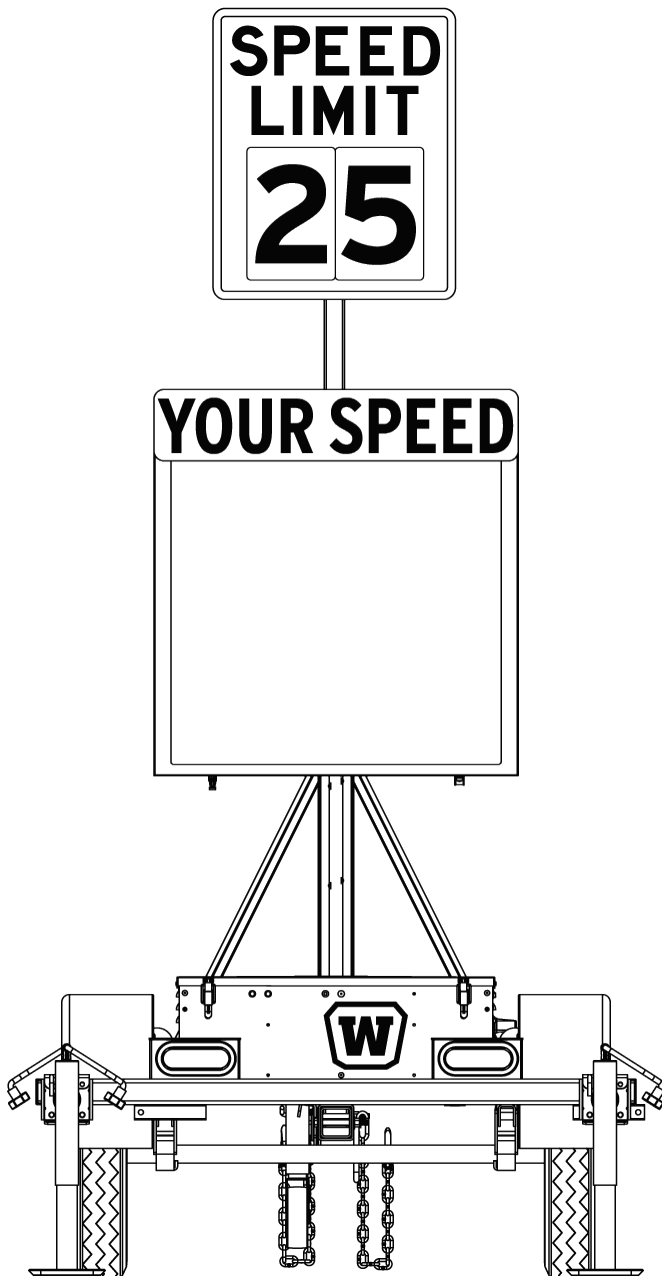


COMPACT RADAR-SPEED TRAILERS

MODEL WSDT3
PRODUCT SPECIFICATIONS | MAY 2015



1. SYSTEM

1.1. Description Wanco speed trailers provide vehicle speed detection and display, in a portable platform that does not require permanent installation or wiring.

Using built-in radar, the speed trailer detects the speed of oncoming vehicles, then displays that speed on its full-matrix LED display panel, informing drivers of their actual speed. Formal studies have proven that speeding drivers respond by slowing down to legal limits when their actual speed is displayed on an electronic sign.

Studies also indicate that some drivers “test” radar-based speed displays by driving very fast. To address this danger, Wanco speed signs do not display excessive speed, but instead employ their full-matrix display to flash a message or symbol at drivers, to indicate they are going much too fast.

