

Group U

Electronic Equipment (Police Dept.)

Honorable Mayor and City Council
City of Gulfport
P.O. Box 1780
Gulfport, MS 39502

Mayor and Council Members:

Pursuant to your advertisement, we do hereby submit this, our proposal for furnishing Electronic Equipment in accordance with the specifications listed below, for a period of twelve (12) months, reserving the right to request an extension of contract for a second term of twelve (12) months, which is as follows:

1. Federal Signal- Dynamax Siren Speaker with Mount (or equal)

SCOPE

This specification covers a speaker that is capable of reproducing voice and siren sounds from siren/public address amplifiers found in emergency and public safety vehicles.

GENERAL DESCRIPTION

This speaker shall be a diverging manifold type that is suitable for mobile use. It shall be weatherproof and capable of accepting 100 watts of input power.

CONSTRUCTION

The speaker shall be a square housing not exceeding 5.5" in height and/or 5.9" in width. The depth shall not exceed 2.3" so that the speaker can be installed behind the grille on most emergency response vehicles or on the bumper. The speaker shall not exceed 5.0 lbs.

The speaker housing shall be constructed of composite plastic consisting of 30% glass filled PET (polyethylene terephthalate) and shall be fully encapsulated with no exposed terminals.

The projector and driver shall be integrated into the housing and the projector shall be heat-synched. The speaker shall use neodymium magnetic material.

The speakers electrical leads shall be color coded and of sufficient length to allow connection to the siren amplifier.

The housing shall be designed to allow adequate drainage in the front and bottom of the unit.

The speaker shall comply with CCR, Title 13, Article 13, Class A and SAE J1849 EVS 3 specifications when matched with any Federal Signal 100W siren.

Impedance shall be 11 ohms. Vehicle specific, as well as generic speaker mounting brackets, are available for most commonly used public safety vehicles and accommodate the safe and proper mounting of the ES100C speaker at the time of installation.

WARRANTY

The warranty shall be two year parts and one year labor coverage.

PRODUCT REFERENCE

The speaker shall be manufactured in the USA, and be Federal Signal model ES100C.

Price- \$129.00 **ea.** **Item#-ES100C** _____

2. **Federal Signal PA300 Electronic Siren**

- Power 58/100/200 watt - the siren shall be capable of driving two (2) 100 watt drivers.
- Full-function siren - radio, wail, yelp, manual and hi-lo.
- The siren housing shall be of metal construction.
- Air horn sound.
- Built-in front panel microphone.
- Illuminated non-glare control panel.
- Meets class "A: requirements with only (1) 100 watt speaker.
- Tap II feature or equal.
- Dimensions: approximate Height: 2 1/4"; Width: 6"; Depth: 7 1/2";

Price- \$240.00 **ea.** **Item#-690000** _____

3. **Federal Signal- Data Control Cable- RS485- Cable Only**

- Shall consist of a 25 foot long interface cable assembly which connects the interface module and the control board within the data controlled light bars.

Price- \$80.00 **ea.** **Item#-Z1751357A-02**

4. **Federal Signal- Serial Interface Module-Data Control for Light bars**

- The serial interface module is the device used to communicate from the siren controller to the serial data controlled light bars. Each light bar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module links the RJ-style connection to the 24-conductor control link cable harness.

Price- \$175.00 **ea.** **Item# Z8583446E**

5. Federal Signal- Valor Light bar- 44", Two Color

This specification describes the minimum requirements for an emergency vehicle Visual Light System (VLS). System shall be designed to reduce risks to emergency personnel and the public. VLS shall include a vehicle roof mounted warning light and all necessary mounting and installation hardware.

PRIMARY WARNING

The roof mounted warning light shall be designed in a non-linear shape, so as to maximize emergency light warning at the 45-90 degree angles found at intersections. The non-linear design ultimately shall provide 360-degree lighting, eliminating weak spots and providing off-axis warning around the light bar. The light bar shall be a single-level LED light bar with ROC™ (Reliable On-Board Circuitry) and Solaris® LED technologies. Any light bar of linear design, using double or triple level light sources are not acceptable.

Reliable Onboard Circuitry (ROC™) technologies shall be utilized. ROC internal microprocessor shall supply three priority operational modes and a library of at least 27 flash patterns. To increase the safety of officers, pedestrians, and motorists, the light bar shall have standard front and rear cutoff, dimming, and intersection warning. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: CISPR 25 and SAE J845. No exceptions will be allowed.

Solaris® LED technologies shall be used as lighting source. Solaris LED modules shall use offset complex reflector surfaces for accurate beam-shaping and the highest optical efficiency. Bright white LED lighting source shall be standard for takedown and alley lights. Multicolor heads shall also be standard, eliminating the loss of primary warning colors in takedown, alley, directional warning positions. The non-linear bar design shall be utilized to provide maximum intersection warning, the most dangerous situation in moving traffic.

SERIAL INTERFACE

A CAT5 communications cable shall be the only connection made to light bar in addition to power and ground. All flash patterns shall be controlled through the light bar's CAT5 communication cable. The cable should connect to the Serial Interface Module allowing control via switch box. CAT5 communication cable may also be capable of connection to a Federal Signal Six-Button Serial Controller, Three-Button Serial Controller, or the SmartSiren Series Platinum System.

The light bar must be capable of being removed from the vehicle without disassembly of the vehicle interior components for ease of service or repair. The light bar should have a waterproof (IP67) external connector system for power and communication to allow removal of the light bar from the vehicle without opening the light bar. It should be protected against reverse polarity damage. The light bar shall be capable of being installed in any vehicle with a 12-volt NEGATIVE ground electrical system.

HOUSING

The solid aluminum extrusions shall be of a 1/8" nominal thickness design to provide strength and durability without excessive weight. The one-piece molded polycarbonate base shall be attached to the extrusions and the one-piece aluminum base plate forming a rigid base assembly. The base assembly shall incorporate carriage bolts in the extrusions' integrated mounting channels for attaching the mounting feet and the dome, which provides a well-secured mounting platform.

Both the light bar base and dome shall be one-piece molded polycarbonate for durability and strength. The dome shall be secured to the base assembly by means of barrel nuts fastened onto carriage bolts that ride in the extrusion's integrated mounting channel. Barrel nuts will incorporate O-rings, and base a multi-lip seal for a weatherproof seal. The dome shall be protected with galvanized steel cover plate, powder coated, to protect the light bar components from unforeseen impacts. The dome color shall be clear.

MOUNTING BRACKETS

A hook-on mounting bracket with stainless steel hardware must be included. For hook-on mounts, a vehicle specific hook kit shall be included.

The mounting feet are supplied attached to the light bar. Adjustable brackets are also provided in the hardware kit to accommodate various roof slopes. Adjustable brackets shall include a positive stop screw to prevent slippage.

ELECTRICAL

Light bar hookup shall require only power, ground, and a snap-in CAT5 communication cable to enter vehicle to minimize the diameter of holes made in the vehicle roof top.

Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:
(Both models listed, use specifications for desired model)

43.7 inch model:
12.0 A
14.0 A with HotFoot

51.3 inch model:
14.0 A
16.0 A with HotFoot

*Amperage for a typically loaded light bar with all lights flashing at 50 percent duty cycle

DIMENSIONS

The non-linear light bar shall have maximum dimensions as follows:
(Both models listed, use dimensions for desired model)

Dimensions For 43.7 inch model:
Length: 43.7 in (111.0 cm)
Height: 1.96 in (5.0 cm)
Width: 19.8 in (50.4 cm)
Weight: 39.3 lbs. (17.8 kg)

Dimensions For 51.3 inch model:
Length: 51.3 in (130.3 cm)
Height: 1.96 in (5.0 cm)
Width: 19.8 in (50.4 cm)
Weight: 43.2 lbs. (19.6 kg)

WARRANTY

The warranty period shall be three years parts replacement and one-year labor coverage. LED components shall be covered by five years parts replacement and one-year labor coverage.

PRODUCT REFERENCE

A complete system shall include the light bar, a vehicle specific hook kit, and a serial controlling device.

Price- \$1,864.00 ea. **Item#-VALR44-TBD**

6. Federal Signal- Valor Light bar- 51", Two Color

This specification describes the minimum requirements for an emergency vehicle Visual Light System (VLS). System shall be designed to reduce risks to emergency personnel and the public. VLS shall include a vehicle roof mounted warning light and all necessary mounting and installation hardware.

PRIMARY WARNING

The roof mounted warning light shall be designed in a non-linear shape, so as to maximize emergency light warning at the 45-90 degree angles found at intersections. The non-linear design ultimately shall provide 360-degree lighting, eliminating weak spots and providing off-axis warning around the light bar. The light bar shall be a single-level LED light bar with ROC™ (Reliable On-Board Circuitry) and Solaris® LED technologies. Any light bar of linear design, using double or triple level light sources are not acceptable.

Reliable Onboard Circuitry (ROC™) technologies shall be utilized. ROC internal microprocessor shall supply three priority operational modes and a library of at least 27 flash patterns. To increase the safety of officers, pedestrians, and motorists, the light bar shall have standard front and rear cutoff, dimming, and intersection warning. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: CISPR 25 and SAE J845. No exceptions will be allowed.

Solaris® LED technologies shall be used as lighting source. Solaris LED modules shall use offset complex reflector surfaces for accurate beam-shaping and the highest optical efficiency. Bright white LED lighting source shall be standard for takedown and alley lights. Multicolor heads shall also be standard, eliminating the loss of primary warning colors in takedown, alley, directional warning positions. The non-linear bar design shall be utilized to provide maximum intersection warning, the most dangerous situation in moving traffic.

SERIAL INTERFACE

A CAT5 communications cable shall be the only connection made to light bar in addition to power and ground. All flash patterns shall be controlled through the light bar's CAT5 communication cable. The cable should connect to the Serial Interface Module allowing control via switch box. CAT5 communication cable may also be capable of connection to a Federal Signal Six-Button Serial Controller, Three-Button Serial Controller, or the Smart Siren Series Platinum System.

The light bar must be capable of being removed from the vehicle without disassembly of the vehicle interior components for ease of service or repair. The light bar should have a waterproof (IP67) external connector system for power and communication to allow removal of the light bar from the vehicle

without opening the light bar. It should be protected against reverse polarity damage. The light bar shall be capable of being installed in any vehicle with a 12-volt NEGATIVE ground electrical system.

HOUSING

The solid aluminum extrusions shall be of a 1/8" nominal thickness design to provide strength and durability without excessive weight. The one-piece molded polycarbonate base shall be attached to the extrusions and the one-piece aluminum base plate forming a rigid base assembly. The base assembly shall incorporate carriage bolts in the extrusions' integrated mounting channels for attaching the mounting feet and the dome, which provides a well-secured mounting platform.

Both the light bar base and dome shall be one-piece molded polycarbonate for durability and strength. The dome shall be secured to the base assembly by means of barrel nuts fastened onto carriage bolts that ride in the extrusion's integrated mounting channel. Barrel nuts will incorporate O-rings, and base a multi-lip seal for a weatherproof seal. The dome shall be protected with galvanized steel cover plate, powder coated, to protect the light bar components from unforeseen impacts. The dome color shall be clear.

MOUNTING BRACKETS

A hook-on mounting bracket with stainless steel hardware must be included. For hook-on mounts, a vehicle specific hook kit shall be included.

The mounting feet are supplied attached to the light bar. Adjustable brackets are also provided in the hardware kit to accommodate various roof slopes. Adjustable brackets shall include a positive stop screw to prevent slippage.

ELECTRICAL

Light bar hookup shall require only power, ground, and a snap-in CAT5 communication cable to enter vehicle to minimize the diameter of holes made in the vehicle roof top.

Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:
(Both models listed, use specifications for desired model)

43.7 inch model:

12.0 A

14.0 A with HotFoot

51.3 inch model:

14.0 A

16.0 A with HotFoot

*Amperage for a typically loaded light bar with all lights flashing at 50 percent duty cycle

DIMENSIONS

The non-linear light bar shall have maximum dimensions as follows:
(Both models listed, use dimensions for desired model)

Dimensions For 43.7 inch model:

Length: 43.7 in (111.0 cm)
Height: 1.96 in (5.0 cm)
Width: 19.8 in (50.4 cm)
Weight: 39.3 lbs. (17.8 kg)

Dimensions For 51.3 inch model:

Length: 51.3 in (130.3 cm)
Height: 1.96 in (5.0 cm)
Width: 19.8 in (50.4 cm)
Weight: 43.2 lbs. (19.6 kg)

WARRANTY

The warranty period shall be three years parts replacement and one-year labor coverage. LED components shall be covered by five years parts replacement and one-year labor coverage.

PRODUCT REFERENCE

A complete system shall include the light bar, a vehicle specific hook kit, and a serial controlling device.

Price- \$1,995.00 ea. Item#-VALR51-TBD

7. Federal Signal- Integrity, 44", Two Color Light bar

The roof mounted warning light shall be designed in a linear shape, so as to maximize emergency light warning similar to those found at intersections. The design ultimately shall provided 360-degree lighting, eliminating weak spots and providing off-axis warning around the light bar. The light bar shall be a single-level LED light bar with ROC™ (Reliable On-Board Circuitry) and Solaris® LED technologies.

Reliable Onboard Circuitry (ROC™) technologies shall be utilized. ROC internal microprocessor shall supply three priority operational modes and a library of flash patterns. To increase the safety of officers, pedestrians, and motorists, the light bar shall have standard front and rear cutoff, dimming, and intersection warning. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: CISPR 25 and SAE J845. No exceptions will be allowed.

Solaris® LED technologies shall be used as lighting source. Solaris LED modules shall use offset complex reflector surfaces for accurate beam-shaping and the highest optical efficiency. Bright white LED lighting source shall be standard for takedown and alley lights. Multicolor heads shall also be standard, eliminating the loss of primary warning colors in takedown, alley, directional warning positions. The non-linear bar design shall be utilized to provide maximum intersection warning, the most dangerous situation in moving traffic.

SERIAL INTERFACE

A CAT5 communications cable shall be the only connection made to light bar in addition to power and ground. All flash patterns shall be controlled through the light bar's CAT5 communication cable. The cable should connect to the Serial Interface Module allowing control via switch box. CAT5 communication cable may also be capable of connection to a Federal Signal Six-Button Serial Controller, Three-Button Serial Controller, or the SmartSiren Series Platinum System.

The light bar must be capable of being removed from the vehicle without disassembly of the vehicle interior components for ease of service or repair. The light bar should have a waterproof (IP67) external connector system for power and communication to allow removal of the light bar from the vehicle without opening the light bar. It should be protected against reverse polarity damage. The light bar shall be capable of being installed in any vehicle with a 12-volt NEGATIVE ground electrical system.

MOUNTING BRACKETS

A hook-on mounting bracket with stainless steel hardware must be included. For hook-on mounts, a vehicle specific hook kit shall be included.

The mounting feet are supplied attached to the light bar. Adjustable brackets are also provided in the hardware kit to accommodate various roof slopes. Adjustable brackets shall include a positive stop screw to prevent slippage.

DIMENSIONS

44"

Length 43.7 in (111.0 cm)

Height* 1.96 in (5.0 cm)

Width 9.7 in (246.4 cm)

Weight* 21.5 lb (9.8 kg)

*Without mounting feet

LED Count

44" light bar

1. If all positions are single-color
 - a. Main bar: (20 heads x 6 LEDs each) + (2 corners x 9 LEDs each) = 138 LEDs
 - b. HotFoot: 4 heads x 6 LEDs each = 24 LEDs
 - c. Total for all single-color bar = 162 LEDs

2. If all positions are two-color = 324 LEDs

CURRENT DRAW

_ 44" light bar

o Approximately 1 Amp per head

1. 22 heads steady-on = 22 Amps
2. Entire main bar flashing at 50% duty cycle = 11 Amps
3. Plus 1 Amp per HotFoot light (4 lights = 4 Amps steady-on, 2 Amps when flashing at 50% duty cycle)

FEATURES/BENEFITS

- _ Manufactured in USA – University Park, IL
- _ Standard 5/1 warranty
- _ Same flash patterns as Valor
- _ Built in 8-head SignalMaster, TakeDowns, & Alleys
- _ Full Flood, including Left & Right scene option
- _ Dimming, Plus optional photo-sensor for “auto-dimming”
- _ 2 Cruise Modes: Entire bar or just end boards
- _ Left/Right “End-Cut-off” of 45/90 positions (can be programmed through Platinum software and triggered by door opening)
- _ Steady burn (CA Title 13) will be available in HotFoot or main bar
- _ Configurable through online configurator
- _ Programming through SS Platinum installation software
- _ Will use same reflectors as Valor, SpectraLux ILS, and CN SignalMaster product lines
- _ Will use same serial interface module as other light bars
- _ Will use same shipping carton as Legend light bar

Price- \$1,449.00 ea. **Item#-** INTG44-TBD

8. Federal Signal- Integrity, 51” Two Color Light bar

The roof mounted warning light shall be designed in a linear shape, so as to maximize emergency light warning similar to those found at intersections. The design ultimately shall provided 360-degree lighting, eliminating weak spots and providing off-axis warning around the light bar. The light bar shall be a single-level LED light bar with ROC™ (Reliable On-Board Circuitry) and Solaris® LED technologies.

Reliable Onboard Circuitry (ROC™) technologies shall be utilized. ROC internal microprocessor shall supply three priority operational modes and a library of flash patterns. To increase the safety of officers, pedestrians, and motorists, the light bar shall have standard front and rear cutoff, dimming, and intersection warning. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: CISPR 25 and SAE J845. No exceptions will be allowed.

Solaris® LED technologies shall be used as lighting source. Solaris LED modules shall use offset complex reflector surfaces for accurate beam-shaping and the highest optical efficiency. Bright white LED lighting source shall be standard for takedown and alley lights. Multicolor heads shall also be standard, eliminating the loss of primary warning colors in takedown, alley, directional warning positions. The non-linear bar design shall be utilized to provide maximum intersection warning, the most dangerous situation in moving traffic.

SERIAL INTERFACE

A CAT5 communications cable shall be the only connection made to light bar in addition to power and ground. All flash patterns shall be controlled through the light bar’s CAT5 communication cable. The cable should connect to the Serial Interface Module allowing control via switch box. CAT5 communication cable may also be capable of connection to a Federal Signal Six-Button Serial Controller, Three-Button Serial Controller, or the SmartSiren Series Platinum System.

The light bar must be capable of being removed from the vehicle without disassembly of the vehicle interior components for ease of service or repair. The light bar should have a waterproof (IP67) external connector system for power and communication to allow removal of the light bar from the vehicle without opening the light bar. It should be protected against reverse polarity damage. The light bar shall be capable of being installed in any vehicle with a 12-volt NEGATIVE ground electrical system.

MOUNTING BRACKETS

A hook-on mounting bracket with stainless steel hardware must be included. For hook-on mounts, a vehicle specific hook kit shall be included.

The mounting feet are supplied attached to the light bar. Adjustable brackets are also provided in the hardware kit to accommodate various roof slopes. Adjustable brackets shall include a positive stop screw to prevent slippage.

DIMENSIONS

51"

Length 51.3 in (130.3 cm)

Height 1.96 in (5.0 cm)

Width 9.7 in (246.4 cm)

Weight 24.5 lb (11.1 kg)

*Without mounting feet

LED Count

51" light bar

1. If all positions are single-color
 - a. Main bar: (24 heads x 6 LEDs each) + (2 corners x 9 LEDs each) = 162 LEDs
 - b. HotFoot: 4 heads x 6 LEDs each = 24 LEDs
 - c. Total Possible = 186 LEDs
2. If all positions are two-color = 372 LEDs
3. If all positions are three-color except L/L1 are 2-color = 540

CURRENT DRAW

51" light bar

Approximately 1 Amp per head

1. 26 heads steady-on = 26 Amps
2. Entire main bar flashing at 50% duty cycle = 13 Amps
3. Plus 1 Amp per HotFoot light (4 lights = 4 Amps steady-on, 2 Amps when flashing at 50% duty cycle)

FEATURES/BENEFITS

- _ Manufactured in USA – University Park, IL
- _ Standard 5/1 warranty
- _ Same flash patterns as Valor
- _ Built in 8-head Signal Master, Takedowns, & Alleys
- _ Full Flood, including Left & Right scene option
- _ Dimming, Plus optional photo-sensor for “auto-dimming”
- _ 2 Cruise Modes: Entire bar or just end boards

- _ Left/Right "End-Cut-off" of 45/90 positions (can be programmed through Platinum software and triggered by door opening)
- _ Steady burn (CA Title 13) will be available in HotFoot or main bar
- _ Configurable through online configurator
- _ Programming through SS Platinum installation software
- _ Will use same reflectors as Valor, SpectraLux ILS, and CN SignalMaster product lines
- _ Will use same serial interface module as other light bars
- _ Will use same shipping carton as Legend light bar

Price- \$1,595.00 **ea.** **Item#-** INTG51-TBD

9. Federal Signal- Model SSP2000B/ SSP2000B-200 - Electronic siren/light control

GENERAL

The Smart Siren Platinum SSP2000B or SSP2000B-200 is a full featured, programmable electronic siren and light control system. The system shall consist of a control head and siren amplifier/relay module utilizing Federal Signal's Convergence Network. Communication between the control head and the amplifier unit is accomplished thru a 25' RS485 serial cable. The 'intelligence' of the system is contained in the control head and all system functions are controlled by the control head. System shall include a microphone and all necessary connections to the amplifier.

REMOTE SIREN AMPLIFIER

Amplifier unit shall be (case dimensions) 4.4" in height by 7.6" in width and 7.9" in depth.

Amplifier shall consist of an easily accessible external volume adjustment for radio rebroadcast and public address which includes visual confirmation that power is being supplied to the unit.

Amplifier shall consist of two rugged power terminals easily identified by black and red colored insulator covers.

Eleven (11) solid-state auxiliary relay outputs shall be provided for non-serial controlled lightbars, perimeter lights, and accessories. One- 10A high/low, six- 10A high relays and four- 2A high relays shall correspond to each individually fused auxiliary output.

Amplifier shall consist of a control system that illuminates auxiliary outputs to clearly indicate the status of individual lights, sirens and other auxiliary equipment.

Separate control head allows the amplifier unit to be remotely mounted.

Amplifier shall consist of four active – low circuit inputs. Cable assembly P/N 17500063 shall be provided and install between the control head and the configurable steering wheel switches thru the Ford Police Interceptor's fourteen way connector, for example. Additional uses are trunk/door release, gun lock, intrusion alarms and monitoring K9 temperature systems. Amplifier shall consist of six "Plug and Play" serial ports to be used for Federal Signal's unique Convergence network with one connection to the control head.

Amplifier's external housing provides easy access to all auxiliary outputs and inputs, speakers, park disable, radio rebroadcast input and horn ring transfer utilizing secure locking connectors.

The SSP2000B/SSP2000B-200 amplifier/relay module shall produce wail, yelp, priority, and hi-lo siren tones, as well as an air horn tone. Siren tones shall be compliant with standards SAE J1849 JUL89. Additional features shall include horn ring transfer, public address, and radio rebroadcast.

