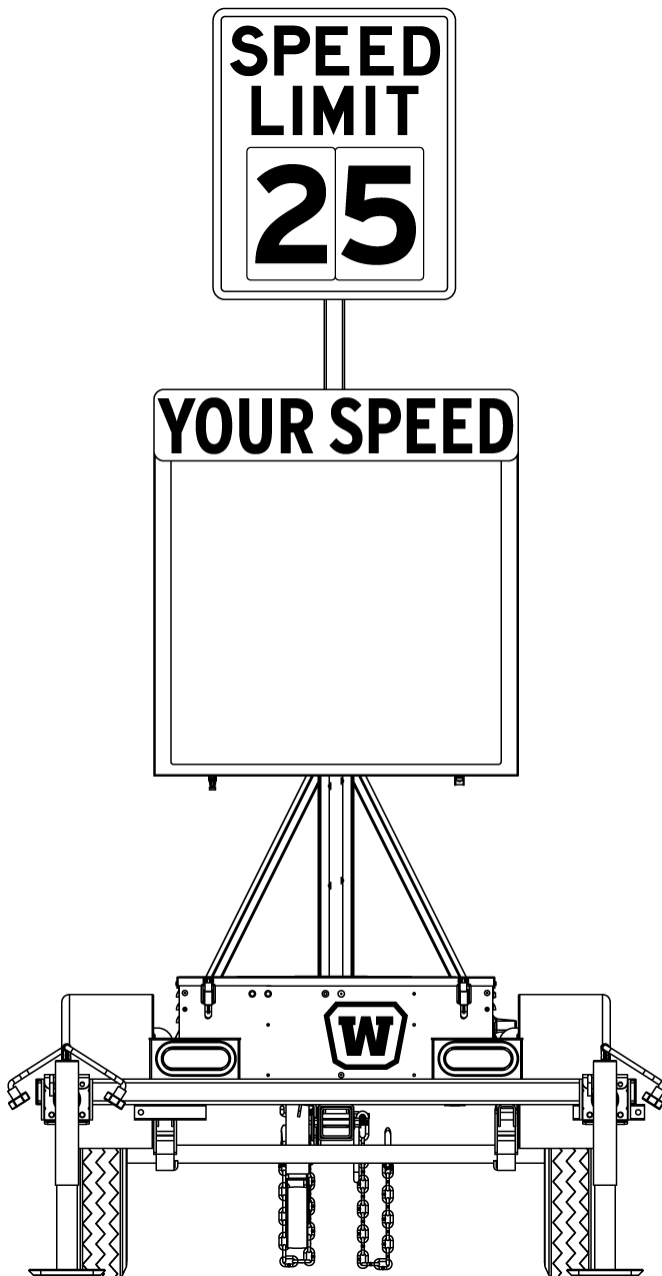


COMPACT RADAR-SPEED TRAILERS

MODEL WSDT3
PRODUCT SPECIFICATIONS | DECEMBER 2018



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) |

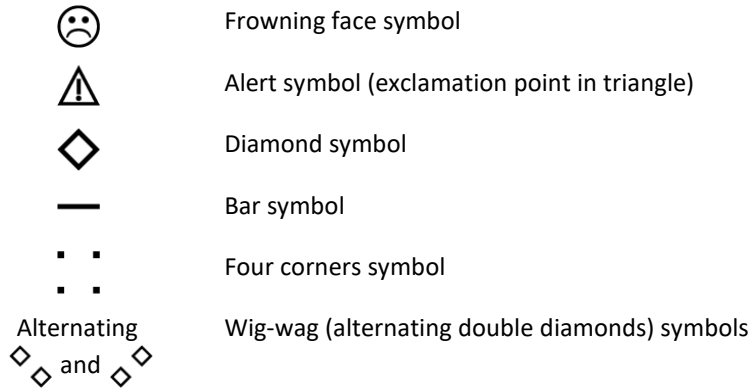
2. FEATURES

- 2.1. Setup
- Portable system is easy to transport and deploy
 - Regulatory speed-limit sign has changeable speed numbers
 - Selectable speed limit setting
 - Configurable, flashing excessive-speed message
 - Heavy-duty hand-winch with safety brake raises regulatory sign for deployment
 - Locking device holds signs frame in place while operating and during transport
- 2.2. Operation
- Extra-large electronic speed display with full matrix of LEDs
 - Lenses and shades over LEDs produce superior visibility
 - Display visible over standard Jersey barrier traffic divider
 - Display flashes when a vehicle exceeds speed limit
 - One or two digits displayed in mph, two or three digits in km/h
 - Approach-only K-band radar