1.2. Models

1.2.1. WSDT3-S Wanco compact radar-speed trailer with full-matrix electronic display and regulatory speed-limit sign

1.2.2. WSDT3-SPD Wanco compact radar-speed trailer with full-matrix electronic display and regulatory speed-limit sign, blue-and-white color scheme for law enforcement agencies

1.3. Temperature limits Operating temperature, -4 to 176°F (-20 to 80°C)

1.4. Standards Compliant in accordance with:

MUTCD, December 2009	§2A.18, Mounting Height
ITE Standard, June 2007	§5.82, Nighttime Dimming; §6.4.3, Environmental Tests; §6.4.6.3, Electronic Noise
International Protection Rating	IP14
FCC	Title 47, Part 15 (47 CFR 15)

2. FEATURES

- 2.1. Operation
- Extra-large electronic speed display with full matrix of LEDs
 - Visors and shades over LEDs produce superior visibility
 - Display visible over standard Jersey barrier traffic divider
 - Display flashes when a vehicle exceeds speed limit
 - Selectable speed limit setting
 - Configurable, flashing excessive-speed message
 - One or two digits displayed in mph, two or three digits in km/h
 - See-through design puts pedestrians in view
 - Regulatory speed-limit sign with easily changeable speed numbers
 - Approach-only K-band radar
 - Compact and easy to transport
 - Integral tamper-resistant control box with cover that locks (with key) when latched

- 2.2. Power system
 - Battery powered and solar charging
 - Energy-efficient operation results in long run times
 - Solar panel charges batteries automatically without intervention
 - Charging system shuts down when batteries are fully charged, preventing damage
 - Power system allows battery charging with solar panels or commercial power
 - Cooling fan protects battery charger from overheating
 - Battery box can be locked to prevent unauthorized access
- 2.3. Maintenance
 - Individual display modules can be replaced easily
 - Standard trailer tires
 - Heavy-duty bolt-on steel fenders can be replaced if damaged
 - Durable powder-coat finish resists the elements
- 2.4. Application

Common applications include:

 - School zones
 - Residential streets
 - Work zones
 - Rural roads
 - Highways
 - Public events

3. DISPLAY

- 3.1. Display behavior

0 to 50% of speed limit setting	Display is blank
> 50% to 100% of speed setting	Display shows vehicle speed
> 100% to ~130% of speed setting	Display flashes vehicle speed
> ~130% of speed setting	Display flashes configured excessive-speed message
Flash rate	> 60 cycles per minute

See Exhibit A for precise display activation speeds

- 3.1.1. Speed display

Signal input from integral radar head (see Radar)

One or two digits, 5 to 99 mph; two or three digits, 10 to 170 km/h

Units are selectable

One bold font, 26" (66cm) high, characters vary in width

- 3.1.2. Excessive-speed messages

Selectable with DIP switches on systems PC board, located inside display cabinet

Can be viewed in Preview operating mode using speed limit switch on control panel

Default: SLOW DOWN (text) message

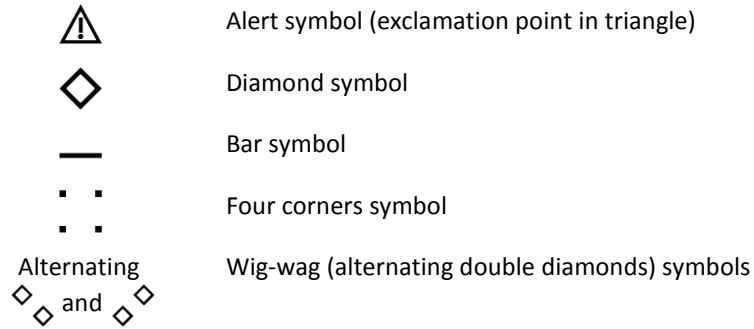
Blank (no message)

SLOW
DOWN

Slow down (text) message



Frowning face symbol



3.2. Cabinet

3.2.1. Description

Cabinet contains all electronics and controls
 Door on front of cabinet provides access to interior
 Hinged control-console door on back provides access to controls

3.2.2. Size

36" x 36" x 5" (91 x 91 x 12 cm), W x H x D

3.2.3. Material

Aluminum alloy sheet, 0.06" (1.58mm) thick

3.2.4. Construction

Forms wrap around top, sides, back and bottom
 Dust- and weather-resistant; not rated, comparable with NEMA 4 (IP54)

3.2.5. Door

Rigid door frame, hinged at top and latched at bottom, stays opens for easy maintenance; latches accept user-supplied padlocks

