

SPECIFICATIONS FOR ONE (1) MOBILE WATER SUPPLY APPARATUS



Delivery of the completed vehicle shall be F.O.B. Yukon Fire Marshal's Office within 240 to 270 calendar days after the acceptance of the order dependent on chassis delivery.

DEMONSTRATION

An authorized representative of the manufacturer shall provide demonstration of the completed vehicle. One (1) day of orientation shall be provided and performed by a qualified representative of the manufacturer.

TERMS AND CONDITIONS OF PAYMENT

Full payment shall be paid upon completion and delivery acceptance.

SERVICE REQUIREMENTS

The bidder shall provide a "24 Hour", "7-Day Per Week" emergency parts and service toll free telephone number. This phone number must be listed on a separate statement included in the bid package, along with the contact name, business name, address, and phone number of the local service agency, which will service the vehicle after being placed into service. **(Mandatory Requirement)**

The service agency shall be capable to perform all required service work, and shall also have at their disposal the ability to have any required subcontracting work, such as engine, transmission, etc. work performed on behalf of the apparatus manufacturer.

ENGINEERING DRAWINGS

Engineering drawings shall be submitted to the purchaser prior to commencement of the manufacturing process.

This drawing shall show at a minimum the front, left, right and rear views of the vehicle, as it will look at the time of completion.

A copy of this drawing shall be signed and returned to the apparatus manufacturer and become part of the vehicle contract.

BODY MANUAL - ELECTRONIC

Two (2) digitized manual(s) shall be provided on operation of the complete apparatus. The manual(s) shall include a troubleshooting guide complete with recommended daily, weekly and annual maintenance procedures.

The apparatus manufacturer shall supply a complete wiring diagram for the color coded wiring harness.

WEIGHT AND BALANCE CALCULATION

The apparatus, prior to acceptance will be required to meet the vehicle stability of the applicable NFPA or ULC automotive fire apparatus standard.

A calculated center of gravity shall be performed to ensure the apparatus meets these requirements. The calculated center of gravity shall be no higher than 80 percent of the rear track axle width.

TESTING AND CERTIFICATION

The completed vehicle shall be tested and labeled to N.F.P.A. 1901 standards, 2016 edition by an independent third party certification organization.

The third party organization shall be accredited for testing systems on fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.

The certification organization shall not be owned or controlled by manufacturers or vendors of the apparatus being tested.

The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.

The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system.

There shall be no conditional, temporary, or partial certification of test results. Appropriate forms of data sheets shall be provided and used during testing.

Manufacturer's certification **is not** acceptable. **(Mandatory Requirement)**

The manufacturer shall be certified to ISO 9001

The completed vehicle shall undergo, prior to delivery, a two (2) hour road test with all applicable emergency equipment activated. A certification shall be provided to the purchaser outlining the results of this road test.

CARRYING CAPACITY PLATE

A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab.

Another warning label shall be provided in the cab within sight of the driver that the occupants must be seated and belted.

VEHICLE DIMENSION PLATE

A warning label shall be provided in the cab within sight of the driver stating the following apparatus dimensions:

Height and length in standard and metric measurements.
Gross vehicle weight rating in pounds and kilograms.

DIELECTRIC VOLTAGE TESTING

The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.

FLUID CAPACITY AND TYPE LABEL

A permanent label shall be provided and shall state the type and quantity of the following fluids used in the vehicle:

Engine Oil
Engine Coolant
Chassis Transmission Fluid
Drive Axle Fluid
Pump Gear Case
Primer Lubricant (If Applicable)

TIRE PRESSURE MONITORING - VISUAL

There shall be a visual six (6) wheel tire pressure system supplied that monitors all of the tires on your apparatus. A LED valve cap shall be attached to your tires valve-stem that contains a Pressure Sensor to alert you of a developing tire problem.

TRAFFIC VESTS

One (1) ANSI/ISEA compliant traffic vests shall be supplied. The vests shall have contiguous areas of retro reflective or combined-performance materials encircling the torso placed in a manner to provide 360° visibility. The vest shall a five point breakaway feature that includes two at the shoulders, two at the sides and one at the front as per NFP A requirements.

TRAFFIC CONES - COLLAPSIBLE 30"

There shall be a set of five (5) collapsible traffic cones with internal LED lights supplied. The traffic cones shall be a bright fluorescent color with reflective collars and constructed of durable polyethylene and nylon. The

cones shall be a minimum height of 30" when the cone is extended and shall collapse to 2" in height. The traffic cones shall have a solid rubber base and a carrying case shall be supplied for storage.

HELMET HOLDERS

There shall be five (5) Zico helmet holders supplied with the apparatus. The helmet holder shall comply with the 2009 edition of NFPA 1901 for use inside of crew cabs. It holds both traditional and contemporary style helmets without any adjustment needed.