- Weather-resistant control box cover has lockable latches
 - See-through design puts pedestrians in view
- 2.3. 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
 - Unique system allows battery charging with solar panel or commercial power
 - Cooling fan protects battery charger from overheating
 - Battery box can be locked to prevent unauthorized access
- 2.4. 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
- 2.5. Application
- Common applications include:
- School zones
 - Residential streets
 - Work zones
 - Rural roads
 - 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 |



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

Oven-baked, white powder-coat finish to ensure durability and corrosion protection
 Color of the cabinet is white; the door is flat black for contrast around the perimeter of the electronic display
 Assemblies are run through a five-stage, high-pressure phosphate-wash prior to application of the finish coat

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 Color range Current Temperature limits
		AllInGaP II (aluminum indium gallium phosphide) technology, T-1¼ size, through-hole auto-insertion Amber, 589.5 to 592.0 nm 100 mA peak-pulsed forward current Operating temperature, -40 to 212°F (-40 to 100°C)
3.4.3.	Pixels	Description Display module Full matrix Pixel size Pixel pitch
		Two LEDs form a "pixel" 12 pixels wide by 10 high, 120 pixels total 24 pixels wide by 20 high, 480 pixels total 0.5" x 0.5" (12.7 x 12.7mm) 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 SYSTEM

- 4.1. Control box
- 4.1.1. Location Back of electronic speed display
- 4.1.2. Size 12.3" x 11.7" x 5.3" (31.2 x 29.7 x 14.4 cm) W x H x D
- 4.1.3. Material 0.08" aluminum
- 4.1.4. Door Front-panel is a door, hinged on the left, which opens fully
- 4.1.5. Latches Two quarter-turn latches on front of control box door keep hinged door closed. Both latches are keyed and can be locked.
- 4.1.6. Finish Control box and door are coated with oven-baked, equipment-white powder-coat finish to ensure durability and corrosion protection. Assemblies are run through a five-stage, high-pressure phosphate-wash prior to application of the finish coat.
- 4.1.7. Rating Weather-resistant, comparable to IP55

4.2. Control panel

4.2.1. 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

See “Options and Optional Equipment” for touchscreen controller

4.2.2. 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	<p>Used for ensuring matrix display is performing correctly</p> <p>Matrix display consecutively shows 1-, 2-, and 3-digit speeds, SLOW DOWN message, and frowning face symbol</p> <p>If installed, flashers are active during excessive-speed message</p> <p>Radar is off</p> <p>Data Collector is on (if installed)</p> <p>All other auxiliary devices are off</p> <p>Status display shows “[d]”</p> <p>Solar charging system is active</p>
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 (if installed)</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 (if installed)</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>Auxiliary devices are on</p> <p>Status display shows the system (AC or battery) voltage</p> <p>Solar charging system is active</p>

Status	System status mode Used for diagnostics and troubleshooting Speed Limit rotary switch selects sensor (voltage, current, temperature, etc.) Matrix display shows individual sensor readings with labels and extra decimals Radar is active Data Collector is on (if installed) All other auxiliary devices are off Status display shows sensor reading Solar charging system is active
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

- 4.2.3. Speed settings Choose speed limit with rotary switch:
 10 to 75 mph in increments of 5 mph (no 60 or 70 mph settings)
 20 to 130 km/h in increments of 10 km/h
 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.	Material	Aluminum sheet, 0.080" (2mm) thick, with high-intensity reflective coating
6.3.	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
6.4.	Size	24" x 30" (61 x 76cm), W x H See “Options and Optional Equipment” for sign options

7. TRAILER

7.1.	Frame	All welded structural steel
7.2.	Tie-downs	One tie-down loop centered at the front of the trailer frame One tie-down loop centered at rear of trailer frame
7.3.	Fenders	Round, full wheel coverage, bolted to trailer frame, removable and replaceable
7.4.	Finish	Frame is coated with oven-baked powder-coat finish to ensure durability and corrosion protection Color of the traffic model is safety orange; the law enforcement model is blue Assemblies are bead-blasted and then run through a five-stage, high-pressure phosphate-wash prior to application of the finish coat See “Options and Optional Equipment” for color options
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 ST205/75D13 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, bolted 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 clevis slip 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 pigtailed 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. Construction Two sections of square steel tubing with the inner section telescoping inside the outer section.