The SSP2000B shall drive one 11-ohm impedance, 100 watt speakers. The SSP2000B-200 shall be capable of driving two, 11 ohm impedance, 100 watt speakers.

Operating temperature range is -30 degrees to +65 degrees Celsius. (relays at full power -30C to 80C, relay power at 60% capacity).

CONTROL HEAD

Control head shall be (case dimensions) 3.2" in height, by 6.8" in width and 1.6" in depth. The control head is the intelligence of the Convergence Network with seventeen (17) tactile push buttons and a four position progressive slide switch.

The control head shall have the capability of interchangeable custom legends for designating functions. A sheet of applicable function legends is supplied.

The control head shall have PA and Radio adjustments located on the back.

The SSP2000B or SSP2000B-200 shall include a MNCT microphone (P/N 258B577-03) that locks in place connecting directly to the back of the control head.

The control head includes a visual reference emulating selected patterns of the SignalMaster arrow directional operations.

The control head is capable of providing an audible signal when an auxiliary or slide switch position is activated. Notification beep shall be factory set at ten seconds. Control head shall be capable of decreasing the levels of brightness of any of the seventeen buttons.

Control head slide switch shall provide 10A in slide switch positions 1 and 2, and 20A in slide switch position 3.

SIGNALMASTER

SSP2000B or SSP2000B-200 SignalMaster controller shall operate six or eight (default) lamp arrow directional devices. Button #14 shall control all arrow functions, LRCO (left/right/center-out).

SSP2000B or SSP2000B-200 SignalMaster controller provides four SAE directional arrow patterns and ten non-SAE warning patterns. Button #15 shall control the step- thru warning patterns. Fast and low power modes shall be available.

ELECTRICAL

The unit shall be designed for negative ground vehicles. Normal operating voltage shall be 11.0 to 16.0 VDC.

Power can be controlled through the positive (12volt DC +) ignition input.

Volume control for radio rebroadcast and PA is located on the amplifier and on the back of the control head.

The control unit shall be backlit with LED indicators.

PROGRAMMING FORMAT

The Smart Siren Platinum SSP2000B or SSP2000B-200 Configuration Software is a Microsoft Windows-based application that enables the programming of the control head and amplifier to operate the warning devices installed in the emergency vehicle.

The control head serves as the command center, and the SSP2000B or SSP2000B-200 Siren Amplifier/Relay Module acts as the communications hub of the Convergence Network. Using solid-state relays and LEDs that glow to indicate signal transmission between circuits, the siren amplifier coordinates the operation and communication of all devices on the network according to the configuration file created using the Configuration Software.

SSP2000B or SSP2000B-200 is contained within an integrated workspace. The four programming modules are:

- a. Button Configuration Module
- b. Button Selection Module
- c. Device Selection Module
- d. Button Control Module

The internal solid state relays connect to pins on the back of the SSP2000B or SSP2000B-200 siren amplifier. The six 10-ampere relays can be configured as active high (pulled to 12 VDC battery voltage) only. One 10-ampere relay can be configured as active high (pulled to 12 VDC battery voltage or active low (pulled to ground). The four 2-ampere solid-state relays are active high only. These internal relays are commonly used for non-serial controlled devices or flashing lights.

WARRANTY

Warranty shall be three years parts and one year labor coverage.

PRODUCT REFERENCE

The siren shall be a Federal Signal Corporation Model SSP2000B or SSP2000B-200 - Smart Siren Platinum. SSP2000B is discontinued. Replaced with PathFinder - New part number PF200S17

Price- \$749.00 **ea.** **Item#-** ~~SSP2000B~~ ~~or~~ ~~SSP2000B-200~~ Item #PF200S17

10. Federal Signal- Model RMK - Electronic siren/light control- Microphone only

- o Includes only microphone and extension cord to fit the SS2000SM-SD or SS2000SS-D sirens.

Price- \$90.00 **ea.** **Item#-** RMK

11. Federal Signal- MicroPulse-3 ULTRA Perimeter Warning Lights

- Input Voltage Range: 12-24 VDC
- Number of LEDs – 3
- Super Slim design to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface, Hood/Grille mount models
- Three-year LED warranty

Price- \$47.00 **ea.** **Item#-** **MPS300U-any color**

12. Federal Signal- MicroPulse-6 Perimeter Warning Lights

- Input Voltage Range: 12-24 VDC
- Number of LEDs – 6
- Super Slim design to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface, Hood/Grille mount models
- Three-year LED warranty

Price- \$78.00 **ea.** **Item#-** MPS600 or MPS650-any color

12-A. Federal Signal- MicroPulse-6 ULTRA Perimeter Warning Lights

- Input Voltage Range: 12-24 VDC
- Number of LEDs – 6
- Super Slim design to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface/Grille mount models
- Split color or dual color models available
- Three-year LED warranty

Price- \$78.00 **ea.** **Item#-** **MPS600U-color/color or MPS620U-color/color**

13. Federal Signal- ~~Impaxx~~ 3 Perimeter Warning Lights

Discontinued replaced with MPS31U

- Input Voltage Range: 12-VDC
- Fully Encapsulated waterproof housing
- Number of LEDs - 3
- Wide angle or center focus lenses available
- Variety of synchronized patterns

Price- \$47.00 **ea.** **Item#-** ~~IPX300 any color~~ Item #MPS31U

14. Federal Signal- ~~IPX6~~ IPX6 Perimeter Warning Lights- Single or dual color

Discontinued equivalent MPS62U

- Input Voltage Range: 12-VDC
- SpectraLux multicolor LED technology
- Fully Encapsulated waterproof housing
- Number of LEDs – 6,12 or 18 LED versions available
- Vertical or horizontal mount models
- Variety of synchronized patterns
-

Price- \$78.00 **ea.** **Item#- ~~IPX600 or IPX620B~~ any color** Item #MPS62U

15. 650 Series Siren Remote Microphone-Controlled Siren

- Microphone controlled siren amplifier and light functions
- Progressive 3-position “slide switch like” push button control
- Backlit/rubberized microphone control head
- Microprocessor based amplifier with plug-and-play connections
- Eight – 10Amp light and aux relay positions
- 100-Watt output – Wail, priority, air horn, manual peak and hold tones
- Versatile microphone and amplifier mounting brackets
- Remote on/off switch box with built-in PA volume control
- Horn ring transfer and Radio Re-Broadcast Repeat (RRB)

Price- \$330.00 **ea.** **Item#- 650003 or 650001**

16. Federal Signal- ~~45” Legend light bar package~~ Legend and Smart Siren discontinued. Replace with ALG45/PF200S17 (Including Light bar, mounting equipment, Federal ~~SSP2000B/SSP2000B-200~~ Federal Dynamax siren speaker with mount)

- **Light bar: 45” Legend** - The light bar shall have maximum dimensions of 2.5” in height, 11.2” in width, 44.5” in overall length, and weigh 20.4 pounds.
- Light emitting diode (LED) light heads shall consist of Solaris S2 reflector modules utilizing high output LED technology. Each Solaris S2 module shall use a compound-curve and polished reflector design and shall contain three or six diodes. Solaris S2 reflector modules shall be available in red, blue, white, green and amber LEDs. A total of 14 Solaris S2 modules shall be included. The minimum total number of Gen 3 lamp diodes shall be 96.
- Reliable onboard circuitry technologies shall be utilized. Legend light bar design shall utilize surface mounted LEDs projecting downward into the Solaris S2 reflector assemblies. ROC technology shall use microprocessor controls to provide a total of twenty-six user-selectable flash patterns, including an intersection mode, two test patterns and a low power ‘dim’ mode. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: SAE 1113/41 RFI and SAE J845.
- The Legend light bar shall function with three prioritized modes of operation. Mode 3 shall be the highest priority and shall override both Mode 2 and Mode 1.

Mode 2 shall override Mode 1. Each of the three modes will provide preset (default) flash patterns that can be activated for various stages of the emergency vehicle's warning light levels of operation. A total of twenty-six flash patterns are available for mode selections.

- A minimum of one pair of internally mounted alley lights shall be installed at the ends of the light bar. Each alley light shall use a SAE compliant 35-watt halogen MR-11 lamp or an LED lamp. Each alley light must be adjustable ± 10 degrees on a horizontal plane. Each of the three adjustment locations shall be secured upon making the final adjustment with a positive locking device built into the assembly of the alley light - no exception. Each alley light fixture must be vertically adjustable +2 degrees to +5 degrees on a vertical plane. A flashing feature is included for alley light pairs.
- A minimum of one pair of internally mounted takedown lights shall be installed and face forward. Takedown lights may use either 50-watt halogen bi-pin lamps or white LEDs.
- Takedown option: One pair of takedown lights shall be installed and face forward. Each takedown light fixture must have at least 7.1 square inches of polished reflective surface area. Each takedown light shall and use a SAE compliant 50-watt halogen GH-8 style Bi-pin lamp or an LED lamp, no exceptions. This will ensure proper officer/user safety by projecting the brightest and most direct focused clear-white light source available. Each takedown light must be adjustable ± 8 degrees on a horizontal plane. Each adjustment location shall be secured upon making the final adjustment with a positive locking device built into the assembly of the takedown light - no exception. Each takedown light fixture must be adjustable +2 degrees to +5 degrees on a vertical plane - no exceptions. A flashing feature is included for takedown light pairs.
- Intersection flash mode of operation: The light bar shall provide a high activity pattern that attracts attention to the vehicle as it approaches an intersection. Intersection operation shall be able to be controlled by three selected options including Power On-Off function, TAPII (push-on/push-off) by using a momentary contact switch or horn ring button or 8-second timer activation.
- Front/Rear Cutoff or Enable function: The light bar shall be able to provide a front/rear cutoff and front/rear enable function. Front/rear cutoff is controlled by applying 12 VDC to supplied controlled wires. Front/rear enable activates the LED modules when +Bat is applied to their control wires. This function allows the light bar to be custom programmed to meet a wide range of departmental needs and installed light controls.
- The Legend light bar shall be able to operate in the low power mode if desired. The light bar shall be capable of dimming the main bar LEDs approximately 50% to prevent blinding of approaching vehicles. The low power function shall only operate in Mode 1 or Mode 2 levels. It is disabled when the light bar is turned off or switched to another flash pattern, including Mode 3 or the intersection mode level. Light bars that dim in level 3 or during the pursuit mode shall not be accepted.
- The solid aluminum extrusion shall be of a 1/8" minimum thickness design to provide strength and durability without excessive weight. The mounting feet and bases for light mechanisms attach directly to the extrusion's integrated mounting channel which provides a well-secured mounting platform.