3.2.6. Finish

Pre-wash Cabinet and door are run through a five-stage, high-pressure, phosphate wash prior to finish coat

Coating Cabinet and door are coated with oven-baked, white powder-coat finish to ensure durability and corrosion protection

3.2.7. Window

Clear polycarbonate resin thermoplastic window installed in door frame, UV-resistant, anti-glare surface, 0.150" thick

3.2.8. Location

Mounted to welded steel frame on tower, below speed limit sign

3.2.9. Height

49" (125cm) from ground to bottom of cabinet

3.3. "YOUR SPEED" sign

Type 3 high-intensity reflective sheeting, attached to front door panel with five bolts

3.4. Display matrix

3.4.1. Display modules

Modular design Four display modules; any module can be installed in any position in the matrix without repositioning DIP switches

Wiring Modules have quick-connect electrical connectors for easy servicing

	Replacement	Each module can be exchanged in less than two minutes with a 5/16-inch nut driver socket or slotted screwdriver After a new module is installed, a one-step initialization process causes each module to sense its position in the full-matrix display	
	Firmware	A program chip is socket replaceable for easy firmware upgrades	
	Size	16.0" (40.6cm) wide by 13.13" (33.3cm) high, nominal	
	Material	FR4 glass-reinforced epoxy laminate, double-sided, black solder mask with white silkscreen Board thickness, 0.094" (2.388mm) Copper size, 1 oz. (28.4g)	
	Coating	5-mil, military-spec, low-VOC, silicone conformal coating (Dow Corning 1-2577) provides long-term protection against moisture and other atmospheric contaminants, resists corrosion and shorts due to high humidity	
	Vibration mounts	All display modules are mounted on rubber vibration-isolation mounts, decreasing risk of physical shock during transport and isolating characters from chassis ground	
	Temperature limits	-40 to 176°F (-40 to 80°C)	
	Humidity limits	Conformal coating rated to 95% relative humidity	
3.4.2.	LEDs	Technology	AllInGaP II (aluminum indium gallium phosphide) technology, T-1½ size, through-hole auto-insertion
		Color range	Amber, 589.5 to 592.0 nm
		Current	100 mA peak-pulsed forward current
		Temperature limits	Operating temperature, -40 to 212°F (-40 to 100°C)
3.4.3.	Pixels	Description	Two LEDs form a "pixel"
		Display module	12 pixels wide by 10 high, 120 pixels total
		Full matrix	24 pixels wide by 20 high, 480 pixels total
		Pixel size	0.5" x 0.5" (12.7 x 12.7mm)
		Pixel pitch	34.3mm, horizontal and vertical

- 3.4.4. Lenses and visors Each pixel has a snap-in optical lens over the LEDs, enhancing the brightness and angularity of each pixel while reducing power consumption.
- A polycarbonate visor shades each row of pixels to eliminate glare caused by direct sun exposure. The sunshades snap onto the display module without tools. The lenses snap into the sunshades.
- These enhancements enable the speed display to conserve power and operate with high efficiency.
- 3.4.5. Viewing angle Total viewing area with optical lenses, 50 degrees
- 3.4.6. Legibility > 1/4 mile (402m)
- 3.4.7. Visibility > 1/2 mile (805m)
- 3.4.8. Brightness Factory preset for optimal visibility and power consumption
- 3.4.9. Auto dimming Two photocells detect ambient light on the speed display; the system automatically adjusts the brightness of the LEDs accordingly, dimming display brightness in darkness, increasing to full brightness in daylight
- Photocells are mounted inside the display cabinet, one facing rear and one facing front
- Auto dimming is unaffected by temporary light sources such as vehicle headlights
- 3.4.10. Software design Driver LEDs controlled through 30mA pulse-width modulation design
- Addressing Each display module address is selected through a software command; no DIP switches are used. The address does not change until reprogrammed.

