



# TS45 Flashing LED Edge Lit Traffic Signs MUTCD Compliant



*Pedestrian Crossing Sign (W11-2)*

## General Description

The TS45 conforms to the specifications of the Federal Highway Administration (FHWA) set forth in the Manual on Uniform Traffic Control Devices (MUTCD). Using the latest advances in LED technology, the TS45 employs a set of synchronized high-intensity LEDs to extend the range of visibility of the sign during the day, night and under the worst weather conditions. Furthermore, the LEDs are flashed, which increases driver awareness of the sign and improves driver compliance. Typical pedestrian applications include: mid-block crosswalks, school zones, shopping malls and hospital parking lots. Typical traffic control applications include: dangerous intersections, roads with excessive speeding, and areas with dense fog.

## Why Our Signs are Better

### High Visibility

- Type IX reflective sheeting provides outstanding reflective brightness, day or night
- High intensity LEDs extend the visibility of the sign under all weather conditions

### Superior Performance

- Low power LED technology reduces system power consumption and operating cost

### Outstanding Durability

- Highway grade .080 aluminum construction provides resistance to corrosion
- The use of highway grade Type IX sheeting helps to maintain long term reflectivity
- Stainless steel security fasteners and Tufnut anti-theft mounting hardware included to keep the sign secure
- Signs are weatherproof to prevent outside elements from entering

## Features

- MUTCD section 2A.07 and 2A.08 compliant
- Made in the USA with the longest warranty in the industry
- Improves driver compliance both day and night
- High visibility, low power consumption
- Fast, easy installation, low maintenance
- Field adjustable LED flashing duration (30 seconds standard)
- Vandal-resistant mounting hardware included
- Multiple power options available: Power Grid (AC), Solar (DC), or Battery (DC)



*School Zone Crossing Sign (S1-1)*



*Stop Sign (R1-1)*

## Solar TS45

A solar powered TS45 is available that features off-grid power generation and independent flashing control.

### Solar TS45 Features

- Solar powered with battery backup, no AC power required
- Autonomy after full charge, up to 25 days flashing 24/7
- MUTCD section 2A.07 and 2A.08 compliant
- Installs easily onto any new or existing sign post
- At night, automatic LED dimming reduces glare for motorists and extends battery life
- High intensity LEDs flash in unison, once per second, commanding the attention of drivers day and night
- Activation options: Continuous 24/7 Flashing, Programmable Timer, or Wireless Push-button



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**TS45 Specifications\***

**Compliance**

- MUTCD section 2A.07 and 2A.08 compliant

**Construction**

- .080 highway grade aluminum and stainless fasteners
- Tufnut security mounting hardware (pole not included)
- Cabinet: Polycarbonate enclosure houses the circuit board, battery, and internal electronic components.

**LED Lighting**

- White, Yellow or Fluorescent Yellow Green sign background: White LEDs standard, Yellow LEDs optional
- Red sign background: Red LEDs standard, White LEDs optional
- G2 Cree high-power LEDs (up to 3.5 W) in sign perimeter border
- Flash rate 50 to 60 times per minute
- Field adjustable LED flashing duration (30 seconds standard)
- LED life expectancy over 100,000 hours
- Visible up to 2 miles away
- Sealed DOT approved lighting

**Circuitry Technology**

- Sealed PCB technology
- 24 hour operation / dusk to dawn operation

**Solar / AC / Battery Specifications\*\***

- 15W solar cell
- AC - 120-240VAC or 277VAC
- DC - 6 volt 18AH SLA battery pack: 3 to 5 year battery life; autonomy after full charge, up to 25 days flashing 24/7



**Options**

- Additional LED lights
- Standard 7 day or deluxe 365 day programmable timers
- Wireless activation, keyfob transmitter, photo-sensor bollard, door switch
- Wired, wireless push-button activation; keyed on/off switch
- Anti-graffiti protective overlay

**Warranty**

- 10 Year Solar Panel (excluding solar wire)
- 2 Year Sign Construction
- 2 Year LED Lights & Circuitry
- 1 Year Battery (warranty only covers batteries supplied by Traffic Safety Corp.)