- The light bar housings shall be molded polycarbonate for durability and strength. Both domes shall be secured to the extruded aluminum frame by use of four barrel nut and bolt assemblies. A lip seal gasket shall be around all external perimeters to provide a weatherproof seal. The upper level domes must incorporate a honeycomb-molded design to maximize strength and reinforcement for the internal light bar components from hail and unforeseen impact. The lower level domes shall be clear.
- The serial interface module is the device used to communicate with the Legend light bar. Each light bar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module shall be included (FS model #Z8583446) that transitions from the RJ-style connection to the 24-conductor control link cable harness. Light bar hook-up shall require only a 10-ga power cable, a 10-ga ground cable, and a 25' snap-in CAT 5 communication cable. Both the 10-ga power and the 10-ga ground cables shall measure twenty-one feet in length – no exceptions.
- The light bar shall be capable of being removed from the vehicle without disassembly of the vehicle's emergency light controller's wiring system for ease of service or repair.
- A six-lamp LED Signal Master traffic management device shall be built into the light bar and standard for the Legend. Light heads shall consist of six Solaris S2 reflector modules.
- A hook-on mounting bracket with stainless steel hardware must be included and be compatible for vehicles with or without rain gutters. Mounting legs may be adjusted by the installer to meet a variety of roof width requirements of the specified vehicle. Three pair of rubber mounting pads shall be included and vary in height: short, medium, and tall. Mounting pads can be installed to determine the overall height of the light bar off the roof of the vehicle and can compensate for various roof pitches and slope angle adjustments.
- Three light bar programming mode options: The light bar shall be able to support three user selectable programming modes. The light bar can be programmed on the vehicle or outside the vehicle (i.e., bench). It can also be programmed with an optional ROC interface cloning kit (ROCPR1) which uses the installed vehicle light control and cloning flash patterns from an existing light bar.
- Fuse Protection: The light bar shall provide multi levels of electrical connection protection for the vehicle and light bar. The first level of light bar protection shall have a 40A max fuse protection on 10 Ga positive lead going to the light bar. The light bar controller shall have six fuses ranging from 5A to 20A to prevent possible damage to the light bar or vehicle.
- LED light heads must meet the approval of the following specifications: SAE 1113/41 RFI, SAE J845 and FCC Part 15.
 - Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:

• Solaris S2 LED takedown light	1.0 A*
• 50-Watt halogen takedown light	3.9 A*
• 35-Watt halogen alley light	2.7 A*
• Solaris S2 4" and 5" flashing positions	1.0 A*
• Solaris S2 2" flashing positions	0.5 A*

*** Amperage in steady burn mode**

- The LED Solaris module system shall incorporate a unique suppression circuit design that greatly minimizes RFI noise (Radio Frequency Interference) associated with LED technology. RFI can greatly reduce public safety two-way radio reception sensitivity and interfere with vehicular laptop computer performance operation.
- **Smart Siren: Federal Model SSP2000B/SSP2000B-200 - Electronic siren/light control.**

GENERAL

- The Smart Siren Platinum SSP2000B or SSP2000B-200 is a full featured, programmable electronic siren and light control system. The system shall consist of a control head and siren amplifier/relay module utilizing Federal Signal's Convergence Network. Communication between the control head and the amplifier unit is accomplished thru a 25' RS485 serial cable. The 'intelligence' of the system is contained in the control head and all system functions are controlled by the control head. System shall include a microphone and all necessary connections to the amplifier.

REMOTE SIREN AMPLIFIER

- Amplifier unit shall be (case dimensions) 4.4" in height by 7.6" in width and 7.9" in depth.
- Amplifier shall consist of an easily accessible external volume adjustment for radio rebroadcast and public address which includes visual confirmation that power is being supplied to the unit.
- Amplifier shall consist of two rugged power terminals easily identified by black and red colored insulator covers.
- Eleven (11) solid-state auxiliary relay outputs shall be provided for non-serial controlled lightbars, perimeter lights, and accessories. One- 10A high/low, six- 10A high relays and four- 2A high relays shall correspond to each individually fused auxiliary output.
- Amplifier shall consist of a control system that illuminates auxiliary outputs to clearly indicate the status of individual lights, sirens and other auxiliary equipment.
- Separate control head allows the amplifier unit to be remotely mounted.
- Amplifier shall consist of four active – low circuit inputs. Cable assembly P/N 17500063 shall be provided and install between the control head and the configurable steering wheel switches thru the Ford Police Interceptor's fourteen way connector, for example. Additional uses are trunk/door release, gun lock, intrusion alarms and monitoring K9 temperature systems.
- Amplifier shall consist of six "Plug and Play" serial ports to be used for Federal Signal's unique Convergence network with one connection to the control head.

- Amplifier's external housing provides easy access to all auxiliary outputs and inputs, speakers, park disable, radio rebroadcast input and horn ring transfer utilizing secure locking connectors.
- The SSP2000B/SSP2000B-200 amplifier/relay module shall produce wail, yelp, priority, and hi-lo siren tones, as well as an air horn tone. Siren tones shall be compliant with standards SAE J1849 JUL89. Additional features shall include horn ring transfer, public address, and radio rebroadcast.
- The SSP2000B shall drive one 11-ohm impedance, 100 watt speakers. The SSP2000B-200 shall be capable of driving two, 11 ohm impedance, 100 watt speakers.
- Operating temperature range is -30 degrees to +65 degrees Celsius. (relays at full power - 30C to 80C, relay power at 60% capacity).

CONTROL HEAD

- Control head shall be (case dimensions) 3.2" in height, by 6.8" in width and 1.6" in depth. The control head is the intelligence of the Convergence Network with seventeen (17) tactile push buttons and a four position progressive slide switch.
- The control head shall have the capability of interchangeable custom legends for designating functions. A sheet of applicable function legends is supplied.
- The control head shall have PA and Radio adjustments located on the back.
- The SSP2000B or SSP2000B-200 shall include a MNCT microphone (P/N 258B577-03) that locks in place connecting directly to the back of the control head.
- The control head includes a visual reference emulating selected patterns of the SignalMaster arrow directional operations.
- The control head is capable of providing an audible signal when an auxiliary or slide switch position is activated. Notification beep shall be factory set at ten seconds. Control head shall be capable of decreasing the levels of brightness of any of the seventeen buttons.
- Control head slide switch shall provide 10A in slide switch positions 1 and 2, and 20A in slide switch position 3.

SIGNALMASTER

- SSP2000B or SSP2000B-200 SignalMaster controller shall operate six or eight (default) lamp arrow directional devices. Button #14 shall control all arrow functions, LRCO (left/right/center-out).
- SSP2000B or SSP2000B-200 SignalMaster controller provides four SAE directional arrow patterns and ten non-SAE warning patterns. Button #15 shall control the step- thru warning patterns. Fast and low power modes shall be available.

ELECTRICAL

- The unit shall be designed for negative ground vehicles. Normal operating voltage shall be 11.0 to 16.0 VDC.
- Power can be controlled through the positive (12volt DC +) ignition input.
- Volume control for radio rebroadcast and PA is located on the amplifier and on the back of the control head.
- The control unit shall be backlit with LED indicators.

PROGRAMMING FORMAT

- The Smart Siren Platinum SSP2000B or SSP2000B-200 Configuration Software is a Microsoft Windows-based application that enables the programming of the control head and amplifier to operate the warning devices installed in the emergency vehicle.
- The control head serves as the command center, and the SSP2000B or SSP2000B-200 Siren Amplifier/Relay Module acts as the communications hub of the Convergence Network. Using solid-state relays and LEDs that glow to indicate signal transmission between circuits, the siren amplifier coordinates the operation and communication of all devices on the network according to the configuration file created using the Configuration Software.
- SSP2000B or SSP2000B-200 is contained within an integrated workspace. The four programming modules are:
 - a. Button Configuration Module
 - b. Button Selection Module
 - c. Device Selection Module
 - d. Button Control Module
- The internal solid state relays connect to pins on the back of the SSP2000B or SSP2000B-200 siren amplifier. The six 10-ampere relays can be configured as active high (pulled to 12 VDC battery voltage) only. One 10- ampere relay can be configured as active high(pulled to 12 VDC battery voltage or active low (pulled to ground). The four 2-ampere solid-state relays are active high only. These internal relays are commonly used for non-serial controlled devices or flashing lights.

WARRANTY

- Warranty shall be three years parts and one year labor coverage.

PRODUCT REFERENCE

- The siren shall be a Federal Signal Corporation Model SSP2000B or SSP2000B-200 - Smart Siren Platinum.
- **Siren Speaker: Federal Dynamax Siren Speaker with Mount**
- 100 watt compact style class a speaker.
- Dimensions approximate 6"W x 6"H x 2.5"D.
- Weight 5 lbs.
- With mounting hardware

Legend and Smart Siren discontinued. Replace with ALG45/PF200S17

Price- \$1,978.00 **ea.** **Item#- ~~ALG45Z-PKG~~** _____ **Item #**ALG45/PF200S17-PKG

17. Federal Signal-53" Legend light bar package (Including Light bar, mounting equipment, Federal SSP2000B/SSP2000B-200, Federal Dynamax siren speaker with mount) Legend and Smart Siren discontinued. Replace with ALG53/PF200S17

- **Light bar: 53" Legend** - The light bar shall have maximum dimensions of 2.5" in height, 11.2" in width, 52.7" in overall length, and weigh 24.2 pounds.
- Light emitting diode (LED) light heads shall consist of Solaris S2 reflector modules utilizing high output LED technology. Each Solaris S2 module shall use a compound-curve and polished reflector design and shall contain three or six diodes. Solaris S2 reflector modules shall be available in red, blue, white, green and amber LEDs. A total of 18 Solaris S2 modules shall be included. The minimum total number of Gen 3 lamp diodes shall be 120.
- Reliable onboard circuitry technologies shall be utilized. Legend light bar design shall utilize surface mounted LEDs projecting downward into the Solaris S2 reflector assemblies. ROC technology shall use microprocessor controls to provide a total of twenty-six user-selectable flash patterns, including an intersection mode, two test patterns and a low power 'dim' mode. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: SAE 1113/41 RFI and SAE J845.
- The Legend light bar shall function with three prioritized modes of operation. Mode 3 shall be the highest priority and shall override both Mode 2 and Mode 1. Mode 2 shall override Mode 1. Each of the three modes will provide preset (default) flash patterns that can be activated for various stages of the emergency vehicle's warning light levels of operation. A total of twenty-six flash patterns are available for mode selections.
- A minimum of one pair of internally mounted alley lights shall be installed at the ends of the light bar. Each alley light shall use a SAE compliant 35-watt halogen MR-11 lamp or an LED lamp. Each alley light must be adjustable ± 10 degrees on a horizontal plane. Each of the three adjustment locations shall be secured upon making the final adjustment with a positive locking device built into the assembly of the alley light - no exception. Each alley light fixture must be vertically adjustable +2 degrees to +5 degrees on a vertical plane. A flashing feature is included for alley light pairs.
- A minimum of one pair of internally mounted takedown lights shall be installed and face forward. Takedown lights may use either 50-watt halogen bi-pin lamps or white LEDs.
- Takedown option: One pair of takedown lights shall be installed and face forward. Each takedown light fixture must have at least 7.1 square inches of polished reflective surface area. Each takedown light shall and use a SAE compliant 50-watt halogen GH-8 style Bi-pin lamp or an LED lamp, no exceptions. This will ensure proper officer/user safety by projecting the brightest and most direct focused clear-white light source available. Each takedown light

must be adjustable ± 8 degrees on a horizontal plane. Each adjustment location shall be secured upon making the final adjustment with a positive locking device built into the assembly of the takedown light - no exception. Each takedown light fixture must be adjustable +2 degrees to +5 degrees on a vertical plane - no exceptions. A flashing feature is included for takedown light pairs.