4. CONTROL CONSOLE

- 4.1. Location Back of speed display box, inside weatherproof compartment, behind a hinged control console door. Two key-operated latches keep door locked when latched.
- 4.2. Controls Two rotary switches for selecting operating mode and speed limit
- A three-digit LED status display indicates operating mode, speed shown on the full-matrix display, error codes and more, depending on the operating mode and other factors
- Green, orange, and red LED status indicators signify power is on, the solar charging system is active, activated alarms need checking, battery charge is low, and power failure
- To conserve power, the status display and indicators power off automatically after a few seconds, reactivated with a momentary push-button switch or by using either rotary switch

4.2.1. Operating modes	A rotary switch allows selection of operating mode:
Off	Radar and matrix display are off All auxiliary devices are off Status display shows "OFF" or error codes (if any) Solar charging system is active
Run	Normal operating mode Radar and matrix display are on All auxiliary devices are on Status display shows selected speed limit or error codes (if any) Solar charging system is active
Run & beacons	Used with optional flashing beacons, which are not offered with these speed-trailer models
Data Collector only	Used with optional Traffic Data Collector, when traffic data collection is desired without displaying speed Radar and matrix display are off Data Collector is on All other auxiliary devices are off Status display shows "CLA" Solar charging system is active
Data Collector & beacons	Used with optional flashing beacons, which are not offered with these speed-trailer models
Schedule	Used with optional timer for automated on/off control Off and Run modes are controlled by timer Matrix display, radar, and all optional auxiliary devices are controlled by timer Status display shows "Sch" Solar charging system is active
Demo	Used for ensuring matrix display is performing correctly Matrix display consecutively shows 1-, 2-, and 3-digit speeds, SLOW DOWN message, and frowning face symbol If installed, flashers are active during excessive-speed message Radar is off Data Collector is on All other auxiliary devices are off Status display shows "[d]" Solar charging system is active

Preview	<p>Used for viewing available excessive-speed messages and other test patterns, one at a time, regardless of the configured message</p> <p>Matrix display shows one excessive-speed message, which can be changed by rotating the speed limit selector (when the speed limit selector is in the “0” position, the display is blank)</p> <p>Radar is active</p> <p>Data Collector is on</p> <p>All other auxiliary devices are off</p> <p>Status display shows “[P]”</p> <p>Solar charging system is active</p>
Radar setup	<p>Continuous speed mode</p> <p>Used when replacing or testing radar, aligning trailer to traffic, or when traffic calming is not desired</p> <p>Matrix display shows actual speed regardless of speed limit</p> <p>Data Collector is on</p> <p>All other auxiliary devices are off</p> <p>Status display shows actual speed</p> <p>Solar charging system is active</p>
Power test	<p>Power, auxiliary devices, matrix LEDs, and battery load test mode</p> <p>Used for verifying all matrix-display pixels are functioning, for testing any auxiliary device after replacement, or to fully load the battery and verify it holds a charge</p> <p>Matrix display has all LEDs lit, at fixed brightness</p> <p>Radar is off</p> <p>Data Collector is on</p> <p>All other auxiliary devices are off</p> <p>Status display shows the system (AC or battery) voltage</p> <p>Solar charging system is active</p>
Status	<p>System status mode</p> <p>Used for diagnostics and troubleshooting</p> <p>Speed Limit rotary switch selects sensor (voltage, current, temperature, etc.)</p> <p>Matrix display shows individual sensor readings with labels and extra decimals</p> <p>Radar is active</p> <p>Data Collector is on</p> <p>All other auxiliary devices are off</p> <p>Status display shows sensor reading</p> <p>Solar charging system is active</p>