**Reflective Sheeting**

-  Type IX Fluorescent Yellow Green (FYG) (Standard for warning signs in school zone areas)
-  Type IX (Yellow, Red, White) (Standard for non-school zone areas)

\* All specifications subject to change without notice.  
 \*\* Special configuration (wireless, etc.) signs will have 12 volt 22AH SLA battery with 20W solar cell (22.75" x 16.75" x 1.125", 4.5" depth with bracket).


**Optional Push-Button Activation**  
 Provides a simple and convenient way for pedestrians to activate the signs.



**Optional Photo-Sensor Bollard Activation**  
 Activates signs when pedestrian passes between two bollards.



**Optional Door Switch Activation**  
 Activates signs when a door is opened.



**Optional Keyfob Remote Control Transmitter**  
 Temporarily activates signs with wireless signal.



**MUTCD Signs**



*Bicycle Warning Sign (W11-1)*



*Bike and Pedestrian Crossing Sign (W11-15)*



*Deer Crossing Sign (W11-3)*



*Do Not Enter Sign (R5-1)*



*Do Not Stop on Tracks Sign (R8-8)*

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Grade Crossing Advance Warning Sign (W10-1)



Left Turn Arrow Sign (W1-1L)



Low Clearance with Arrows Sign (W12-2)



Pedestrian Crossing Sign (W11-2)



Reduced Speed Limit Ahead Sign (W3-5)



Right Turn Arrow Sign (W1-1R)



Roundabout Sign (W2-6)



School Bus Stop Ahead Sign (S3-1)



School Speed Limit Ahead Sign (S4-5)



School Speed Limit Sign (S5-1)



School Zone Crossing Sign (S1-1)



Slow Sign (W42-8)



Speed Limit Sign (R2-1)



State Law Stop for Pedestrians Sign (R1-6A)



State Law Yield for Pedestrians Sign (R1-6)



Stop Ahead Sign (W3-1)



Stop and Pedestrian Sign (R1-1, W11-2)



Stop Sign (R1-1)



Wrong Way Sign (R5-1A)



Yield Sign (R1-2)