- Intersection flash mode of operation: The light bar shall provide a high activity pattern that attracts attention to the vehicle as it approaches an intersection. Intersection operation shall be able to be controlled by three selected options including Power On-Off function, TAPII (push-on/push-off) by using a momentary contact switch or horn ring button or 8-second timer activation.
- Front/Rear Cutoff or Enable function: The light bar shall be able to provide a front/rear cutoff and front/rear enable function. Front/rear cutoff is controlled by applying 12 VDC to supplied controlled wires. Front/rear enable activates the LED modules when +Bat is applied to their control wires. This function allows the light bar to be custom programmed to meet a wide range of departmental needs and installed light controls.
- The Legend light bar shall be able to operate in the low power mode if desired. The light bar shall be capable of dimming the main bar LEDs approximately 50% to prevent blinding of approaching vehicles. The low power function shall only operate in Mode 1 or Mode 2 levels. It is disabled when the light bar is turned off or switched to another flash pattern, including Mode 3 or the intersection mode level. Light bars that dim in level 3 or during the pursuit mode shall not be accepted.
- The solid aluminum extrusion shall be of a 1/8" minimum thickness design to provide strength and durability without excessive weight. The mounting feet and bases for light mechanisms attach directly to the extrusion's integrated mounting channel which provides a well-secured mounting platform.
- The light bar housings shall be molded polycarbonate for durability and strength. Both domes shall be secured to the extruded aluminum frame by use of four barrel nut and bolt assemblies. A lip seal gasket shall be around all external perimeters to provide a weatherproof seal. The upper level domes must incorporate a honeycomb-molded design to maximize strength and reinforcement for the internal light bar components from hail and unforeseen impact. The lower level domes shall be clear.
- The serial interface module is the device used to communicate with the Legend light bar. Each light bar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module shall be included (FS model #Z8583446) that transitions from the RJ-style connection to the 24-conductor control link cable harness. Light bar hook-up shall require only a 10-ga power cable, a 10-ga ground cable, and a 25' snap-in CAT 5 communication cable. Both the 10-ga power and the 10-ga ground cables shall measure twenty-one feet in length – no exceptions.
- The light bar shall be capable of being removed from the vehicle without disassembly of the vehicle's emergency light controller's wiring system for ease of service or repair.
- A six-lamp LED Signal Master traffic management device shall be built into the light bar and standard for the Legend. Light heads shall consist of six Solaris S2 reflector modules.

- A hook-on mounting bracket with stainless steel hardware must be included and be compatible for vehicles with or without rain gutters. Mounting legs may be adjusted by the installer to meet a variety of roof width requirements of the specified vehicle. Three pair of rubber mounting pads shall be included and vary in height: short, medium, and tall. Mounting pads can be installed to determine the overall height of the light bar off the roof of the vehicle and can compensate for various roof pitches and slope angle adjustments.
- Three light bar programming mode options: The light bar shall be able to support three user selectable programming modes. The light bar can be programmed on the vehicle or outside the vehicle (i.e., bench). It can also be programmed with an optional ROC interface cloning kit (ROCPRI) which uses the installed vehicle light control and cloning flash patterns from an existing light bar.
- Fuse Protection: The light bar shall provide multi levels of electrical connection protection for the vehicle and light bar. The first level of light bar protection shall have a 40A max fuse protection on 10 Ga positive lead going to the light bar. The light bar controller shall have six fuses ranging from 5A to 20A to prevent possible damage to the light bar or vehicle.
- LED light heads must meet the approval of the following specifications: SAE 1113/41 RFI, SAE J845 and FCC Part 15.
 - Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:

• Solaris S2 LED takedown light	1.0 A*
• 50-Watt halogen takedown light	3.9 A*
• 35-Watt halogen alley light	2.7 A*
• Solaris S2 4" and 5" flashing positions	1.0 A*
• Solaris S2 2" flashing positions	0.5 A*

* Amperage in steady burn mode
- The LED Solaris module system shall incorporate a unique suppression circuit design that greatly minimizes RFI noise (Radio Frequency Interference) associated with LED technology. RFI can greatly reduce public safety two-way radio reception sensitivity and interfere with vehicular laptop computer performance operation.
- **Smart Siren: Federal Model SSP2000B/SSP2000B-200 - Electronic siren/light control.**

GENERAL

- The Smart Siren Platinum SSP2000B or SSP2000B-200 is a full featured, programmable electronic siren and light control system. The system shall consist of a control head and siren amplifier/relay module utilizing Federal Signal's Convergence Network. Communication between the control head and the amplifier unit is accomplished thru a 25' RS485 serial cable. The 'intelligence' of the system is contained in the control head and all system functions are controlled by the control head. System shall include a microphone and all necessary connections to the amplifier.

REMOTE SIREN AMPLIFIER

- Amplifier unit shall be (case dimensions) 4.4” in height by 7.6” in width and 7.9” in depth.
- Amplifier shall consist of an easily accessible external volume adjustment for radio rebroadcast and public address which includes visual confirmation that power is being supplied to the unit.
- Amplifier shall consist of two rugged power terminals easily identified by black and red colored insulator covers.
- Eleven (11) solid-state auxiliary relay outputs shall be provided for non-serial controlled lightbars, perimeter lights, and accessories. One- 10A high/low, six- 10A high relays and four- 2A high relays shall correspond to each individually fused auxiliary output.
- Amplifier shall consist of a control system that illuminates auxiliary outputs to clearly indicate the status of individual lights, sirens and other auxiliary equipment.
- Separate control head allows the amplifier unit to be remotely mounted.
- Amplifier shall consist of four active – low circuit inputs. Cable assembly P/N 17500063 shall be provided and install between the control head and the configurable steering wheel switches thru the Ford Police Interceptor’s fourteen way connector, for example. Additional uses are trunk/door release, gun lock, intrusion alarms and monitoring K9 temperature systems.
- Amplifier shall consist of six “Plug and Play” serial ports to be used for Federal Signal’s unique Convergence network with one connection to the control head.
- Amplifier’s external housing provides easy access to all auxiliary outputs and inputs, speakers, park disable, radio rebroadcast input and horn ring transfer utilizing secure locking connectors.
- The SSP2000B/SSP2000B-200 amplifier/relay module shall produce wail, yelp, priority, and hi-lo siren tones, as well as an air horn tone. Siren tones shall be compliant with standards SAE J1849 JUL89. Additional features shall include horn ring transfer, public address, and radio rebroadcast.
- The SSP2000B shall drive one 11-ohm impedance, 100 watt speakers. The SSP2000B-200 shall be capable of driving two, 11 ohm impedance, 100 watt speakers.
- Operating temperature range is -30 degrees to +65 degrees Celsius. (relays at full power - 30C to 80C, relay power at 60% capacity).

CONTROL HEAD

- Control head shall be (case dimensions) 3.2” in height, by 6.8” in width and 1.6” in depth. The control head is the intelligence of the Convergence Network with seventeen (17) tactile push buttons and a four position progressive slide switch.

- The control head shall have the capability of interchangeable custom legends for designating functions. A sheet of applicable function legends is supplied.
- The control head shall have PA and Radio adjustments located on the back.
- The SSP2000B or SSP2000B-200 shall include a MNCT microphone (P/N 258B577-03) that locks in place connecting directly to the back of the control head.
- The control head includes a visual reference emulating selected patterns of the SignalMaster arrow directional operations.
- The control head is capable of providing an audible signal when an auxiliary or slide switch position is activated. Notification beep shall be factory set at ten seconds. Control head shall be capable of decreasing the levels of brightness of any of the seventeen buttons.
- Control head slide switch shall provide 10A in slide switch positions 1 and 2, and 20A in slide switch position 3.

SIGNALMASTER

- SSP2000B or SSP2000B-200 SignalMaster controller shall operate six or eight (default) lamp arrow directional devices. Button #14 shall control all arrow functions, LRCO (left/right/center-out).
- SSP2000B or SSP2000B-200 SignalMaster controller provides four SAE directional arrow patterns and ten non-SAE warning patterns. Button #15 shall control the step- thru warning patterns. Fast and low power modes shall be available.

ELECTRICAL

- The unit shall be designed for negative ground vehicles. Normal operating voltage shall be 11.0 to 16.0 VDC.
- Power can be controlled through the positive (12volt DC +) ignition input.
- Volume control for radio rebroadcast and PA is located on the amplifier and on the back of the control head.
- The control unit shall be backlit with LED indicators.

PROGRAMMING FORMAT

- The Smart Siren Platinum SSP2000B or SSP2000B-200 Configuration Software is a Microsoft Windows-based application that enables the programming of the control head and amplifier to operate the warning devices installed in the emergency vehicle.
- The control head serves as the command center, and the SSP2000B or SSP2000B-200 Siren Amplifier/Relay Module acts as the communications hub of the Convergence Network. Using solid-state relays and LEDs that glow to indicate signal transmission between circuits, the siren amplifier coordinates the operation and communication of all

devices on the network according to the configuration file created using the Configuration Software.

- SSP2000B or SSP2000B-200 is contained within an integrated workspace. The four programming modules are:
 - a. Button Configuration Module
 - b. Button Selection Module
 - c. Device Selection Module
 - d. Button Control Module
- The internal solid state relays connect to pins on the back of the SSP2000B or SSP2000B-200 siren amplifier. The six 10-ampere relays can be configured as active high (pulled to 12 VDC battery voltage) only. One 10- ampere relay can be configured as active high(pulled to 12 VDC battery voltage or active low (pulled to ground). The four 2-ampere solid-state relays are active high only. These internal relays are commonly used for non-serial controlled devices or flashing lights.

WARRANTY

- Warranty shall be three years parts and one year labor coverage.

PRODUCT REFERENCE

- The siren shall be a Federal Signal Corporation Model SSP2000B or SSP2000B-200 - Smart Siren Platinum.
- **Siren Speaker: Federal ES100C Dynamax Siren Speaker with Mount**
100 watt compact style class a speaker.
Dimensions approximate 6"W x 6"H x 2.5"D.
Weight 5 lbs.
With mounting hardware

Legend and Smart Siren discontinued. Replace with ALG53/PF200S17

Price- \$2,057.00 **ea.** **Item#-** ~~LCG53Z-PKG~~ Item #ALG53/PF200S17-PGK

18. Federal Signal- Viper LED Dash lights- Double.

- The light head housings and flash guards shall be constructed of black, lightweight polycarbonate plastic.
- Each light head shall be shipped complete with flash guard, reflective tape, swivel type bail bracket, suction cups and mounting hardware.
- All flash guards shall be able to snap into place and not require additional hardware.
- Bail brackets shall be attached to the sides of the polycarbonate housing to insure sufficient up and down light output adjustment.
- Wire harness lengths shall be a minimum of 5' in length.
- Dimensions shall not exceed 8-5/8"L x 2-3/8"H x 3"D for the dual head housings, without the flash guard included. Each dual head unit must contain at least 16 high powered LEDs.

- Each light head must use reflectors designed with Solaris™ reflector technology, no exceptions.
- Each dual light head lens shall be clear and include horizontal prism modifications so as to meet light output standards requirements.
- Both the single and dual light heads shall meet the following approvals: SAE 595, California Title 13/Class “B” for blue and SAE J578d for light output and color performance. SAE 1113/41 and FCC Part 15 for RFI and EMI standards requirements.
- Current draw shall not exceed 1.5A for single head units or 2.25A for dual head units at 12.8VDC.
- The unit shall incorporate advanced thermal management methods to minimize heat and increase product reliability.
- Each light head shall have “built-in” pattern memory where the last pattern used is the first to display when the unit is turned back on.
- Each unit shall use advanced 2-phase wire technology to control pattern operation and choice.
- Each unit shall include a pattern push button switch to scroll forwards and backwards through the patterns as well as to synchronize the patterns over multiple light heads.
- Each light head shall have the ability to be set to flash patterns concurrent or as opposite flash to each other using 2-phase wire technology.
- Dual head units shall have at least 25 patterns to choose from including “Steady Burn” and “Null/Off” patterns

Discontinued replace with Xtreme Dual XSM2-BRW

Price- \$169.00 **ea.** **Item#-** ~~329000/329252-Color/Color~~ Item #XSM2-BRW

19. Federal Signal- Viper LED Dash lights- Single

- The light head housings and flash guards shall be constructed of black, lightweight polycarbonate plastic.
- Each light head shall be shipped complete with flash guard, reflective tape, swivel type bail bracket, suction cups and mounting hardware.
- All flash guards shall be able to snap into place and not require additional hardware.
- Bail brackets shall be attached to the sides of the polycarbonate housing to insure sufficient up and down light output adjustment.
- Wire harness lengths shall be a minimum of 5’ in length.
- Dimensions shall not exceed 4-3/8”L x 2-3/8”H x 3”D for the single light head housing without the flash guard attached.
- Each single light head shall contain at least 8 high powered LEDs.
- Each light head must use reflectors designed with Solaris™ reflector technology, no exceptions.
- Each single light head lens shall be clear and include horizontal prism modifications so as to meet light output standards requirements.
- Both the single and dual light heads shall meet the following approvals: SAE 595, California Title 13/Class “B” for blue and SAE J578d for light output and color performance. SAE 1113/41 and FCC Part 15 for RFI and EMI standards requirements.
- Current draw shall not exceed 1.5A for single head units or 2.25A for dual head units at 12.8VDC.

