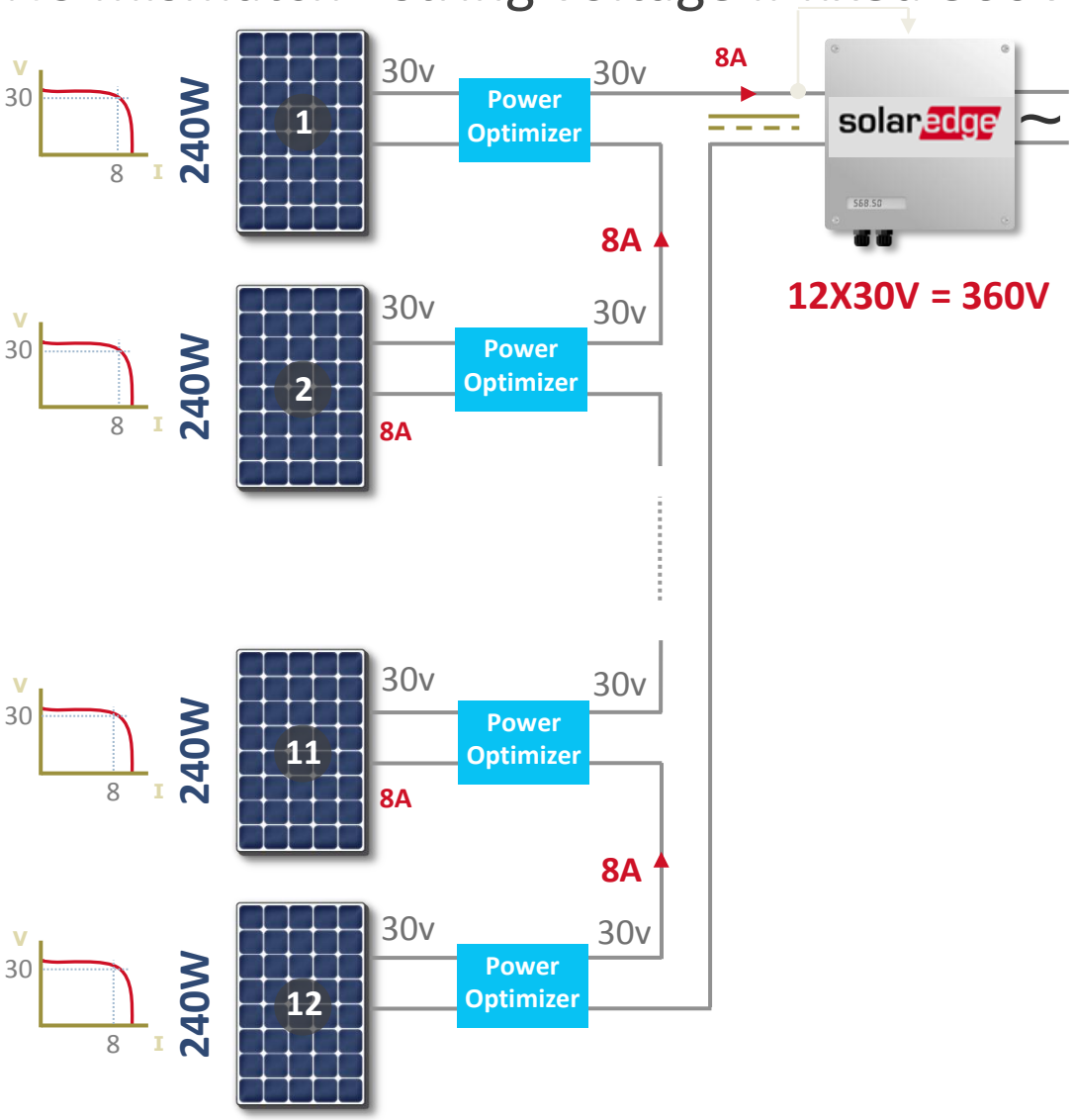
- Shaded module is ByPassed



Total power:
11 modules are connected
11X240W = 2640W