Custom Signs



Caution Low Clearance Sign



Caution Slow Down Pedestrian Traffic Sign



Emergency Vehicles Only Sign



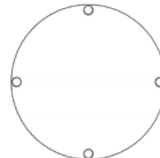
Reduced Speed Ahead Sign



Slow Pedestrian Crossing Sign



Custom Caution Sign



Custom Circular Sign



Custom Circular Warning Sign



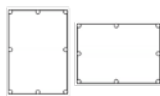
Custom Danger Sign



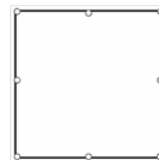
Custom Diamond Sign



Custom Octagon Sign



Custom Rectangle Sign



Custom Square Sign



MUTCD Sign Ordering Codes

Product Code	Sign Type and Size <sup>7</sup>	Sign Faces	Power <sup>3</sup>	Activation Options (select only one)	Reflective Sheeting
SI-TS45 <sup>1,6</sup>	W11130: 30" Bicycle Warning Sign (W11-1) W11136: 36" Bicycle Warning Sign (W11-1) W11148: 48" Bicycle Warning Sign (W11-1) W111530: 30" Bike and Pedestrian Crossing Sign (W11-15) W111536: 36" Bike and Pedestrian Crossing Sign (W11-15) W111548: 48" Bike and Pedestrian Crossing Sign (W11-15) W11330: 30" Deer Crossing Sign (W11-3) W11336: 36" Deer Crossing Sign (W11-3) W11348: 48" Deer Crossing Sign (W11-3) R5130: 30" Do Not Enter Sign (R5-1) R5136: 36" Do Not Enter Sign (R5-1) R8818x24: 18" x 24" Do Not Stop on Tracks Sign (R8-8) R8824x30: 24" x 30" Do Not Stop on Tracks Sign (R8-8) R8830x36: 30" x 36" Do Not Stop on Tracks Sign (R8-8) R8836x48: 36" x 48" Do Not Stop on Tracks Sign (R8-8) W10130: 30" Grade Crossing Advance Warning Sign (W10-1) W10136: 36" Grade Crossing Advance Warning Sign (W10-1) W11L24: 24" Left Turn Arrow Sign (W1-1L) W11L30: 30" Left Turn Arrow Sign (W1-1L) W11L36: 36" Left Turn Arrow Sign (W1-1L) W11L48: 48" Left Turn Arrow Sign (W1-1L) W12230: 30" Low Clearance with Arrows Sign (W12-2) W12236: 36" Low Clearance with Arrows Sign (W12-2) W12248: 48" Low Clearance with Arrows Sign (W12-2) W11224: 24" Pedestrian Crossing Sign (W11-2) W11230: 30" Pedestrian Crossing Sign (W11-2) W11236: 36" Pedestrian Crossing Sign (W11-2) W11248: 48" Pedestrian Crossing Sign (W11-2) W3530: 30" Reduced Speed Limit Ahead Sign (W3-5) W3536: 36" Reduced Speed Limit Ahead Sign (W3-5) W3548: 48" Reduced Speed Limit Ahead Sign (W3-5) W11R24: 24" Right Turn Arrow Sign (W1-1R) W11R30: 30" Right Turn Arrow Sign (W1-1R) W11R36: 36" Right Turn Arrow Sign (W1-1R) W11R48: 48" Right Turn Arrow Sign (W1-1R) W2630: 30" Roundabout Sign (W2-6) W2636: 36" Roundabout Sign (W2-6) W2648: 48" Roundabout Sign (W2-6) S3130: 30" School Bus Stop Ahead Sign (S3-1) S3136: 36" School Bus Stop Ahead Sign (S3-1) S3148: 48" School Bus Stop Ahead Sign (S3-1) S4530: 30" School Speed Limit Ahead Sign (S4-5) S4536: 36" School Speed Limit Ahead Sign (S4-5) S4548: 48" School Speed Limit Ahead Sign (S4-5) S5124x48: 24" x 48" School Speed Limit Sign (S5-1) S1130: 30" School Zone Crossing Sign (S1-1) S1136: 36" School Zone Crossing Sign (S1-1) S1148: 48" School Zone Crossing Sign (S1-1) W42830: 30" Slow Sign (W42-8) W42836: 36" Slow Sign (W42-8) W42848: 48" Slow Sign (W42-8) R2118x24: 18" x 24" Speed Limit Sign (R2-1) R2124x30: 24" x 30" Speed Limit Sign (R2-1) R2130x36: 30" x 36" Speed Limit Sign (R2-1) R2136x48: 36" x 48" Speed Limit Sign (R2-1) R16A12x36: 12" x 36" State Law Stop for Pedestrians Sign (R1-6A) R1612x36: 12" x 36" State Law Yield for Pedestrians Sign (R1-6) W3124: 24" Stop Ahead Sign (W3-1) W3130: 30" Stop Ahead Sign (W3-1) W3136: 36" Stop Ahead Sign (W3-1) W3148: 48" Stop Ahead Sign (W3-1)	D: Double Sided <sup>2,7</sup>	AC: 120-240VAC ACH: 277VAC B: Battery <sup>4</sup> S: Solar	1: Wireless Communication Sign for Wired Activation (push-button not included) 2: Standard Programmable 7 Day Timer 3: Photocell 4: Keyfob Remote Control Transmitter 5: Single Sign for Wired Activation (push-button not included) 6: Deluxe Programmable 365 Day Timer 7: Single Sign for Wireless Activation (push-button not included) 9: Wireless Communication Sign for Wireless Activation (push-button not included) 10: Wireless Communication Sign for Wired Push-button with Audio Caution Message Capability (push-button not included) 11: Photo-Sensor Bollards 12: Door Switch	A: Type IX Fluorescent Yellow Green (FYG) <sup>5</sup> B: Type IX 1: Anti-graffiti Protective Overlay

1. SI-TS45 is used in standalone applications, without a system controller.  
 2. Single sided signs standard. Not available with combo signs.  
 3. 24/7 operation standard.  
 4. Includes spare battery and charger.  
 5. Fluorescent Yellow Green (FYG) sheeting should be used in school zone areas.

6. When ordering, specify size & shape (square, round) of your sign pole. Pole not included, sold separately.  
 7. Sign LED Quantity: 24" signs have 4 LEDs; 30" or larger signs have 8 LEDs; all double sided signs have 4 LEDs per side; all solar combo signs have 4 LEDs on each sign (specify additional LEDs when ordering).  
 8. Please specify custom lettering and graphics when ordering.  
 9. Automatic LED dimming at night standard.