	Service	Initialization mode Used when installing display modules and uploading software Matrix display shows alphabet characters Data Collector is on All other auxiliary devices are off Status display shows “[S]” Solar charging system is active
4.2.2.	Speed settings	Choose speed limit with rotary switch: 10 to 75 mph in 5 mph increments 20 to 130 km/h in 10 km/h increments Units factory configured based on user-specifications, miles per hour (mph) or kilometers per hour (km/h); selectable with DIP switches on the systems PC board
4.3.	Technology	State-of-the-art, solid-state electronics
4.4.	PCB coating	5-mil, military-spec, silicone conformal coating provides long-term protection against moisture and other atmospheric contaminants
4.5.	Temperature limits	−4 to 176°F (−20 to 80°C)
5. RADAR		
5.1.	Description	Radar senses the largest, nearest mass moving toward it
5.2.	Sensor	Microwave K-band, approach-only
5.3.	Location	Radar head located inside display cabinet, centered at top of electronic display, allowing sign to be installed on either side of road
5.4.	Distance range	1000 ft. (305 m)
5.5.	Speed range	5 to 138 mph (8 to 222 km/h)
5.6.	Accuracy	mph ±1 mph from 5 to 40 mph ±2 mph from >40 to 100 mph km/h ±1.6 km/h from 8 to 64 km/h ±3.2 km/h from >64 to 161 km/h
5.7.	Temperature limits	−40 to 185 °F (−40 to 85 °C)
5.8.	Standards	CE compliant FCC approved
5.9.	Calibration	Calibration not required

6. REGULATORY SIGN

- 6.1. Description Regulatory speed limit sign has threaded mounting studs for attaching interchangeable speed limit numbers, which are supplied by the factory and stored in the trailer's battery box
- 6.2. Size 24" x 30" (61 x 76cm), W x H
See "Options and Optional Equipment" for sign options
- 6.3. Height 93" (236cm) from ground to bottom of sign
- 6.4. Material Aluminum sheet, 0.080" (2mm) thick, with high-intensity reflective coating
- 6.5. Location Mounted to welded steel frame on tower; extends above electronic speed display when raised
In transport position, regulatory sign is in front of and partially covers electronic display

7. TRAILER

- 7.1. Frame All welded structural steel
- 7.2. Tie-downs One tie-down loop centered at front of trailer frame
- 7.3. Fenders Round 16ga steel fenders, full wheel coverage, bolted to trailer frame
- 7.4. Finish
- 7.4.1. Prewash Assemblies are run through a five-stage, high-pressure, phosphate wash prior to finish coat
- 7.4.2. Coating Frame is coated with oven-baked, safety-orange powder-coat finish to ensure durability and corrosion protection
See "Options and Optional Equipment" for color options
- 7.4.3. Salt spray resistance 1000 hours (ASTM Method B117) with <1/8" (<3.18mm) creep from scribe
- 7.4.4. QUV exposure 500 hours QUV-B (ASTM Method D4587-05) >75% gloss retention
- 7.5. Axle assembly 2000 lb. (907kg) capacity, 5 on 4.5" B.C. idler hub
- 7.6. Springs Double-eye leaf springs
- 7.7. Tires ST205/75D15 steel-belted trailer tires, load rating B
- 7.8. Drawbar
- 7.8.1. Construction Telescopes inside receiver sleeve welded under trailer frame. Removable for shipping and for added theft protection if needed. Secures with two 1/2-inch diameter bolts.

- 7.8.2. Material 3" (7.62cm) square steel tubing, 3/16" (0.476cm) wall
- 7.8.3. Jack Top-wind swivel, 2000-lb. (907kg) capacity, steel footpad, 10" (25cm) total travel
- 7.8.4. Tow hitch Standard 2-inch ball coupler tow-hitch, SAE Class 2, 3500-lb. (1588kg) capacity. Bolts to drawbar, removable and replaceable.
See "Options and Optional Equipment" for tow-hitch options.
- 7.8.5. Tow chains Two high-test proof coil chain assemblies, with "latching" S-hooks for towing. Chains attached to drawbar with quick connectors.
 - Material diameter 0.406" (10.3mm)
 - Working load limit 5400 lbs. (2450kg)
 - Breaking force 16,200 lbs. (72kN)
- 7.9. Stabilizer jacks Four swivel jacks, each with 2000-lb. (907kg) capacity, one on each corner of trailer frame
- 7.10. Wiring
 - 7.10.1. Description Wiring to connect tow vehicle and trailer for trailer taillights is installed inside drawbar, with pigtails and connectors at both ends; no crimping required
 - 7.10.2. Trailer plug A sealed, molded, 4-square connector plugs into harness under trailer
 - 7.10.3. Tow-vehicle plug Two-piece assembly with 4-flat molded connector on harness plugs into tow vehicle Meets SAE J1239
See "Options and Optional Equipment" for tow-vehicle plug options
 - 7.10.4. Protection All trailer wiring encased in UV protective loom, and attached with P-clamps riveted to trailer frame; no exposed wires
- 7.11. Taillights
 - 7.11.1. Type Two oval-shaped, sealed, combination stop, turn and taillights
 - 7.11.2. Location Mounted to top of trailer deck behind fenders
 - 7.11.3. Mounting No screws used for mounting; bracket is welded to trailer frame; each light is held in place and sealed with snap-in rubber grommet
- 7.12. License plate License plate mounts on battery box rear panel
- 7.13. Reflectors Two amber reflectors, one on each side of trailer
Two red reflectors on rear trailer frame
See "Options and Optional Equipment" for reflective tape

