



# Driver Feedback Signs



*Make roadways safer by reducing driving speeds*

**Hybrid pixel technology delivers optimal brightness and wide viewing angle for daytime and nighttime visibility**

**Speed data collection and evaluation capabilities**

**Tamper-resistant and environmentally rugged design**

## Description

The 3M™ Driver Feedback Sign alerts drivers about their vehicle speed in real-time. This encourages speed limit compliance to improve safety and protect pedestrians.

Sign technology takes advantage of three illumination sources to communicate to the driver:

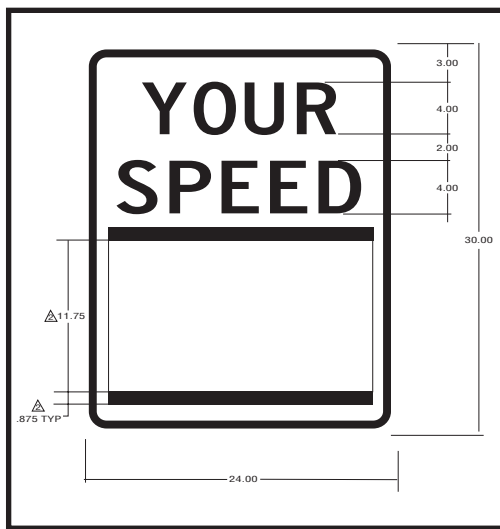
- Reflected ambient light during the day
- Reflected light from approaching headlights after dark
- Energy-smart LED (light emitting diode) illumination activated by photocell or programmed commands

Hybrid pixels combine LED technology with 3M™ Diamond Grade™ Fluorescent Yellow Green Reflective Sheeting to stand out against cluttered backgrounds. A built-in photocell automatically adjusts pixel brightness, turning them off in bright sunlight and dimming them to prevent blooming in darkness, extending LED life. LEDs flash when the radar detects a vehicle exceeding the speed limit.

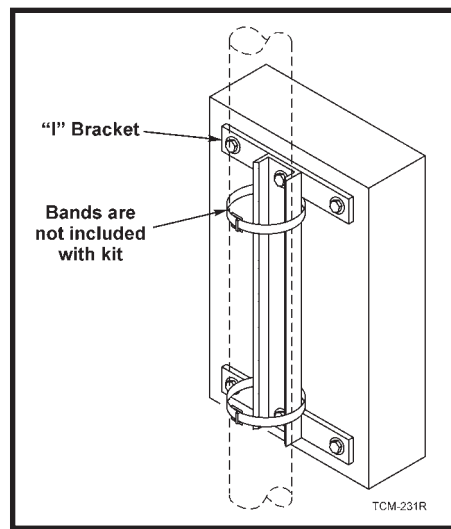
## Key System Features

- Two display sizes available: 24-inch by 30-inch for speeds <35 mph (<55 kmh) and 36-inch by 48-inch for speeds >35 mph (>55 kmh)
- Diamond Grade fluorescent reflective sheeting (ASTM Type IX)
- Displays real-time speed of oncoming vehicles and LEDs flash at violators – “Slow Now” text available on 24-inch by 30-inch signs
- Programmable maximum display speed
- Radar unit measures vehicle speeds on license-free K-band
- High-output, energy-smart InGaAIP LEDs
- Photocell control for minimal energy consumption
- AC or solar/battery power input options
- Rugged, modular design
- High-impact polycarbonate face with UV inhibitor
- Typically mounted on a single pole
- Vandal and tamper-resistant enclosure with anti-graffiti protection
- Program up to 12 months in advance – calendar will automatically renew every year for perpetual operation
- Multiple communication options
- Speed data collection and reporting software
- 90-day parts and on-site field labor warranty – extended warranties are available
- Meets MUTCD guidelines