Many additional sign types, messages and sizes are available. Call for details.

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**MUTCD Sign Ordering Codes**

Product Code	Sign Type and Size <sup>7</sup>	Sign Faces	Power <sup>3</sup>	Activation Options (select only one)	Reflective Sheeting
SI-TS45 <sup>1,6</sup>	R11W11224: 24" Stop and Pedestrian Sign (R1-1, W11-2) R11W11230: 30" Stop and Pedestrian Sign (R1-1, W11-2) R11W11236: 36" Stop and Pedestrian Sign (R1-1, W11-2) R1124: 24" Stop Sign (R1-1) R1130: 30" Stop Sign (R1-1) R1136: 36" Stop Sign (R1-1) R1148: 48" Stop Sign (R1-1) R51A36x24: 36" x 24" Wrong Way Sign (R5-1A) R1230: 30" Yield Sign (R1-2) R1236: 36" Yield Sign (R1-2) R1248: 48" Yield Sign (R1-2)	D: Double Sided <sup>2,7</sup>	AC: 120-240VAC ACH: 277VAC B: Battery <sup>4</sup> S: Solar	1: Wireless Communication Sign for Wired Activation (push-button not included) 2: Standard Programmable 7 Day Timer 3: Photocell 4: Keyfob Remote Control Transmitter 5: Single Sign for Wired Activation (push-button not included) 6: Deluxe Programmable 365 Day Timer 7: Single Sign for Wireless Activation (push-button not included) 9: Wireless Communication Sign for Wireless Activation (push-button not included) 10: Wireless Communication Sign for Wired Push-button with Audio Caution Message Capability (push-button not included) 11: Photo-Sensor Bollards 12: Door Switch	A: Type IX Fluorescent Yellow Green (FYG) <sup>5</sup> B: Type IX 1: Anti-graffiti Protective Overlay

**Custom Sign Ordering Codes**

Product Code	Sign Type and Size <sup>7</sup>	Sign Faces	Power <sup>3</sup>	Activation Options (select only one)	Reflective Sheeting
SI-TS45 <sup>1,6</sup>	Specify size, shape, lettering and graphics	D: Double Sided <sup>2,7</sup>	AC: 120-240VAC ACH: 277VAC B: Battery <sup>4</sup> S: Solar	1: Wireless Communication Sign for Wired Activation (push-button not included) 2: Standard Programmable 7 Day Timer 3: Photocell 4: Keyfob Remote Control Transmitter 5: Single Sign for Wired Activation (push-button not included) 6: Deluxe Programmable 365 Day Timer 7: Single Sign for Wireless Activation (push-button not included) 9: Wireless Communication Sign for Wireless Activation (push-button not included) 10: Wireless Communication Sign for Wired Push-button with Audio Caution Message Capability (push-button not included) 11: Photo-Sensor Bollards 12: Door Switch	BO: Black on Orange BW: Black on White BY: Black on Yellow BYG: Black on Fluorescent Yellow Green RW: Red on White WR: White on Red 1: Anti-graffiti Protective Overlay

1. SI-TS45 is used in standalone applications, without a system controller.  
2. Single sided signs standard. Not available with combo signs.  
3. 24/7 operation standard.  
4. Includes spare battery and charger.  
5. Fluorescent Yellow Green (FYG) sheeting should be used in school zone areas.

6. When ordering, specify size & shape (square, round) of your sign pole. Pole not included, sold separately.  
7. Sign LED Quantity: 24" signs have 4 LEDs; 30" or larger signs have 8 LEDs; all double sided signs have 4 LEDs per side; all solar combo signs have 4 LEDs on each sign (specify additional LEDs when ordering).  
8. Please specify custom lettering and graphics when ordering.  
9. Automatic LED dimming at night standard.

Many additional sign types, messages and sizes are available. Call for details.



