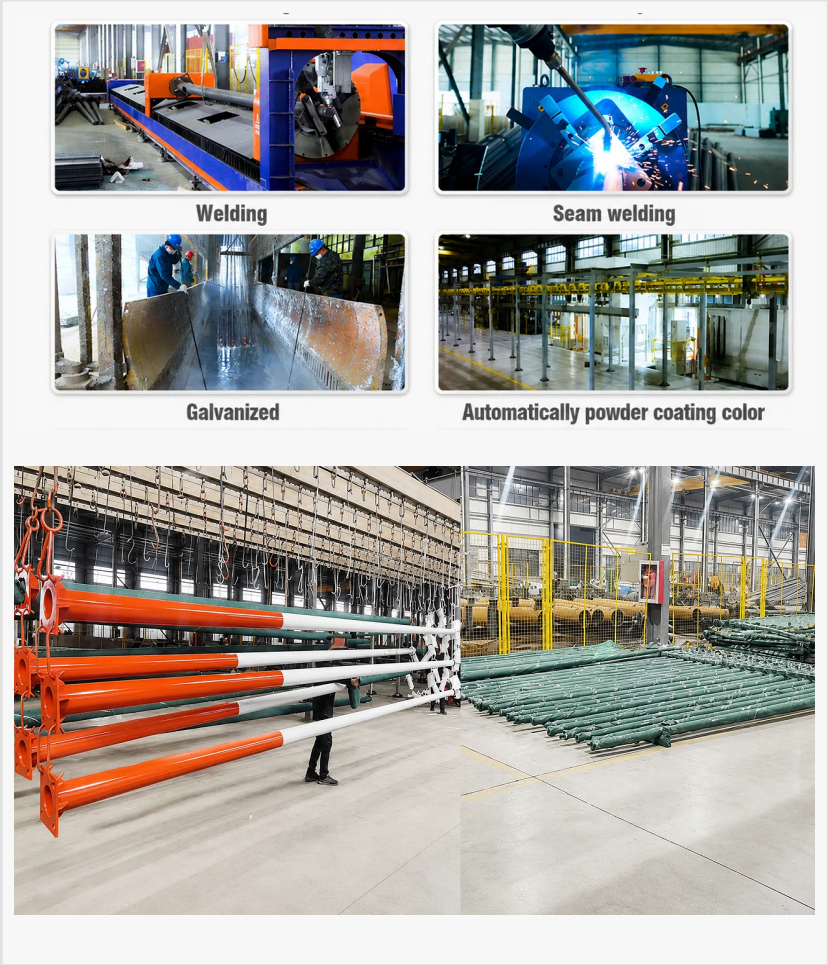
Street Light Pole Manufacturer: TX Solar's Customized Steel Poles for Solar and LED Lighting Systems



YANGZHOU, JIANGSU, CHINA, September 17, 2026 / EINPresswire.com/ -- Highway transit corridors, coastal arterial roads, and municipal street lighting networks require heavy-duty structural support columns capable of bearing dynamic wind shears, dead-weight loads from solar arrays, and high-salinity exposure. Substandard lighting poles with uneven seam welds or insufficient galvanizing frequently experience structural fatigue, vibration resonance, and premature surface corrosion. To address severe environmental wind-load stresses and ensure multi-decade structural durability, Yangzhou Tianxiang Road Lamp Equipment Co., Ltd. (TX Solar / Tianxiang Group) manufactures precision-engineered custom galvanized street light poles tailored to project site wind speeds and specific luminaire configurations.

Established in 2008 with manufacturing heritage dating back to 1996, TX Solar operates automated bending, robotic submerged arc welding, and hot-dip galvanizing lines to deliver 6 to 12 meter municipal poles and heavy-duty high-mast structures up to 35 meters worldwide.

To guarantee long-term structural stability under severe environmental loads, TX Solar fabricates heavy-duty customized steel lighting columns across five foundational technical dimensions:

Structural Steel Grades and Material Selection: Sourcing certified Q235, Q345, carbon steel, and stainless steel alloys to meet demanding project wind load criteria.

Geometric Cross-Section Profiles and Aesthetic Design: Forming round conical, octagonal, and customized polygonal geometries that balance deflection resistance with architectural style.

Mounting Height Scaling and Structural Configurations: Fabricating standard municipal street

columns alongside heavy-duty high-mast and hinged maintenance structures tailored to specific project drawings.
Automated Robotic Welding and Mechanical Precision: Employing submerged arc and robotic seam welding to produce uniform, high-penetration longitudinal joints.
Hot-Dip Galvanizing and Dual-Layer Surface Protection: Delivering internal and external molten zinc coatings coupled with electrostatic polyester powder finishes for long-term corrosion prevention.