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. Finish Lower tower section and swivel base are coated with oven-baked powder-coat finish to ensure durability and corrosion protection

Color of the traffic model is safety orange; the law enforcement model is blue

Assemblies are run through a five-stage, high-pressure phosphate-wash prior to application of the finish coat

Upper tower section is zinc-plated for corrosion resistance

See "Options and Optional Equipment" for color options
- 7.14.5. 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.
- 7.14.6. 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 |
- 7.14.7. Rotation Tower rotates by hand, pivoting 90 degrees to face traffic or for storage and transport
- 7.14.8. 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

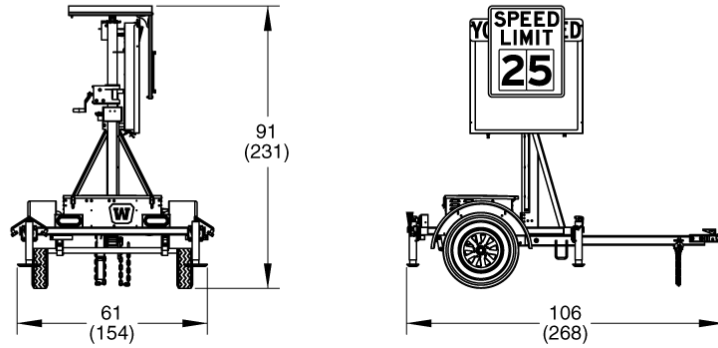
- 8.1. Description Batteries provide system power; batteries charged automatically with integrated solar-based charging system
- 8.2. Battery box
- 8.2.1. Function Holds batteries, remote charger, and spare numbers for speed limit sign
See “Options and Optional Equipment” for heavy-duty secure battery box
- 8.2.2. Construction Riveted all-steel construction, weather-resistant
All parts phosphate-washed and powder-coated before assembly
Battery box color of the traffic model is safety orange; battery box color of the law enforcement model is white
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

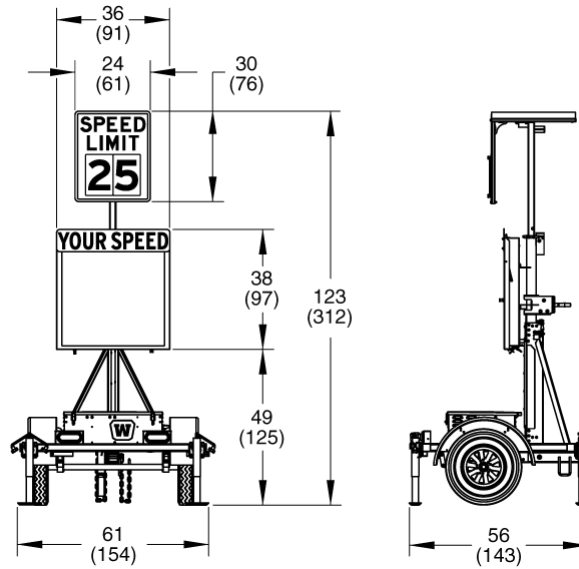
9. DIMENSIONS & WEIGHT

9.1. Dimensions *inches (cm)*

Travel position



Deployed



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

10. OPTIONS AND OPTIONAL EQUIPMENT

- 10.1. Controller** Touchscreen controller replaces standard control system
- 10.1.1. Touchscreen
- | | |
|-----------|---|
| Display | Full color, backlit, 7-inch display
Capacitive touch panel
800 x 480 pixels, W x H
Display automatically shuts off after 20 minutes of inactivity |
| Interface | Menu-based structure, accessed with virtual buttons on the touchscreen display, provides access to all sign functions including programming messages

Virtual keyboard appears when required for text entry

Multi-level password protection restricts access |
- 10.1.2. LED indicators Indicates the following status conditions:

Solar charging system is charging batteries
System power shutdown occurred
Programmed schedule is active
Power to optional radar device is on
- 10.1.3. Data port 1 USB port for local downloading of data from optional traffic data collector (if installed) and for system software updates