7.14. Tower assembly

- 7.14.1. Function Regulatory sign is raised and lowered on a rotating, telescoping tower. Electronic speed display is installed at a fixed height on lower portion of tower.
- 7.14.2. Tower construction Two sections of square steel tubing with the inner section telescoping inside the outer section. The inner section is zinc plated to prevent corrosion.
- Nylon guide blocks keep the sections tight, eliminating the need for greasing the tower and preventing dirt from building up on the inner tower section. Dirt would cause performance problems and maintenance issues.
- 7.14.3. Swivel base A steel assembly (the “swivel base”) is welded to the trailer frame and holds the tower. The outer tower section rotates on a thrust bearing and washers inside the swivel base, reducing rotating friction.
- 7.14.4. Height lock Spring-loaded locking pin prevents tower from falling if the winch or cable were to fail. Also locks tower when fully lowered into travel position.
- 7.14.5. Winch assembly
- | | |
|----------|--|
| Function | Hand-operated winch raises and lowers tower |
| Capacity | 1500 lbs. (680kg) |
| Brake | Safety friction-brake prevents tower from falling if operator loses grip on winch handle |
| Cable | 1/4" (6.35mm) diameter galvanized aircraft cable |
- 7.14.6. Rotation Tower rotates by hand, pivoting 90 degrees to face traffic or for storage and transport
- 7.14.7. Rotation lock Tower rotation is locked with the same spring-loaded locking pin that locks the tower height. A draw-latch further minimizes movement during transport.

8. POWER SYSTEM

- 8.1. Description Batteries provide system power; batteries charged automatically with integrated solar-based charging system
- 8.2. Battery box
- 8.2.1. Function Holds batteries, remote charger, and spare numbers for speed limit sign
- See “Options and Optional Equipment” for heavy-duty secure battery box
- 8.2.2. Construction Riveted all-steel construction, weather-resistant
- All parts phosphate-washed and powder-coated before assembly
- Divider panel inside box separates batteries from electronics
- Louvers provide ventilation
- Latches keep cover closed and can accept user-supplied padlocks
- 8.2.3. Location Unobstructed location, centered over axle between fenders, bolted to trailer frame

8.3. Batteries

8.3.1. Description Two Group 24 deep-cycle batteries, wired in parallel and series for a 12-volt system
See "Options and Optional Equipment" for battery options

8.3.2. Voltage 6Vdc each

8.3.3. Weight Approx. 60 lbs. (26kg) each

8.3.4. Capacity 215 Ah total capacity @ 12Vdc

8.4. Remote charger

8.4.1. Function Plugs into a standard commercial power source to recharge batteries if battery voltage drops due to lack of sun for automated solar charging system

8.4.2. Type 12-volt battery charger

8.4.3. Location Inside battery box, mounted to divider panel on opposite side from batteries

8.4.4. Output capacity 15A
See "Options and Optional Equipment" for charger output options

8.4.5. Output voltage 13.2Vdc range "float" mode
13.6Vdc range "absorption" mode
14.2Vdc range "bulk" mode

8.4.6. Input voltage 105 to 135Vac, standard three-prong plug

8.4.7. Input frequency 50 to 60 Hz

8.4.8. Cooling Fan cooled when charger temperature reaches 95°F (35°C)

8.4.9. Protection Automotive-style replaceable fuses

8.5. Solar

8.5.1. Panel One high-efficiency multi-crystal photovoltaic solar module

8.5.2. Location Behind regulatory sign, over tower. No shadowing effect on any traffic-facing component. Solar panel lies flat for continuous charging regardless of folding frame position; rises and rotates with signs.

