

What is UL3741?

For years, the solar industry has faced challenges balancing firefighter safety and system reliability, leading to costly, complex regulations. The 2017 NEC rapid shutdown requirement mandated that solar arrays de-energize to 80V within 30 seconds, forcing widespread adoption of module-level power electronics (MLPEs) such as optimizers and microinverters. While designed for safety, these components introduced higher failure rates, increased system costs, and additional wiring connections, creating new risks instead of solving existing ones. Introduced in 2020, UL 3741 is a safety certification standard that ensures photovoltaic (PV) hazard control systems meet requirements for reducing shock risks without the burden of additional shutdown systems.

Unlike traditional systems that rely on module-level power electronics (MLPEs) or rapid shutdown devices (RSDs), UL 3741-compliant solutions—such as SollegaTM's first to market UL3741 compliant FastRack 510-6dg racking system alongside an approved Inverter—can achieve compliance at the system level, completely eliminating the need for additional shutdown components. This allows for a steep reduction in installation and O&M costs and brings down the number of on-roof DC connections by 66% while still maintaining first responder safety.



**Diagram of a UL3741
compliant PV array**

As seen on this diagram, all modules must be strung to the string inverter and be within the PV array boundary. This prevents isolated or "floating" modules that could retain hazardous voltage. All inverters must be within 1ft of the array boundary.