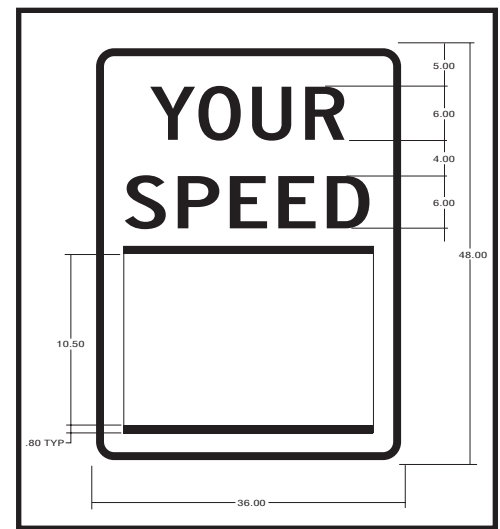
24-inch by 30-inch Display



“I” Bracket Standard with Solar Signs, Optional with AC



36-inch by 48-inch Display



For more information about how 3M can help you measure and increase roadway safety or for a 3M driver feedback sign demonstration, contact your 3M sales representative or 3M customer service at 1-800-553-1380, or visit our web site at [www.3M.com/tss](http://www.3M.com/tss).

<b>Specifications</b>	<b>24-inch by 30-inch Display</b>	<b>36-inch by 48-inch Display</b>
Applications	For posted speed limits <35 mph (<55 kmh)	For posted speed limits >35 mph (>55 kmh)
Hybrid pixel	Combines Diamond Grade fluorescent yellow green reflective sheeting (ASTM Type IX) and LED illumination	
LED (light emitting diode)	22 degrees; 590 nm, 1.4 Candela; one (1) InGaAIP LED per pixel	22 degrees; 590 nm, 1.4 Candela; four (4) InGaAIP LEDs per pixel
Speed display character size	12-inch (305 mm) high numeric display	18-inch (455 mm) high numeric display
Matrix configuration	One (1) module, 8 pixels high by 16 pixels wide	Two (2) modules, each 7 pixels high by 5 pixels wide
Pixel size	1.355-inch high by 1.080-inch wide (35 mm by 26 mm)	2.5-inch high by 2-inch wide (63 mm by 51 mm)
“YOUR SPEED” legend	Diamond Grade reflective sheeting, white with black lettering	
	4-inch high Series E letters	6-inch high Series E letters
Photocell-controlled brightness	Display dims at night to prevent “blooming” of speed display and shuts off during bright sunlight	
Cabinet dimensions	24-inch wide by 30-inch high by 4 5/8-inch deep (61 cm by 76 cm by 11.7 cm)	36-inch wide by 48-inch high by 7 1/8-inch deep (91 cm x 122 cm x 18.1 cm)
Construction	<ul style="list-style-type: none"> <li>• High-impact polycarbonate face with UV inhibitor; ten-year guarantee against pixel color fade; protects against face “yellowing”</li> <li>• Seamless aluminum housing with hinged access panel; modular construction</li> <li>• IP 55 (dust and water) protection to meet all expected environmental conditions</li> <li>• Anti-graffiti protection on sign front; tamper-resistant nuts</li> </ul>	
Weight	AC - 41 lbs. (18.6 kg) DC - 40 lbs. (18.1 kg)	AC - 84 lbs. (38.1 kg) DC - 83 lbs. (37.7 kg)
Operating temperature	Range: + 5 degrees F. to +140 degrees F. ambient (-15 degrees C. to +60 degrees C.) Humidity: 95% non-condensing. The cabinet is contained in a NEMA 3R rated cabinet and is environmentally sealed.	
Real-time display	Display updates once per second for dynamic feedback to the driver; display flashes when speed exceeds programmed limit by one mph or one kmh	
Violator alert	Flashing LEDs or “SLOW NOW”	Flashing LEDs
Programmable maximum display speed	Limit displayed speed to discourage drivers from racing against sign display	
Radar	<ul style="list-style-type: none"> <li>• Frequency: K-band (24.150 GHz <math>\pm</math> 100 MHz) license free, low power microwave radar accurate to within one mph</li> <li>• Beam angle: 12 degrees</li> <li>• Detection range: Approximately 500 to 600 feet (150+ meters)</li> <li>• RF-output power (EIRP): 20 dBm</li> </ul>	
Speed data collection software	Download speed data; create schedules and calendars; program sign for up to 12 months; manage up to 255 signs from one computer	
DFS Reporter	Excel™ software-based macro automatically formats speed and time data in chart form for evaluation	
Communication	<ul style="list-style-type: none"> <li>• Standard: RS232 data port permits local scheduling and downloading of speed data logs</li> <li>• Optional: RF-900 MHz Spread Spectrum Modem with Software allows the sign to be programmed and operated from a distance range of up to 1,500 feet with line-of-site antenna</li> </ul>	
Accessories	DFS CS: Configuration software for programming from a remote location DFS SCS: Software to remotely download stored speed data	
Power Requirements	<b>AC:</b> 85 – 264 VAC 47 – 440 Hz 0.7Amp max @ 120 (1A @ 85 VAC) 0.27A avg. @ 120 VAC  <b>DC 12V:</b> 30A start-up 10A changing display 0.965A average 12.2VDC required for start-up, operating range is 11.5 to 14.0 VDC  <b>DC 24V:</b> 20A start-up 5A changing display 0.380A average 24.4VDC required for start-up, operating range is 23.0 to 28.0 VDC	<b>AC:</b> 85 – 264 VAC 47 – 440 Hz 0.7Amp max @ 120 (1A @ 85 VAC) 0.27A avg. @ 120 VAC  <b>DC 12V:</b> 11A start-up 5A changing display 0.895A average 12.2VDC required for start-up, operating range is 11.5 to 14.0 VDC