CHASSIS SPECIFICATIONS

An International four door chassis shall be supplied as per the attached specifications.

Options Price for Freightliner Chassis \$1,500.00 See chassis section for option specification.

ON SPOT AUTO TIRE CHAINS

A set of On Spot automatic tire chains shall be installed at the rear tires. The automatic tire chain system shall be air actuated from the chassis air system, and shall be controlled with an activation switch located in the cab within easy reach of the driver.

DIESEL FUELED COOLANT HEATER

A Webasto DBW 2010 heating system shall be installed.

Volume flow of the circulation pump shall be 1600 liters per minute at 0.15 bars.

The heat output shall be 45,000 BTU.

Fuel consumption shall be 1.5 liters per hour

The heating system shall keep engine coolant at premium operating temperature while the unit may be at idle or while the engine is not running. Coolant then keeps any on-board coolant heater operating at maximum efficiency.

110 VOLT CAB/CREW 6 OUTLET POWER BAR

One (1) 6 outlet power bar(s) shall be installed in the chassis cab as per the fire departments specifications. The outlet shall be CSA approved.

The power bar(s) shall be tied to a cab exterior receptacle or optional power relay tied to an optional external 120V generator.

CHASSIS WHEELS

The chassis wheels shall be painted by the chassis supplier and the color shall be specified in the chassis specifications.

CHASSIS PREPARATION

The chassis shall be carefully inspected for compliance to the required specifications and to assure that it is ready for apparatus construction.

Any components that require relocation or modification shall be done at this time.

EXHAUST SYSTEM

The chassis exhaust system shall be routed behind the rear axle of the apparatus.

EXHAUST SYSTEM HEAT SHIELD

Where the chassis exhaust piping passes under or near a body compartment, the exhaust piping shall be shielded to prevent compartment exposure to radiant heat.

FRONT AND REAR MUD FLAPS

Four (4) heavy duty rubber rear mud flaps shall be provided and installed on the apparatus. The mud flaps shall be installed behind the front and rear wheels.

SCBA AIR BOTTLE BRACKET(S) - CHASSIS CAB

Four (4) Zico Load and Lock Walk Away SCBA air bottle holder bracket(s) shall be provided and installed in the chassis cab seating area.

CHAINED IGNITION KEY

The key utilized for the ignition shall be securely chained to either the steering column or the cab dash to prevent loss or removal of the ignition key.

BATTERY CHARGER PACKAGE - 18AMP

The following components shall be installed:

Battery Charger - Kussmaul - Pump Plus 1000 PLC

A Kussmaul Pump Plus1000 Series Model #091-215-12-PP, 15 amp battery charger and 3 amp Battery Saver shall be installed.

The Pump Plus 1000 with Parasitic Load Compensation (PLC) is a compact, microprocessor controlled, completely automatic, single channel battery charger designed for vehicles with a single battery system. The PLC charger is designed to withstand the shock and vibration encountered by vehicle mounted equipment. The Battery Saver component shall eliminate drain on vehicle's battery system when vehicle is not in use. The system shall automatically disconnect auxiliary vehicle loads from battery when the charger is energized. Parasitic Load Compensation feature is designed especially to meet the heavy duty requirements of emergency vehicles. Parasitic load compensation allows you to input the total number of parasitic load amps on the vehicle. Then the charger will shift the absorption stage set point so the battery voltage will drop to the float voltage when the desired current is reached. This will lead to a longer battery life and no overcharging or overheating.

The charger shall have the following operational specifications:

- a) 120 volts AC input at 3.5 amps
- b) Battery Charger: 12 volts DC output at 15 amps
- c) Battery Saver: 3 amps 12 volt DC output
- d) 8 Pin Selector Switch on front panel
 - a. Battery Type: Lead-Acid, Gel Cell, AGM or Odyssey
 - b. Float / 3-Step
 - c. Battery Saver ON/OFF
 - d. Parasitic Load Compensation
- e) AC power applied light on front panel
- f) System LED Status Indicator on front panel
- g) Dimensions of: 9.35" high x 5.9" wide x 4.725" deep and weighs 11 lbs.

Air Compressor - 12V - 100 PSI

The compressor shall be a Kussmaul P/N 091-9-12V 12 volt compressor.

The Auto Pump 12 volt driven air compressor shall ensure that the air brake system is properly pressurized for immediate response of the unit. A pressure switch shall regulate operation and shall automatically sense low air pressure in the brake system and restore the proper pressure. The unit shall have no interference with the vehicle mounted air compressor. The compact compressor shall have sealed bearings and a 15 amp circuit breaker installed in pressure switch assembly.