- The unit shall incorporate advanced thermal management methods to minimize heat and increase product reliability.
- Each light head shall have “built-in” pattern memory where the last pattern used is the first to display when the unit is turned back on.
- Each unit shall use advanced 2-phase wire technology to control pattern operation and choice.
- Each unit shall include a pattern push button switch to scroll forwards and backwards through the patterns as well as to synchronize the patterns over multiple light heads.
- Each light head shall have the ability to be set to flash patterns concurrent or as opposite flash to each other using 2-phase wire technology.
- Single head units shall have at least 23 patterns to choose from including “Steady Burn” and “Null/Off” patterns.
- Dual head units shall have at least 25 patterns to choose from including “Steady Burn” and “Null/Off” patterns

Discontinued replace with XSM1-BRW

Price- \$85.00 **ea.** **Item#-** ~~329000/329152~~ **Color** Item XSM1-BRW

20. Federal Signal- 45” Legend light bar only

- **Light bar: 45” Legend** - The light bar shall have maximum dimensions of 2.5” in height, 11.2” in width, 44.5” in overall length, and weigh 20.4 pounds.
- Light emitting diode (LED) light heads shall consist of Solaris S2 reflector modules utilizing high output LED technology. Each Solaris S2 module shall use a compound-curve and polished reflector design and shall contain three or six diodes. Solaris S2 reflector modules shall be available in red, blue, white, green and amber LEDs. A total of 14 Solaris S2 modules shall be included. The minimum total number of Gen 3 lamp diodes shall be 96.
- Reliable onboard circuitry technologies shall be utilized. Legend light bar design shall utilize surface mounted LEDs projecting downward into the Solaris S2 reflector assemblies. ROC technology shall use microprocessor controls to provide a total of twenty-six user-selectable flash patterns, including an intersection mode, two test patterns and a low power ‘dim’ mode. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: SAE 1113/41 RFI and SAE J845.
- The Legend light bar shall function with three prioritized modes of operation. Mode 3 shall be the highest priority and shall override both Mode 2 and Mode 1. Mode 2 shall override Mode 1. Each of the three modes will provide preset (default) flash patterns that can be activated for various stages of the emergency vehicle’s warning light levels of operation. A total of twenty-six flash patterns are available for mode selections.
- A minimum of one pair of internally mounted alley lights shall be installed at the ends of the light bar. Each alley light shall use a SAE compliant 35-watt halogen MR-11 lamp or an LED lamp. Each alley light must be adjustable ± 10 degrees on a horizontal plane. Each of the three adjustment locations shall be secured upon making the final adjustment with a positive locking device built into the assembly of the alley light - no exception. Each alley light fixture must be vertically adjustable +2 degrees to +5 degrees on a vertical plane. A flashing feature is included for alley light pairs.

- A minimum of one pair of internally mounted takedown lights shall be installed and face forward. Takedown lights may use either 50-watt halogen bi-pin lamps or white LEDs.
- Takedown option: One pair of takedown lights shall be installed and face forward. Each takedown light fixture must have at least 7.1 square inches of polished reflective surface area. Each takedown light shall and use a SAE compliant 50-watt halogen GH-8 style Bi-pin lamp or an LED lamp, no exceptions. This will ensure proper officer/user safety by projecting the brightest and most direct focused clear-white light source available. Each takedown light must be adjustable ± 8 degrees on a horizontal plane. Each adjustment location shall be secured upon making the final adjustment with a positive locking device built into the assembly of the takedown light - no exception. Each takedown light fixture must be adjustable +2 degrees to +5 degrees on a vertical plane - no exceptions. A flashing feature is included for takedown light pairs.
- Intersection flash mode of operation: The light bar shall provide a high activity pattern that attracts attention to the vehicle as it approaches an intersection. Intersection operation shall be able to be controlled by three selected options including Power On-Off function, TAPII (push-on/push-off) by using a momentary contact switch or horn ring button or 8-second timer activation.
- Front/Rear Cutoff or Enable function: The light bar shall be able to provide a front/rear cutoff and front/rear enable function. Front/rear cutoff is controlled by applying 12 VDC to supplied controlled wires. Front/rear enable activates the LED modules when +Bat is applied to their control wires. This function allows the light bar to be custom programmed to meet a wide range of departmental needs and installed light controls.
- The Legend light bar shall be able to operate in the low power mode if desired. The light bar shall be capable of dimming the main bar LEDs approximately 50% to prevent blinding of approaching vehicles. The low power function shall only operate in Mode 1 or Mode 2 levels. It is disabled when the light bar is turned off or switched to another flash pattern, including Mode 3 or the intersection mode level. Light bars that dim in level 3 or during the pursuit mode shall not be accepted.
- The solid aluminum extrusion shall be of a 1/8" minimum thickness design to provide strength and durability without excessive weight. The mounting feet and bases for light mechanisms attach directly to the extrusion's integrated mounting channel which provides a well-secured mounting platform.
- The light bar housings shall be molded polycarbonate for durability and strength. Both domes shall be secured to the extruded aluminum frame by use of four barrel nut and bolt assemblies. A lip seal gasket shall be around all external perimeters to provide a weatherproof seal. The upper level domes must incorporate a honeycomb-molded design to maximize strength and reinforcement for the internal light bar components from hail and unforeseen impact. The lower level domes shall be clear.
- The serial interface module is the device used to communicate with the Legend light bar. Each light bar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module shall be included (FS model #Z8583446) that transitions from the RJ-style connection to the 24-conductor control link cable harness. Light bar hook-

up shall require only a 10-ga power cable, a 10-ga ground cable, and a 25' snap-in CAT 5 communication cable. Both the 10-ga power and the 10-ga ground cables shall measure twenty-one feet in length – no exceptions.

- The light bar shall be capable of being removed from the vehicle without disassembly of the vehicle's emergency light controller's wiring system for ease of service or repair.
- A six-lamp LED Signal Master traffic management device shall be built into the light bar and standard for the Legend. Light heads shall consist of six Solaris S2 reflector modules.
- A hook-on mounting bracket with stainless steel hardware must be included and be compatible for vehicles with or without rain gutters. Mounting legs may be adjusted by the installer to meet a variety of roof width requirements of the specified vehicle. Three pair of rubber mounting pads shall be included and vary in height: short, medium, and tall. Mounting pads can be installed to determine the overall height of the light bar off the roof of the vehicle and can compensate for various roof pitches and slope angle adjustments.
- Three light bar programming mode options: The light bar shall be able to support three user selectable programming modes. The light bar can be programmed on the vehicle or outside the vehicle (i.e., bench). It can also be programmed with an optional ROC interface cloning kit (ROCPR1) which uses the installed vehicle light control and cloning flash patterns from an existing light bar.
- Fuse Protection: The light bar shall provide multi levels of electrical connection protection for the vehicle and light bar. The first level of light bar protection shall have a 40A max fuse protection on 10 Ga positive lead going to the light bar. The light bar controller shall have six fuses ranging from 5A to 20A to prevent possible damage to the light bar or vehicle.
- LED light heads must meet the approval of the following specifications: SAE 1113/41 RFI, SAE J845 and FCC Part 15.
 - Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:

• Solaris S2 LED takedown light	1.0 A*
• 50-Watt halogen or LED takedown light	3.9 A*
• 35-Watt halogen or LED alley light	2.7 A*
• Solaris S2 4" and 5" flashing positions	1.0 A*
• Solaris S2 2" flashing positions	0.5 A*

* Amperage in steady burn mode
 - The LED Solaris module system shall incorporate a unique suppression circuit design that greatly minimizes RFI noise (Radio Frequency Interference) associated with LED technology. RFI can greatly reduce public safety two-way radio reception sensitivity and interfere with vehicular laptop computer performance operation.

Discontinued replace with Allegiant ALG45

Price- \$1,129.00 **ea.** **Item#-** ~~LGD452-TBD~~ Item #ALG45-TBD

21. Federal Signal- 53" Legend light bar only.

- **Light bar: 53" Legend** - The light bar shall have maximum dimensions of 2.5" in height, 11.2" in width, 52.7" in overall length, and weigh 24.2 pounds.
- Light emitting diode (LED) light heads shall consist of Solaris S2 reflector modules utilizing high output LED technology. Each Solaris S2 module shall use a compound-curve and polished reflector design and shall contain three or six diodes. Solaris S2 reflector modules shall be available in red, blue, white, green and amber LEDs. A total of 18 Solaris S2 modules shall be included. The minimum total number of Gen 3 lamp diodes shall be 120.
- Reliable onboard circuitry technologies shall be utilized. Legend light bar design shall utilize surface mounted LEDs projecting downward into the Solaris S2 reflector assemblies. ROC technology shall use microprocessor controls to provide a total of twenty-six user-selectable flash patterns, including an intersection mode, two test patterns and a low power 'dim' mode. ROC circuitry shall be field replaceable and shall meet the approval of the following specifications: SAE 1113/41 RFI and SAE J845.
- The Legend light bar shall function with three prioritized modes of operation. Mode 3 shall be the highest priority and shall override both Mode 2 and Mode 1. Mode 2 shall override Mode 1. Each of the three modes will provide preset (default) flash patterns that can be activated for various stages of the emergency vehicle's warning light levels of operation. A total of twenty-six flash patterns are available for mode selections.
- A minimum of one pair of internally mounted alley lights shall be installed at the ends of the light bar. Each alley light shall use a SAE compliant 35-watt halogen MR-11 lamp or an LED lamp. Each alley light must be adjustable ± 10 degrees on a horizontal plane. Each of the three adjustment locations shall be secured upon making the final adjustment with a positive locking device built into the assembly of the alley light - no exception. Each alley light fixture must be vertically adjustable +2 degrees to +5 degrees on a vertical plane. A flashing feature is included for alley light pairs.
- A minimum of one pair of internally mounted takedown lights shall be installed and face forward. Takedown lights may use either 50-watt halogen bi-pin lamps or white LEDs.
- Takedown option: One pair of takedown lights shall be installed and face forward. Each takedown light fixture must have at least 7.1 square inches of polished reflective surface area. Each takedown light shall and use a SAE compliant 50-watt halogen GH-8 style Bi-pin lamp or an LED lamp, no exceptions. This will ensure proper officer/user safety by projecting the brightest and most direct focused clear-white light source available. Each takedown light must be adjustable ± 8 degrees on a horizontal plane. Each adjustment location shall be secured upon making the final adjustment with a positive locking device built into the assembly of the takedown light - no exception. Each takedown light fixture must be adjustable +2 degrees to +5 degrees on a vertical plane - no exceptions. A flashing feature is included for takedown light pairs.
- Intersection flash mode of operation: The light bar shall provide a high activity pattern that attracts attention to the vehicle as it approaches an intersection. Intersection operation shall be able to be controlled by three selected options including Power On-Off function, TAPII (push-on/push-off) by using a momentary contact switch or horn ring button or 8-second timer activation.