How to Specify the TS45

1. Sign Materials - Construction - Compliance

- a. Sign reflective sheeting in compliance with current MUTCD requirements for reflectivity, wording, materials and mounting guidelines.
b. Pole mounting requirements per MUTCD guidelines.
c. Sign constructed of .080 aluminum with stainless / aluminum fasteners and weatherproof sealant.
d. All mounting hardware fasteners shall be theft deterrent hardware preferably Tufnut security hardware where applicable.
e. 3/8" x 3" stainless steel tap bolts for standard mounting hardware (other mounting options available).
f. Cabinet: Sealed, weatherproof polycarbonate enclosure houses the circuit board, battery, and internal electronic components, with an integrated weep hole to allow moisture drainage and minimize internal condensation.
g. Security keyed ON/OFF switch located on side of cabinet controlling operation.
h. Compression type solar panel connector allowing optimum directional placement of solar collector.
i. Anti-theft placards and decals for theft / vandalism deterrents.
j. Serial # plate with manufacture date for informational and warranty purposes.

2. Power Consumption

Table with 3 columns: Power Consumption, 12 Volt, 6 Volt. Rows include Full Brightness (daytime) and Dimmed (nighttime) with corresponding amperage and wattage values.

3. Battery

Table with 3 columns: Battery, 12 Volt, 6 Volt. Rows include Dimensions, Weight, Terminal Connector, Operating Temperature, and Warranty.

- a. Battery mounting with aluminum fasteners and brackets for in-field replacement after life cycle has expired.
b. Battery casing fully sealed in a moisture and corrosion proof casing.
c. Required battery replacement every 18 months from manufacture date.
d. Warranty only covers batteries supplied by Traffic Safety Corp.
e. Any damage to the sign caused by unauthorized third-party batteries will void all sign warranties.

4. Solar Panel Collector

- a. Solar panels to be 6/12 volt 15/20/30 watt collector type depending on type of sign, region, LED light quantities and application uses.

Table with 4 columns: Solar Panel Collector, 15 Watt, 20 Watt, 30 Watt. Rows include Max Power, Operating Voltage, Operating Current, Max Voltage, Operating Temperature, Dimensions, and Type.

- b. Solar panel bracket constructed of aluminum alloy.
c. Schedule 40 3/4" aluminum tubing attached to the solar panel bracket to the cabinet. Panel must face south.
d. Angle of panel shall be 45° to 65° depending on region. Special attention required to insure solar collector has good access to solar power with no obstructions for optimum operation.
e. Electrical connectors shall be insulated spade type connectors.
f. Tempered glass solar cell sealer/protector.

5. LED Lights (Light Emitting Diodes)

- a. Sign shall have a series of either 4 - 8 LEDs depending on sign size and configuration.
b. All LEDs shall be compliant to MUTCD Section 2A.07 and match colors acceptable to each type of signal per this specification.
c. LED flash rate at 50 to 60 times per minute per MUTCD Section 2A.07 requirements.
d. LED light dimensions: 1/8" Cree LED inside a 1-1/4" diameter lens.
e. 100,000 hour rated LED life (11.415 years).
f. High impact acrylic water/vibration proof housing lens.
g. Completely resin sealed lens.
h. Operating voltage: 6/12 VDC / Amp Draw 85ma.
i. Output power of LEDs approximate 60,000 mcd brightness.
j. LEDs wired in series for simultaneous flash pattern per MUTCD.
k. Wiring completely enclosed in cabinet with access for replacement.

6. Circuitry / LED Lighting Control Unit

- a. Circuit shall have a minimum of 4 output LED light circuits for use.
b. Circuit shall control flash rates at 50 to 60 times per minute.
c. Circuit shall flash 500 milliseconds / 150 milliseconds per flash.
d. Activation duration shall be field adjustable in one-second increments, over a range of 1 to 99 seconds (30 seconds standard).
e. Available dusk-to-dawn flash mode.
f. Micro-controller technology.
g. Keyed "ON/OFF" activation for tamper/vandalism protection.
h. Operation of circuit temperatures -40°C to +80°C.
i. Circuit enclosed in weatherproof cabinet.
j. Low voltage protection program (protecting from total discharge of battery).
k. All wiring connections in accordance to standard wiring protection guidelines.

7. Warranty

- 10 Year Solar Panel (excluding solar wire)
• 2 Year Sign Construction
• 2 Year LED Lights & Circuitry
• 1 Year Battery (warranty only covers batteries supplied by Traffic Safety Corp.)