The air compressor shall have the following ratings:

- 1) 100 PSI maximum rating
- 2) Pre-set at 75 PSI "ON" and 95 PSI "OFF"
- 3) Adjustable differential range of 20 PSI to 100 PSI
- 4) Output:
 - 0.30 SCFM @ 80 PSI
 - 0.35 SCFM @ 60 PSI
- 5) Rating: 12 volt at 11 amps

Shoreline Inlet - Kussmaul Super Auto Eject - 20 Amp

A Kussmaul Super Auto Eject Model #091-55-20-120, 20 amp 120 volt shore power assembly, cover, solenoid input wire, power cord, and plug shall be installed. The 12 volt solenoid shall eject the shore power cord away from vehicle path upon sensing engine start; after ejection, the weatherproof cover snaps into position over inlet. The unit shall sequence energizing of an Auto Eject, eliminating terminal arcing when connecting and disconnecting power cord.

The unit shall have a waterproof back enclosure with watertight cable fittings, which protect mechanism from road contamination. A pre-wired 3 foot AC electrical cord and starting sense wire (side wired) shall be installed.

The assembly shall have the following dimensions: 6.17" high x 4.08" wide x 2.8" deep with 4 lb. weight.

Cover color to be yellow.

Battery Charger Remote Digital Display

The charger shall include a Model #091-199-001 single bar remote digital display.

TRANSPORTATION ROAD SAFETY KIT

The following Transportation Road Safety Kit shall be supplied.

One (1) 2.5 lb. ABC vehicle type fire extinguisher with mounting bracket.

One (1) British Columbia First Aid Kit shall be provided.

One (1) set of three (3) dual faced triangular warning flares to meet the Department of Transportation's Motor Vehicle Safety Standards.

CAB STEP LIGHTING

Each cab step shall be illuminated by Tecniq P/N E03 LED lights to meet the requirements of NFPA 1901.

There shall be a one inch wide reflective stripe applied to the front of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

There shall be reflective striping applied to the interior chassis cab doors of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

PUMP HOUSE

The pump house shall be a full frame module constructed from 2" x 2" x .188" and 3" x 3" x .25" (6061-T6 / 6063-T6) heavy-duty structural aluminum extrusions which shall provide maximum strength and durability.

The pump house shall be manufactured separately to allow for movement and flexibility.

The pump house shall be attached to the chassis frame with .25" thick heavy-duty mounting plates and .5" grade 8 cadmium plated bolts with self-locking nuts. A transition bracket with rubber mounts shall be installed to the chassis frame. The pump house shall then be mounted to the rubber mounts.

The front and rear of the pump house shall have 1/8" 3003 H14 Hi Shine checker plate trim.

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

PUMP HOUSE FINISH

The pump house shall come with a natural aluminum finish that has been sanded.

HEAT PANS

The bottom of the pump house shall be fitted with a heat pan. The heat pan shall enclose all sides, front, and rear and bottom of the pump house.

The heat pan vertical side walls shall be constructed from 1/8" 5083-H321 salt water grade sheet aluminum and shall be installed to the underside of the pump house.

CONTROL PANEL - SIDE

The pump operator's panel and the right side pump panel shall be constructed from #4 finish 14 gauge stainless steel. Both the right side and left side pump panels shall be bolted to the pump house for ease of removal.

The pump operator's panel shall be manufactured in a two-tier design.

The bottom/lower tier (portion) shall be screwed into place and can be removable for servicing. The lower level contains all the valve controls, discharges, suction, drains, etc. All suction and discharge ports exiting through the panels shall be laser cut to provide a smooth exact fit. No cover overlay plates shall be used.

The top tier (portion) of the panel shall be bottom hinged with a stainless steel piano hinge and shall have two (2) lift and turn twist lock latches located at the top of the panel for pump and gauge servicing. This panel shall contain all gauges and monitoring instruments.

All gauges and controls shall be symmetrically and logically laid out to easily enable the pump operator to monitor all aspects of pump operation.

All valve controls shall be made by use of heavy-duty steel rods, pivots, and Class I operators.

Auxiliary suction valve controls shall be lever controlled adjacent to the suction swivel. The auxiliary suction valve shall be installed behind the pump panel. **(Mandatory Requirement)**

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

MASTER GAUGE TEST PORTS

The pump operator panel shall come with Class 1 P/N 121384 vacuum and pressure testing ports.

PUMP BYPASS CONTROL

A Class 1 P/N 105120 brass assembly with chrome plated zinc handle petcock control valve shall be mounted at the pump operator panel to allow tank water to re circulate thru the pump. The port size and plumbing shall be 1/4"

AUXILIARY HEAT EXCHANGER

There shall be an auxiliary heat exchanger mounted on the chassis. The heat exchanger will allow tank water to cool the chassis engine.