- Front/Rear Cutoff or Enable function: The light bar shall be able to provide a front/rear cutoff and front/rear enable function. Front/rear cutoff is controlled by applying 12 VDC to supplied controlled wires. Front/rear enable activates the LED modules when +Bat is applied to their control wires. This function allows the light bar to be custom programmed to meet a wide range of departmental needs and installed light controls.
- The Legend light bar shall be able to operate in the low power mode if desired. The light bar shall be capable of dimming the main bar LEDs approximately 50% to prevent blinding of approaching vehicles. The low power function shall only operate in Mode 1 or Mode 2 levels. It is disabled when the light bar is turned off or switched to another flash pattern, including Mode 3 or the intersection mode level. Light bars that dim in level 3 or during the pursuit mode shall not be accepted.
- The solid aluminum extrusion shall be of a 1/8" minimum thickness design to provide strength and durability without excessive weight. The mounting feet and bases for light mechanisms attach directly to the extrusion's integrated mounting channel which provides a well-secured mounting platform.
- The light bar housings shall be molded polycarbonate for durability and strength. Both domes shall be secured to the extruded aluminum frame by use of four barrel nut and bolt assemblies. A lip seal gasket shall be around all external perimeters to provide a weatherproof seal. The upper level domes must incorporate a honeycomb-molded design to maximize strength and reinforcement for the internal light bar components from hail and unforeseen impact. The lower level domes shall be clear.
- The serial interface module is the device used to communicate with the Legend light bar. Each light bar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module shall be included (FS model #Z8583446) that transitions from the RJ-style connection to the 24-conductor control link cable harness. Light bar hook-up shall require only a 10-ga power cable, a 10-ga ground cable, and a 25' snap-in CAT 5 communication cable. Both the 10-ga power and the 10-ga ground cables shall measure twenty-one feet in length – no exceptions.
- The light bar shall be capable of being removed from the vehicle without disassembly of the vehicle's emergency light controller's wiring system for ease of service or repair.
- A six-lamp LED Signal Master traffic management device shall be built into the light bar and standard for the Legend. Light heads shall consist of six Solaris S2 reflector modules.
- A hook-on mounting bracket with stainless steel hardware must be included and be compatible for vehicles with or without rain gutters. Mounting legs may be adjusted by the installer to meet a variety of roof width requirements of the specified vehicle. Three pair of rubber mounting pads shall be included and vary in height: short, medium, and tall. Mounting pads can be installed to determine the overall height of the light bar off the roof of the vehicle and can compensate for various roof pitches and slope angle adjustments.
- Three light bar programming mode options: The light bar shall be able to support three user selectable programming modes. The light bar can be programmed on the vehicle or outside the vehicle (i.e., bench). It can also be programmed with an

optional ROC interface cloning kit (ROCPR1) which uses the installed vehicle light control and cloning flash patterns from an existing light bar.

- Fuse Protection: The light bar shall provide multi levels of electrical connection protection for the vehicle and light bar. The first level of light bar protection shall have a 40A max fuse protection on 10 Ga positive lead going to the light bar. The light bar controller shall have six fuses ranging from 5A to 20A to prevent possible damage to the light bar or vehicle.
- LED light heads must meet the approval of the following specifications: SAE 1113/41 RFI, SAE J845 and FCC Part 15.
 - Total current requirements (rated in amperes) at 12.8 VDC shall not exceed:
 - Solaris S2 LED takedown light 1.0 A*
 - 50-Watt halogen or LED takedown light 3.9 A*
 - 35-Watt halogen or LED alley light 2.7 A*
 - Solaris S2 4" and 5" flashing positions 1.0 A*
 - Solaris S2 2" flashing positions 0.5 A*
 - * Amperage in steady burn mode
- The LED Solaris module system shall incorporate a unique suppression circuit design that greatly minimizes RFI noise (Radio Frequency Interference) associated with LED technology. RFI can greatly reduce public safety two-way radio reception sensitivity and interfere with vehicular laptop computer performance operation.

Discontinued replace with Allegiant ALGT53

Price- \$1,208.00 **ea.** **Item#-** ~~LED53Z-TBD~~ Item #ALGT53-TBD

22. Federal Signal- AS124 Economy Speaker with Mount

SCOPE

This specification covers a speaker that is capable of reproducing voice and siren sounds from siren/public address amplifiers found in emergency and public safety vehicles.

GENERAL DESCRIPTION

The Federal Signal AS124 speaker uses advanced housing material and field replaceable Neodymium drivers to provide an effective, high-quality sound. It shall be weatherproof and capable of accepting 100 watts of input power.

CONSTRUCTION

The speaker shall be a square housing not exceeding 5.7" in height and/or 7.7" in width. The depth shall not exceed 4.7" so that the speaker can be installed behind the grille on most emergency response vehicles or on the bumper. The speaker shall not exceed 6.0 lbs.

The speaker housing shall be constructed of composite plastic consisting of 30% glass filled PET (polyethylene terephthalate) and shall be fully encapsulated.

The projector and driver shall be integrated into the housing itself and shall be field serviceable.

The speaker shall use neodymium magnetic materials.

Vehicle specific mounting brackets are available for most commonly used public safety vehicles and can

accommodate the safe and proper mounting of the AS124 speaker. The speaker can also be mounted directly onto most flat surfaces.

The speakers electrical leads shall be color coded and of sufficient length to allow connection to the siren amplifier.

The housing shall be designed to allow adequate drainage in the front and bottom of the unit.

The speaker shall comply with CCR, Title 13, Article 13, Class A and SAE J1849 EVS 3 specifications when matched with any Federal Signal 100W siren.

Impedance shall be 11 ohms.

WARRANTY

The warranty shall be two year parts and one year labor coverage.

PRODUCT REFERENCE

The speaker shall be manufactured in the USA, and be Federal Signal model 750501.

Price- \$120.00 **ea.** **Item#-** 750501

23. Federal Signal- MicroPulse-Wide Angle 9 Perimeter Warning Lights

- Input Voltage Range: 12-VDC
- Number of LEDs – 9, producing 180 degree light spread
- Designed to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface mount models/black bezel included
- Single or dual color
- Three-year LED warranty

Price- \$115.00 **ea.** **Item#-** MPSW9-Color

24. Federal Signal- MicroPulse-Wide Angle 6 Perimeter Warning Lights

- Input Voltage Range: 12-VDC
- Number of LEDs – 6, producing 180 degree light spread
- Designed to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface mount models/black bezel included
- Single or split color
- Three-year LED warranty

Price- \$95.00 **ea.** **Item#-** MPSW6-Color

25. Federal Signal- Corner LED Light System- Single or Dual color

- Input Voltage Range: 12-VDC
- Number of LEDs – 12 for single color, 12 for dual color (6 each color)
- Internal or external mounting options
- Single/Multi unit synchronizations
- Single or dual color
- Five-year LED warranty

Price- \$55.00 **ea.** **Item#-** 416910-Color / 416900-Color/Color

26. Federal Signal- MicroPulse-12 ULTRA Perimeter Warning Lights

- Input Voltage Range: 12-24 VDC
- Number of LEDs – 12
- Super Slim design to offer wider range of mounting areas
- Single/Multi unit synchronizations
- Surface/Grille mount models
- Single, split or dual colors available
- Three-year LED warranty

Price- \$98.00 **ea.** **Item#-** MPS1200U-any color

27. Federal Signal – Allegiant 45” two-color lightbar

SCOPE

This specification describes the minimum requirements for an ultra-low profile two-color linear lightbar utilizing LED technology for emergency vehicles. The lightbar system shall utilize Solaris reflector LED technology, Reliable Onboard Circuitry (ROC) manufacturing designs, SpectraLux multi-color LED technology and Convergence Network (serial controlled) functionality.

PRIMARY WARNING

- Light emitting diode (LED) light heads shall consist of 4”, 5” and corner Solaris reflector modules utilizing high output LED technology. Each Solaris module shall use a compound-curve and polished reflector design and shall contain six, nine, twelve or eighteen diodes. Solaris reflector modules shall be available in red, blue, white, green and amber LEDs.
- Each 45” lightbar shall contain a total of eighteen Solaris reflector modules. A total of ten blue and white Solaris modules, two blue modules, six blue and amber Solaris modules shall be included. The total maximum number of Gen 3 lamp diodes shall be 228.
- Reliable onboard circuitry technologies shall be utilized. Allegiant lightbar design shall utilize surface mounted LEDs projecting downward into the Solaris reflector assemblies. ROC technology shall use microprocessor controls to provide a total of twenty-eight user-selectable flash patterns, including an intersection mode, one test pattern and a low power ‘dim’ mode. ROC circuitry shall be field replaceable. Allegiant shall meet the approval of the following specifications: SAE Class 1 (amber, blue, red, white) and CAC Title 13 (amber, blue, red). No exceptions shall be allowed.
- The Allegiant lightbar shall function with three prioritized modes of operation. Mode 3 shall be the highest priority and shall override both Mode 2 and Mode 1. Mode 2 shall override Mode 1. Each of the three modes will provide preset (default) flash patterns that can be activated for various stages of the emergency vehicle’s warning light levels of operation. A total of twenty-eight flash patterns are available for mode selections. Two cruise modes shall be available. Cruise #1 shall illuminate the ends of the lightbar. Cruise #2 shall illuminate all Solaris lighthoods. Cruise mode shall illuminate at 10% of full intensity.
- A minimum of one pair of internally mounted alley lights shall be installed at the ends of the lightbar. Multi-position (two pair) alley lights shall be available. The total number of white LED’s utilized for alley light functions shall be a minimum of three (single alley) and maximum of twelve (dual alley). A flashing feature is included for alley light pairs.

- A minimum of one pair and maximum of three pair (ALGT45) or of internally mounted takedown lights shall be installed and face forward. Takedown lights shall utilize high output white LEDs with narrow spot beam reflectors. This will ensure proper officer/user safety by projecting the brightest and most direct focused white light source available. The total number of white LED's utilized for takedown light functions shall be 12-36 (ALGT45). A flashing feature is included for takedown light pairs.
- Left Flood – upon activation, all five (ALGT45) driver side Solaris modules and left alley shall illuminate steady-on. A total of thirty (ALGT45) white high output LED's shall illuminate a 90° area at the driver side front and side perimeter of the emergency vehicle.
- Right Flood – upon activation, all five (ALGT45) passenger side Solaris modules and right alley shall illuminate steady-on. A total of thirty (ALGT45) white high output LED's shall illuminate a 90° area at the passenger side front and side perimeter of the emergency vehicle.
- Full Flood - upon activation, all ten (ALGT45) forward and side facing Solaris modules shall illuminate steady-on. A total of sixty (ALGT45) white high output LED's shall illuminate a 180° area at the front and side perimeter of the emergency vehicle.
- Intersection flash mode of operation: The lightbar shall provide a high activity pattern that attracts attention to the vehicle as it approaches an intersection. Intersection operation shall be able to be controlled by three selected options including Power On-Off function, TAPII (push-on/push-off) by using a momentary contact switch or horn ring button or 8-second timer activation.
- Front/Rear Cutoff or Enable function: The lightbar shall be able to provide a front/rear cutoff and front/rear enable function. Front/rear cutoff is controlled by applying 12 VDC to supplied controlled wires. Front/rear enable activates the LED modules when +Bat is applied to their control wires. This function allows the lightbar to be custom programmed to meet a wide range of departmental needs and installed light controls.
- The Allegiant lightbar shall be able to operate in the low power mode if desired. The lightbar shall be capable of dimming the main bar LEDs approximately 70% to prevent blinding of approaching vehicles. The low power function shall only operate in Mode 1 or Mode 2 levels. It is disabled when the lightbar is turned off or switched to another flash pattern, including Mode 3 or the intersection mode level. Lightbars that dim in level 3 or during the pursuit mode shall not be accepted, no exceptions!
- The lightbar shall have low standby current (less than 1mA) while it is not in operation. This helps reduce vehicle electrical draw while not in use.