8.5.3. Power output 65W
See "Options and Optional Equipment" for solar power options

8.5.4. Current 3.76A max. system current
4.18A open short-circuit current

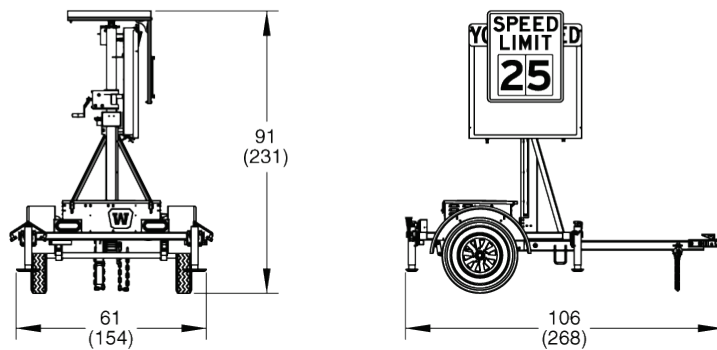
8.5.5. Voltage 17.3Vdc max.
21.6Vdc open short-circuit voltage

- 8.5.6. Voltage regulation Charge from solar panel regulated by systems PC board
- 8.5.7. Security Solar panel bolted to mounting frame with security screws and special security nut
- 8.6. System protection Electrical components fused and reverse-polarity protected
- 8.7. System recovery Recovers from power loss and returns to selected operation mode automatically when power is restored