SolarEdge System - Ideal System

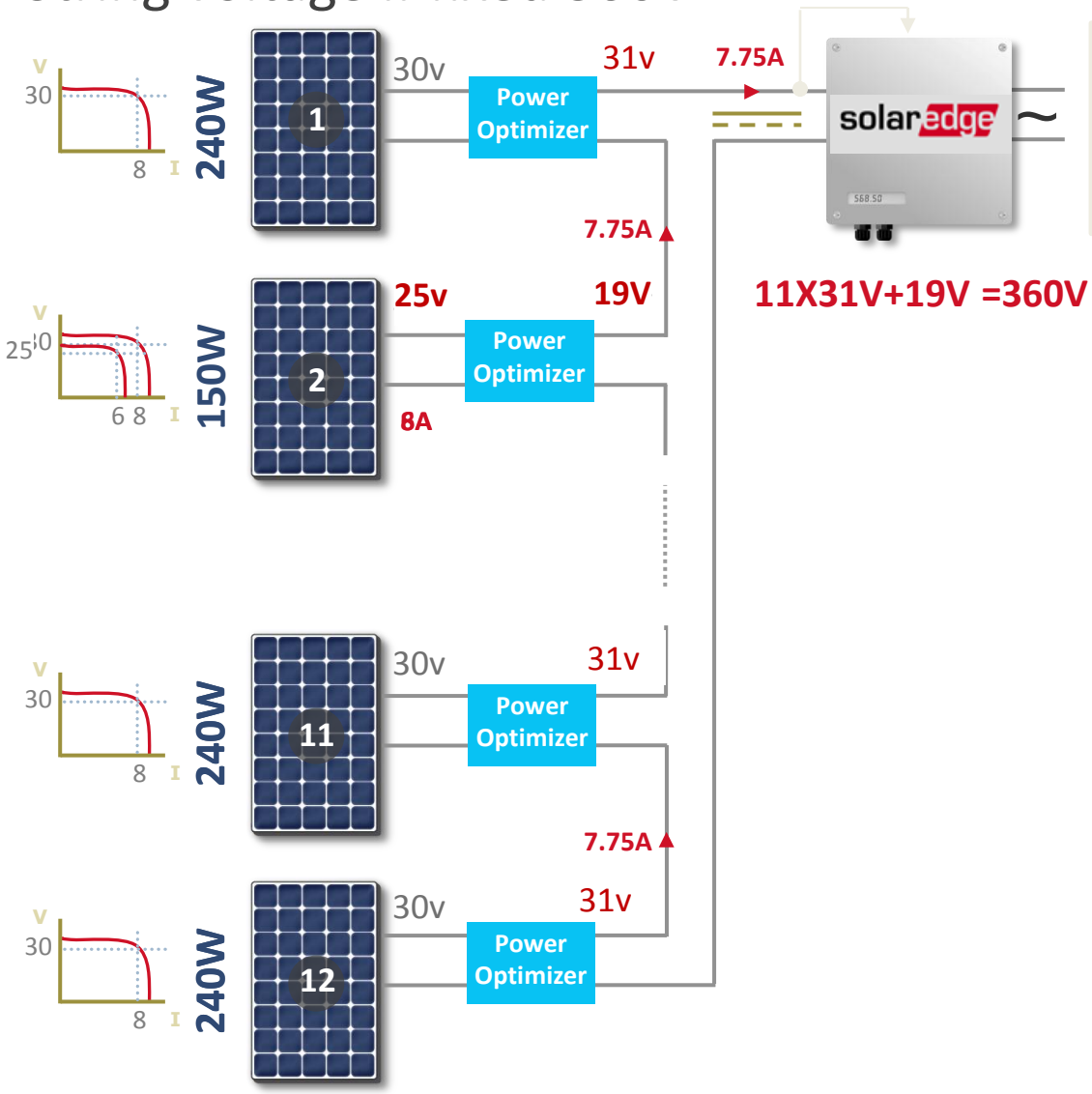
- No mismatch - string voltage if fixed 360V