Model Number	Sizes Available		Power				Control				
	24-inch by 30-inch Display	36-inch by 48-inch Display	Volts AC	24 Volt DC with Solar/ Battery	12 Volt DC with Solar/ Battery	24 Volt DC Capability	12 Volt DC Capability	Keyswitch Control	Relay/ Dry Timer	RF Modem	Local Serial Port
DFB-100	X	X	X					X			X
DFB-120	X	X	X						X		X
DFB-150	X	X	X							X	X
DFB-200	X			X				X			X
DFB-220	X			X					X		X
DFB-250	X			X						X	X
DFB-300		X			X			X			X
DFB-320		X			X				X		X
DFB-350		X			X					X	X
DFB-400	X					X		X			X
DFB-420	X					X			X		X
DFB-450	X					X				X	X
DFB-500	X	X					X	X			X
DFB-520	X	X					X		X		X
DFB-550	X	X					X			X	X

(Does Not Include Solar Panels or Batteries)

### 3M™ Driver Feedback Sign

#### Warranty Statement

3M warrants that 3M™ Driver Feedback Signs sold by 3M to be used as traffic safety and management devices in the United States and Canada will be free of defects in materials and workmanship for a period of 90 days from the date of shipment if installed by the customer or from the date of installation if installed by 3M, subject to the following provisions:

If a 3M driver feedback sign installed, operated and maintained in accordance with the manufacturer's instructions and recommendations (available upon request) is ineffective for its intended purpose due to defects in materials or workmanship, 3M's sole responsibility and purchaser's and user's exclusive remedy shall be 3M will furnish replacements for defective parts and provide on-site technical service. In the U.S., customer is to call 1-800-258-4610, and press option 5 for warranty claims. In Canada, customer is to call 1-800-265-1840, extension 6016 (technical service for driver feedback signs).

Failure must be solely the result of design or manufacturing defects in the 3M driver feedback sign and not of outside causes such as: accidents, vandalism, Acts of God, product modifications made by someone not authorized by 3M, failure of customer to follow 3M's published operating instructions, failure to follow 3M's published site selection and installation instructions, removal or relocation of the unit, electrical work external to the unit, virus/hacker activity, and external computer errors.

This warranty excludes batteries. Replacement parts will carry the unexpired warranty of the parts they replace. Claims made under this warranty will be honored only if 3M is notified of a failure within the warranty period, reasonable information requested by 3M is provided, and 3M is permitted to verify the cause of the failure. 3M may require the return of certain parts or assemblies upon receipt of replacements.

3M's liability under this warranty is limited to replacement parts as stated herein, and 3M assumes no liability for any incidental or consequential damages, in any way related to the product regardless of the legal theory on which the claim is based.

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM OR USAGE OF TRADE.



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10% Post-consumer waste paper

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