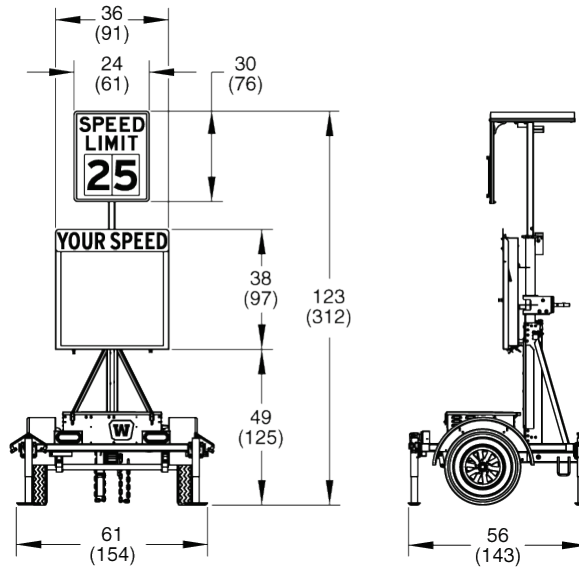
9. DIMENSIONS & WEIGHT

9.1. Dimensions *inches*
 (cm)

Travel position



Deployed



9.2. Weight Approx. 870 lbs. (395 kg)

10. OPTIONS AND OPTIONAL EQUIPMENT

- 10.1. Flashers** Two flashing LEDs lights, located in display cabinet below electronic speed display, flash alternately when vehicles exceed “extreme speed”
Options include red-and-blue “police” flashers or white flashers
- 10.2. Strobe** Strobe light, located in display cabinet below electronic speed display, flashes when vehicles exceed “extreme speed,” simulating photo-radar camera strobe
- 10.3. Regulatory sign** Replace standard speed limit sign with larger sign; contact factory for details
- 10.4. Timer** Provides on/off capability to control times of operation, including time of day, days of the week, and days of the year
- 10.5. Tow hitch**
- 10.5.1. Combo hitch Combo-hitch for 2-inch ball and 2 1/2-inch ID x 1-inch cross-section pintle hook
- 10.5.2. Lunette ring Options Standard ring for 2 1/2-inch ID x 1-inch cross-section pintle hook
Heavy-duty ring for 3-inch ID x 1 5/8-inch cross-section pintle hook
- 10.6. Tow-vehicle plug** Many types of plugs available, prewired at the factory; contact factory for details
- 10.7. Power**
- 10.7.1. Additional batteries For geographic locations with less solar charging potential or colder weather, and for applications that require year-round charging, add batteries for greater capacity
Add two Group 24 deep-cycle batteries in large battery box, 215Ah additional capacity
- 10.7.2. AGM batteries Replace deep-cycle batteries with top-of-the-line absorbed glass mat (AGM) batteries
- Features 100% maintenance-free
Sealed and spill-proof
Faster recharge and greater freeze resistance than conventional batteries
Contains less lead than conventional batteries
- Options One 4D AGM 12Vdc batteries in standard battery box, 200Ah total capacity
Two 4D AGM 12Vdc batteries in large battery box, 400Ah total capacity
- Weight Approx. 160 lbs. (72kg) each
- 10.7.3. Charger When required for faster battery charging, replace standard remote charger with higher amperage, 45-amp, 12-volt charger
- 10.7.4. Solar For geographic locations with less solar charging potential or colder weather, and for applications that require year-round charging, additional solar power is available
Options include 85W and 130W solar panels; contact factory for details

- 10.8. Large battery box and license plate holder** Large battery box is required when the speed trailer has more than two standard batteries or more than one AGM battery
Replaces standard battery box
Centered over trailer axle, bolted to trailer frame
Same construction as standard battery box
License plate holder is added when the speed trailer uses the large battery box; mounted under rear trailer frame
- 10.9. Secure battery box** High-security battery box features heavy-gauge steel lid, hidden hinges, and heavy-duty hidden-shackle padlocks. Replaces standard battery box.
License plate holder is added when the speed trailer uses the secure battery box; mounted under rear trailer frame
- 10.10. Reflective tape** Reflective red-and-white conspicuity tape across rear trailer frame for increased visibility
- 10.11. Finish color** Specify power-coat color and, if applicable, color scheme
- 10.12. Traffic Data Classifier System**
- 10.12.1. Design Radar-based, nonintrusive, does not require loops or hoses, no disturbance of traffic flow during installation or use
 - 10.12.2. Direction Registers both approaching and receding vehicles
 - 10.12.3. Traffic lanes Most effective for 2-lane roads
 - 10.12.4. Traffic count Can record data for more than 1 million vehicles in internal memory
 - 10.12.5. Data format Speed, date, time, direction, length for each vehicle
 - 10.12.6. Units English or metric
 - 10.12.7. Time stamp Yr,Mo,Dy,Hr,Min,Sec.
 - 10.12.8. Speed range 5 to 138 mph (8 to 222 km/h)
 - 10.12.9. Sensor Microwave K-band 24.125 GHz
 - 10.12.10. Power Uses radar-speed sign power supply
 - 10.12.11. Power output 20 dbm (EIRP)
 - 10.12.12. Current 110 mA
 - 10.12.13. Temperature Operating limits, -40 to 185 °F (-40 to 85 °C)
 - 10.12.14. Internal memory 1MB (1,048,576 bytes)
 - 10.12.15. Baud rate 9600, 8 bit, no parity
 - 10.12.16. Installation Mounted below electronic speed display in adjustable bracket

EXHIBIT A: DISPLAY ACTIVATION SPEEDS

Miles per hour (mph)

User-Set Speed Limit	Vehicle Speed Triggered	Flashing Vehicle Speed Triggered	Excessive-Speed Message Triggered
10	5	11	13
15	8	16	20
20	10	21	25
25	15	26	30
30	20	31	37
35	29	36	45
40	34	41	50
45	39	46	55
50	44	51	60
55	49	56	65
65	59	66	75
75	69	76	85

Kilometers per hour (km/h)

User-Set Speed Limit	Vehicle Speed Triggered	Flashing Vehicle Speed Triggered	Excessive-Speed Message Triggered
20	10	21	24
30	16	31	38
40	24	41	48
50	34	51	61
60	50	61	76
70	60	71	86
80	69	81	96
90	79	91	106
100	90	101	116
110	100	111	126
120	109	121	136
130	119	131	146