Total power:
12 modules are connected
12X240W = 2880W

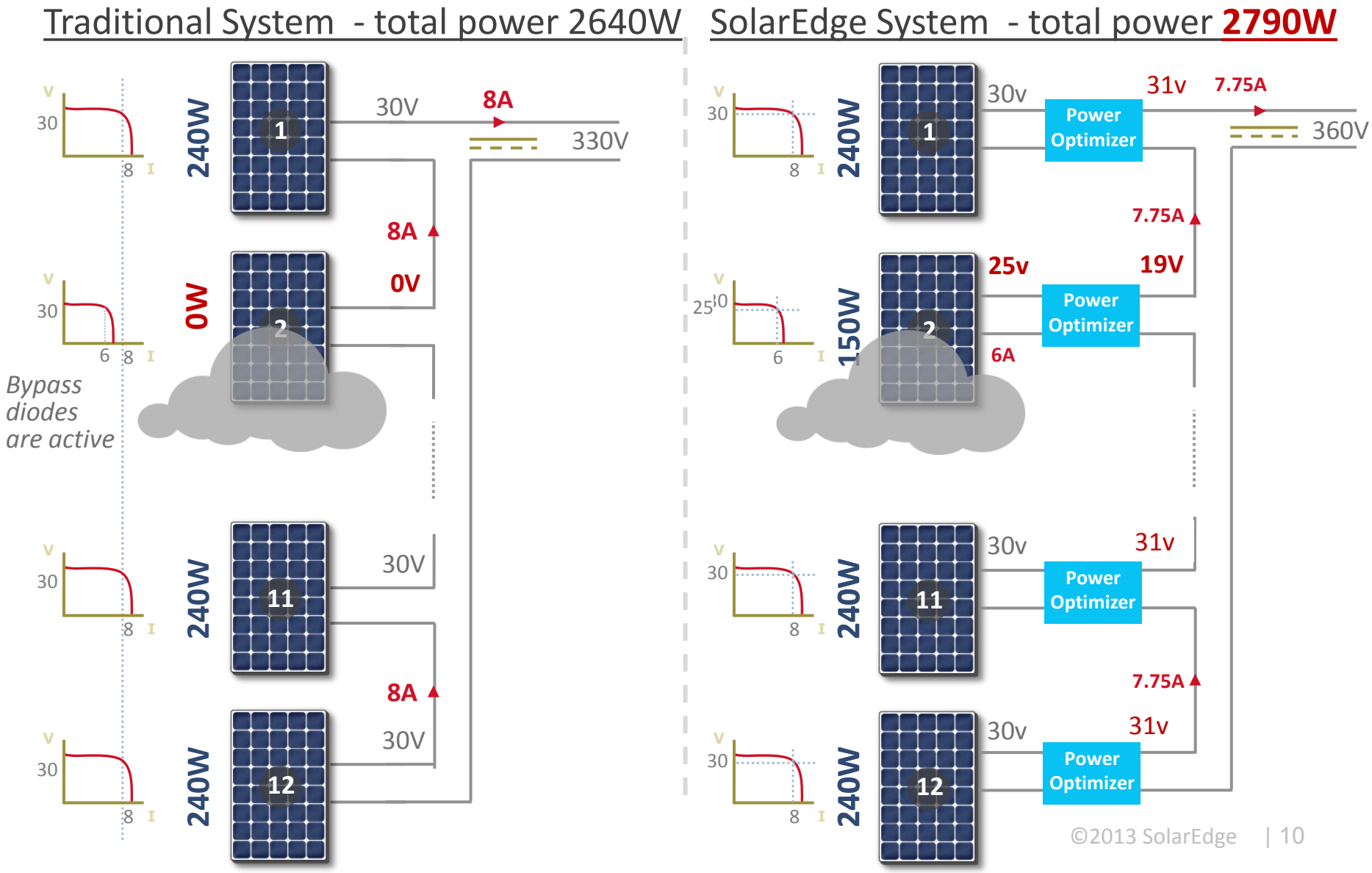
SolarEdge System – Shading

- String voltage if fixed 360V



Total power:
12 modules are connected
11X240W +150W= 2790W

SolarEdge VS. Traditional System



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