HOUSING – BODY

- The solid aluminum extrusion shall be of a 1/8" minimum thickness design to provide strength and durability without excessive weight. The mounting feet and bases for light mechanisms attach directly to the extrusion's integrated mounting channel which provides a well-secured mounting platform.
- The lightbar base housings shall be molded polycarbonate for durability and strength. Base housings shall be secured to the extruded aluminum frame by use of four-barrel nut and bolt assemblies. Base housing shall be clear. A lip seal gasket shall be around all external perimeters to provide a weatherproof seal. Domes must incorporate a honeycomb-molded design to maximize strength and reinforcement for the internal lightbar components from hail and unforeseen impact. Domes shall be available in blue, clear, or gray.

CONVERGENCE NETWORK – SMART SIREN PLATINUM SERIES

- A CAT5 communications cable shall be the only connection made to the lightbar in addition to power and ground. All flash patterns and lightbar operations shall be controlled through the CAT5 communication cable and shall be a direct connection to the (optional) Smart Siren Platinum (SSP) series amplifier. No exceptions.

SERIAL INTERFACE MODULE

- The serial interface module is the device used to communicate with the Allegiant lightbar. Each lightbar shall be controlled via a standard RS485 bus connection with protocols based upon SAE standards J1708 and J1587. A serial interface module shall be included (#Z8583446) that transitions from the RJ-style connection to the 24-conductor control link cable harness. Lightbar hook-up shall require only a 10-ga power cable, a 10-ga ground cable, and a 25' snap-in CAT 5 communication cable. Both the 10-ga power and the 10-ga ground cables shall measure twenty-one feet in length – no exceptions. The serial interface module shall be specified and included with the lightbar when the Smart Siren Platinum siren is not required.
- The lightbar shall be capable of being removed from the vehicle without disassembly of the vehicle's emergency light controller's wiring system for ease of service or repair.

DISCRETE CABLE

- When Convergence Network capability is not required, a single nine conductor gray jacketed cable shall exit the passenger side of the lightbar. The lightbar will function with two modes of operation including twenty-eight programmable flash patterns. The front and rear of the lightbar can be enabled separately. Mode 2 shall override Mode1. Mode 2 does not allow dimming. Mode 2 by default, activates the flashing takedown and alley light features. SignalMaster arrow directional capability is not available.

SIGNALMASTER – CONVERGENCE NETWORK MODELS ONLY

- A six-head (for ALGT45) LED SignalMaster traffic management device shall be built into the lightbar and standard for the Allegiant. Light heads shall consist of six Solaris S2 reflector modules.
- The Allegiant lightbar shall be configured for 'internal' SignalMaster control operation. 12V applied to the specified control lead shall activate the lightbar's internal SignalMaster controller. Internal operation functions shall include: Left, Center, Right, Warn 1: Outer LEDs alternate, Warn 2: Two outer LEDs alternate, Warn 3: Outer LEDs and two LEDs alternate, Warn 4: Outer LEDs and two inner LEDs flash, then the LEDs between the inner and outer LEDs; and Fast operates the selected pattern 50% faster.
- When the lightbar is operating in any of the three priority flashing modes, all SignalMaster modules shall emulate the selected flash patterns. When the operator activates the SignalMaster, the directional warning patterns shall override any other activity in that portion of the lightbar. Lightbars that are not capable of this feature shall not be accepted.

MOUNTING BRACKETS

- A hook-on mounting kit with stainless steel hardware shall be included and be compatible for vehicles with or without rain gutters. Mounting legs may be adjusted by the installer to meet a variety of roof width requirements of the specified vehicle. Rubber mounting pads shall be included and vary in height (four each): thin, medium, and thick. The lo-profile mounting kit shall include four thin pads and eight plastic spacers. Mounting pads can be installed to determine the overall height of the lightbar off the roof of the vehicle and can compensate for various roof pitches and slope angle adjustments.

ELECTRICAL

- Three lightbar programming mode options: The lightbar shall be able to support three user selectable programming modes. The lightbar can be programmed on the vehicle or outside the vehicle (i.e., bench). It can also be programmed with an optional ROC interface cloning kit (ROCPR1) which uses the installed vehicle light control and cloning flash patterns from an existing lightbar.
- Fuse Protection: The lightbar shall provide multi levels of electrical connection protection for the vehicle and lightbar. The first level of lightbar protection shall include the 40A max fuse protection on the 10 Ga positive lead going to the lightbar.
- Allegiant lightbar shall meet the approval of the following specifications: SAE Class 1, CAC Title 13, NFPA 1901, and GSA-KKK-A-1822F.
- Total current requirements (rated in amperes) at 12.8 VDC shall not exceed 9A (ALGT45) and 11A (ALGT53) in steady burn modes.

RFI (Radio Frequency Interference)

- The LED Solaris module system shall incorporate a unique suppression circuit design that greatly minimizes RFI noise (Radio Frequency Interference) associated with LED technology. RFI can greatly reduce public safety two-way radio reception sensitivity and interfere with vehicular laptop computer performance operation.

DIMENSIONS

45" Allegiant - The lightbar shall have maximum dimensions of 1.8" in height, 11.2" in width, 44.5" in overall length, and weigh 23 pounds.

WARRANTY

- The warranty period shall be five years parts replacement and five-year labor coverage. LED components shall be covered by five years parts replacement and five-year labor coverage.

PRODUCT REFERENCE

- A complete system shall include the Allegiant lightbar, optional SignalMaster control if required, a vehicle specific hook kit, the serial interface module and pigtail harness if required.
- The lightbar shall be manufactured by the Federal Signal Corporation and shall be the Allegiant model ALGT45-XXXXX (45").

Price \$1,129.00 **each** **Item # ALGT45-TBD**

28. Federal Signal XStream – Dual Head Interior Mount Light

- The light head housings and flash guards shall be constructed of black, lightweight polycarbonate plastic.
- Each light head shall be shipped complete with flash guard, bail bracket, suction cups and mounting hardware.
- All flash guards shall be able to snap into place and not require additional hardware.
- Bail brackets shall be attached to the sides of the polycarbonate housing to insure sufficient up and down light output adjustment.
- Dimensions shall not exceed 7.3"L x 1.0"H x 2.2"D for the dual head housings, without the flash guard included. Each dual head unit must contain at least 18 high powered LEDs.
- Each light head must use reflectors designed with Solaris™ reflector technology, no exceptions.
- Each dual light head lens shall be clear and include horizontal prism modifications so as to meet light output standards requirements.

- Both the single and dual light heads shall meet the following approvals: SAE J845, Class 1 and SAE J595, Class 1
- Current draw shall not exceed 0.8A for single head units or 1.6A for dual head units at 12.8VDC.
- The unit shall incorporate advanced thermal management methods to minimize heat and increase product reliability.
- Each unit shall include two recessed buttons to scroll forwards and backwards through the patterns as well as to change colors.
- Dual head units shall have at least 25 patterns and 10 color modes to choose from including “Steady Burn”

Price ~~\$169.00~~ text here each Item # XSM2-BRW

29. Federal Signal XStream – Single Head Interior Mount Light

- The light head housings and flash guards shall be constructed of black, lightweight polycarbonate plastic.
- Each light head shall be shipped complete with flash guard, bail bracket, suction cups and mounting hardware.
- All flash guards shall be able to snap into place and not require additional hardware.
- Bail brackets shall be attached to the sides of the polycarbonate housing to insure sufficient up and down light output adjustment.
- Dimensions shall not exceed 3.9”L x 1.0”H x 2.2”D for the dual head housings, without the flash guard included. Each single head unit must contain at least 18 high powered LEDs.
- Each light head must use reflectors designed with Solaris™ reflector technology, no exceptions.
- Each dual light head lens shall be clear and include horizontal prism modifications so as to meet light output standards requirements.
- Both the single and dual light heads shall meet the following approvals: SAE J845, Class 1 and SAE J595, Class 1
- Current draw shall not exceed 0.8A for single head units or 1.6A for dual head units at 12.8VDC.
- The unit shall incorporate advanced thermal management methods to minimize heat and increase product reliability.
- Each unit shall include two recessed buttons to scroll forwards and backwards through the patterns as well as to change colors.
- Single head units shall have at least 25 patterns and 10 color modes to choose from including “Steady Burn”

Price \$85.00 each Item # XSM1-BRW

30. Federal Signal Headlight Flasher – FHL-CHG

- Vehicle Electrical System - 10/16 VDC negative ground
- Maximum Output - Two 9.5 circuits per side
- Circuit switching – High side

- 7 selectable flash patterns
- Universal mounting bracket
- Low voltage protection
- Reverse Polarity protection
- High Beam deactivation
- Dimensions: 0.7" H x 4.7" L x 2.05" W

Price \$68.00 each Item # FHL-CHG

31. Federal Signal Taillight Flasher – FHL-TAIL

- Vehicle Electrical System – 12 VDC negative ground
- Maximum Output – Two 5 A circuits
- Circuit switching – High side
- Universal mounting bracket
- Low voltage protection
- Reverse Polarity protection
- Flash patterns: 2.6 FPS
- Dimensions: 0.7" H x 4.7" L x 2.05 W

Price \$65.00 each Item # FHL-TAIL

Prices quoted shall be FOB City of Gulfport Note: All items with the exception of light bar products must be delivered within 30 days of receipt of purchase order. Failure to do so may result in cancellation of purchase order.

We/I do hereby certify by my signature that our product(s) bid meets or exceeds your specifications. We agree that failure to meet the specifications shall be just cause for the City of Gulfport to remove our company from the bid list.

VENDOR INFORMATION

Company/Firm Name	Federal Signal Corp
Authorized Representative – sign	<i>Randall F. Henderson</i>
Authorized Representative – print	Randall F. Henderson
Address	2645 Federal Signal Drive University Park, IL 60466
Phone Number	(800) 264-3578
Facsimile Number	(800) 682-8022
Email	policefireorders@federalsignal.com
Website (if available)	www.fedsig.com

Your attention is called to the fact that the state of Mississippi has a reciprocal preference law in regards to resident contractors. The state's treatment of non-resident contractor's and the local preference percentage shall be applied in evaluating the bids. It is the responsibility of the vendor to submit a copy of their state's preference law with the bid. Failure to do so may be reason to reject the bid.

Notice to bidders:

All bids are to be submitted on this form and shall be submitted in sealed envelopes marked in the lower left hand corner "**Group U – Electronic Equipment (Police Dept.)**", to be opened **December 12, 2022 @ 1:00 P.M.** Bids not submitted on this form may be disqualified.

Hold harmless: contractor agrees that it will, and hereby does, indemnify, defend and hold harmless city of Gulfport from and against any and all claims, damages, losses, costs and expenses of every kind and nature, including court costs and attorney fees and claims for damages resulting from or arising out of any infringement claim or claim of bodily injury, death or damage to real or tangible personal property caused by contractor and/or its partners, principals, agents, employees or subcontractors in the performance of this contract. City of Gulfport will notify the contractor in writing of any claim to be indemnified hereunder, of which city has knowledge, and contractor in turn will promptly notify city of any such claim. Contractor shall, at its sole expense, control the defense of such suit to the extent allowed by Mississippi law. The parties agree to cooperate with one another in the defense of any such matter.

Any request for price increase during the term of contract will be rejected. Should this rejection result in the cancellation of the contract, the vendor shall be removed from the qualified bidders list for twenty-four (24) months. If adverse conditions exist industry wide, modifications to disqualifications may be made as circumstances warrant.

Address bid to:

Purchasing Department
1410 24th Avenue, Hardy Bldg.
Gulfport, MS 39501