Structural Steel Grades and Material Selection

Selecting proper raw materials determines pole yield strength, deflection characteristics, and resistance to environmental fatigue. TX Solar sources certified high-grade structural steel from audited steel mills. For standard municipal roadways, Q235 carbon steel delivers reliable tensile strength and excellent weldability. For heavy wind corridors, high-speed highways, and large solar bracket arrays, TX Solar forms poles from high-strength Q345 alloy steel. For specific roadway cross-sections, engineering teams customize base diameters, top tapers, and wall thicknesses to balance structural stiffness with dead-load efficiency. In municipal transit projects delivered by TX Solar across typhoon-prone regions like the Philippines, engineering teams reinforced structural wall thicknesses and anchor base flanges to withstand extreme dynamic gust pressures. For coastal roadways, marine ports, and high-salinity zones, the factory supplies customized stainless steel and aluminum alloy poles. This material versatility guarantees optimal mechanical performance across diverse global installation environments.

Geometric Cross-Section Profiles and Aesthetic Design

Cross-sectional geometry directly influences pole bending resistance and urban architectural compatibility. TX Solar operates large hydraulic bending presses that shape steel plates into diverse structural geometries. Conical round poles provide smooth aerodynamic profiles and classic aesthetic proportions for urban avenues. Octagonal and dodecagonal polygonal poles offer enhanced sectional stiffness against multi-directional gusting winds. For challenging desert climates, TX Solar engineers reinforced structural profiles designed to resist continuous high-temperature exposure and abrasive sand conditions. For modern urban boulevards and commercial developments, columns can be finished in customized RAL architectural colors, including specialized matte black exterior coatings. Selected configurations can also be engineered as multifunctional smart poles integrating optional CCTV surveillance and municipal environmental sensors.

Mounting Height Scaling and Structural Configurations

Roadway width, lane count, and setback distances dictate required luminaire mounting heights and arm outreach. TX Solar fabricates standard steel poles across heights from 6 to 12 meters for municipal roads, highways, and commercial corridors. The factory supports single, double, and customized multi-fixture bracket arrangements. To streamline ongoing maintenance without requiring heavy crane trucks, available configurations include mid-hinged folding poles that allow ground-level servicing. For complex intersection and logistics projects across Southeast Asia, such as arterial road developments in Thailand and Cambodia, TX Solar supplies heavy-

duty high-mast systems ranging up to 35 meters. These high mast columns incorporate motorized automatic lifting mechanisms for convenient ground-level luminaire inspection. Base flanges feature reinforced gusset plates to ensure secure anchor bolt engagement under severe wind loads.

Automated Robotic Welding and Mechanical Precision

Welding consistency forms the backbone of structural safety under continuous cyclic wind loading. TX Solar equips its pole manufacturing lines with automated submerged arc and robotic seam welding systems. Automated tracking sensors maintain uniform weld bead height and complete root penetration along the full longitudinal length. Automated welding eliminates manual seam variations. This automation secures consistent joint strength across high-volume production batches. Precision plasma cutting machines form access hatches, wire routing ports, and base flange mounting slots with tight tolerances. Internal wiring access doors feature weather seals and secure fasteners. These precision details allow field electricians to complete cable connections quickly and safely.

Hot-Dip Galvanizing and Dual-Layer Surface Protection

Long-term corrosion resistance preserves structural integrity and maintains visual aesthetics in harsh outdoor environments. TX Solar subjects every fabricated steel pole to chemical pickling, fluxing, and immersion hot-dip galvanizing. Molten zinc forms a metallurgical iron-zinc alloy layer over both internal and external surfaces. The resulting hot-dip galvanized coating provides decades of sacrificial cathodic protection. Following galvanizing, poles undergo surface preparation and electrostatic polyester powder coating. The baked powder finish creates a durable, weather-resistant top layer in customized RAL colors. On infrastructure installations executed by TX Solar across diverse overseas environments—including intense equatorial UV corridors in Kenya and Uganda and arid, high-temperature zones in Uzbekistan—this dual-layer finish prevents thermal cracking, surface chalking, and abrasive dust erosion. This dual-layer protective system delivers long-term corrosion resistance and structural durability against humid, industrial, and outdoor weathering environments.

Factory Direct Manufacturing Capacity and Engineering Support

Sourcing customized steel light poles directly from an established vertically integrated manufacturer eliminates intermediary trading markups while guaranteeing exact structural compliance with international project specifications. TX Solar operates dedicated heavy plate shearing, hydraulic press braking, robotic submerged arc welding, and surface treatment lines across its 62,000 square meter manufacturing base. Backed by 16 senior structural engineers and 63 technical patents, the technical department provides comprehensive wind load simulations, anchor foundation bolt calculations, and CAD construction drawings for municipal contractors. Before dispatch, quality inspectors conduct multi-point dimensional verifications, ultrasonic weld seam inspections, and zinc coating thickness tests on every production batch. Having delivered over 1,700,000 lighting assemblies to infrastructure projects worldwide—including verified road lighting contracts executed by TX Solar across Southeast Asia, Central Asia, and Africa—the manufacturer ensures dependable high-volume output and robust

structural reliability for international highway tenders.
Highway contractors can download certified structural CAD files, pole base dimension sheets, and wind rating data directly from the TX Solar portal. Consult our structural engineering division for custom lighting pole manufacturing quotations at https://www.txzmlamp.com/.

Yangzhou Tianxiang Road Lamp Equipment Co., Ltd.
Yangzhou Tianxiang Road Lamp Equipment Co., Ltd.
+ +86 13905254640
email us here
Visit us on social media:
Facebook
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X

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