See below for Traffic Data Classifier System
- 10.2. Flashers** Two flashing LEDs lights, located in display cabinet below electronic speed display, flash alternately when vehicles exceed "extreme speed"
- | | |
|---------|---|
| Options | Red and blue flashing strobes
White flashing strobes |
|---------|---|
- 10.3. Regulatory sign** 30" x 36" speed limit sign replaces standard sign
- 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 coupler and standard lunette ring for pintle hook, 2½" ID x 1" cross-section
- 10.5.2. Lunette ring
- | | |
|---------|--|
| Options | Standard ring for pintle hook, 2½" ID x 1" cross-section
Heavy-duty ring for pintle hook, 3" ID x 1½" cross-section |
|---------|--|
- 10.6. Tow-vehicle plug** Many types of plugs available, prewired at the factory; contact factory for details

10.7. Power system

- 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
- Option 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 secure battery box, 400Ah total capacity
Three 4D AGM 12Vdc batteries in secure battery box, 600Ah 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, 130W, 170W, and 200W solar arrays; contact factory for details
- 10.7.5. 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
- 10.7.6. 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
- 10.8. Axle-lock bar Anti-theft axle-lock bar prevents wheels from turning. Requires user-supplied padlock.
- 10.9. Reflective tape Reflective red-and-white conspicuity tape across rear trailer frame for increased visibility
- 10.10. Finish color Specify power-coat color and, if applicable, color scheme

10.11. Traffic Data Classifier System

10.11.1.	Design	Employs side-fire radar for logging and classifying traffic data. Nonintrusive, does not require loops or hoses, no disturbance of traffic flow during installation or use.				
10.11.2.	Options	<table><tr><td>Standard</td><td>Includes data collector device installed on speed trailer, data analysis software application, and the following: Touchscreen controller Increased solar capacity to 130 watts Increased battery capacity with two 4D AGM 12Vdc batteries Large battery box 45-amp battery charger Local data download only</td></tr><tr><td>Premium</td><td>Includes all features of the standard option and adds the following: Increased solar capacity to 170 watts Heavy-duty secure battery box High-speed 4G LTE cellular modem with built-in GPS (requires cellular plan) Local and remote data download</td></tr></table>	Standard	Includes data collector device installed on speed trailer, data analysis software application, and the following: Touchscreen controller Increased solar capacity to 130 watts Increased battery capacity with two 4D AGM 12Vdc batteries Large battery box 45-amp battery charger Local data download only	Premium	Includes all features of the standard option and adds the following: Increased solar capacity to 170 watts Heavy-duty secure battery box High-speed 4G LTE cellular modem with built-in GPS (requires cellular plan) Local and remote data download
Standard	Includes data collector device installed on speed trailer, data analysis software application, and the following: Touchscreen controller Increased solar capacity to 130 watts Increased battery capacity with two 4D AGM 12Vdc batteries Large battery box 45-amp battery charger Local data download only					
Premium	Includes all features of the standard option and adds the following: Increased solar capacity to 170 watts Heavy-duty secure battery box High-speed 4G LTE cellular modem with built-in GPS (requires cellular plan) Local and remote data download					
10.11.3.	Direction	Registers both approaching and receding vehicles				
10.11.4.	Traffic lanes	Most effective for 2-lane roads				
10.11.5.	Traffic count	Can record data for more than 1 million vehicles in internal memory				
10.11.6.	Data format	Speed, date, time, direction, length for each vehicle				
10.11.7.	Units	Imperial or metric				
10.11.8.	Time stamp	Yr,Mo,Dy,Hr,Min,Sec.				
10.11.9.	Speed range	5 to 138 mph (8 to 222 km/h)				
10.11.10.	Sensor	Microwave K-band 24.125 GHz				
10.11.11.	Power	Uses radar-speed sign power supply				
10.11.12.	Power output	20 dbm (EIRP)				
10.11.13.	Current	110 mA				
10.11.14.	Temperature	Operating limits, -40 to 185 °F (-40 to 85 °C)				
10.11.15.	Internal memory	1MB (1,048,576 bytes)				
10.11.16.	Baud rate	9600, 8 bit, no parity				
10.11.17.	Installation	Mounted below electronic speed display in adjustable bracket				
10.11.18.	Analytic software	Wanco Traffic Analyzer				

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