The heat exchanger shall be operated by a Class 1 P/N 105120 brass assemble with chrome plated zinc handle petcock control valve. This valve shall be mounted at the pump operator panel. The plumbing to the auxiliary heat exchanger control valve shall be 1/4".

CROSS LAY HOSEBED

Two (2) cross lay hose beds shall be provided and installed transversely above the pump house and shall have vinyl hose matting flooring to allow for water drainage and air movement under the hose. A 3/16" aluminum divider shall separate the hose beds. Each hose bed shall be sized to hold 200' of 1 3/4" hose.

CROSS LAY PLUMBING - 1.5" DISCHARGE

The plumbing on the 1.5" discharge(s) shall be heavy duty piping with Victaulic and Class 1 SBR synthetic rubber hose with stainless steel couplings.

Each discharge shall be equipped with a 90 degree swivel to allow them to be used from either side of the apparatus.

Discharge Gauge - Dual Scale

A 2.5" discharge gauges shall be mounted adjacent to the discharge valve control handle. A removable bright metal or color coded trim ring meeting NFPA's requirements for color coding shall be supplied.

The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem (no exceptions).

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

THREAD TYPE - DISCHARGE 1.5"

All 1.5" thread types shall be NPSH.

Akron Style 8820 Swing - Out™ Valve

The valve shall be Akron Brass Style 8820 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

CROSS LAY TARP

A heavy duty vinyl tarp cover shall be provided over the cross lay compartments and held in position with a combination of shock cord fastener and 1/4 turn fasteners. The vinyl tarp shall be red in color.

PUMP HOUSE RUBBER SEAL

There shall be a rubber foam cell permanently mounted between the pump house and the body for maximum pump house heat retention. The seal shall be mounted vertically down the height of the pump house, one each side.

CANOPY / PUMP HOUSE ENCLOSURE HEATERS

Two (2) 17,500 BTU forced air coolant heaters shall be installed.

The heaters shall be mounted low in the pump house so that the heat will be distributed evenly in the pump house and will keep the drain lines open. A two speed switch shall be mounted on the pump panel for operation of the heaters.

PUMP PANEL LIGHTS - LED - SIDE PANEL

There shall be a total of four (4) 6.5" x 3" Tecniq E10 clear LED dome lights, (two (2) each side) to adequately illuminate the side pump panels. The lights shall be mounted under a protective hood of the same material as the side pump panels. The lights shall be activated by a switch at the pump operator panel.

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

Fire Research PumpBoss series PBA400-A00 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8". The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored engine information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific wiring. Inputs from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:

- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Check engine and stop engine warning LEDs
- Engine oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display

Pressure and RPM operating mode LEDs

Pressure / RPM setting; shown on a dot matrix message display

Throttle ready LED.

A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

High Battery Voltage

Low Battery Voltage (Engine Off)

Low Battery Voltage (Engine Running)

High Transmission Temperature

Low Engine Oil Pressure

High Engine Coolant Temperature

Out of Water (visual alarm only)

No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor and monitoring pressure display shall be programmed at installation for a specific engine.

MASTER PRESSURE AND INTAKE GAUGES - DUAL SCALE

Two (2) 4.5" master pump gauges shall be supplied and mounted in close proximity to the throttle, primer, and engine instrumentation. The intake gauge shall be to the left of the discharge gauge. Bright metal trim rings shall be supplied with each gauge.

They shall be fully filled with pulse and vibration dampening Inter lube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation. The Zytel nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

WATER TANK VOLUME INDICATOR

Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

CAB MOUNTED WATER TANK INDICATOR

Fire Research TankVision model WLA205-A00 miniature tank indicator shall be installed in the cab. The indicator shall show the volume of water in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive blue label.

The miniature indicator shall receive input information over a single wire from a Fire Research TankVision primary indicator model WLA200-A00, WLA300-A00 or WLA400-A00.

Location in cab of water tank indicator shall be: on dash

WATER TANK VOLUME REMOTE INDICATOR

Two (2) Fire Research TankVision model WLA280-A00 tank remote indicator shall be installed. The indicator shall show the volume of water in the tank on Ninety six (96) easy to see super bright Tri-color LEDs. The indicator case shall be waterproof, manufactured of Polycarbonate material with an integrated lens. The package includes a rubber gasket.

The remote indicator shall receive input information over a data link from a Fire Research TankVision primary indicator model WLA200-A00, WLA300-A00 or WLA400-A00. The remote indicator shall indicate the level as a single color in Red for 25% or less, Amber color for up to 50% volume, Blue color for up to 75% volume and Green color for up to 100% volume. When the level reaches 25%, the red LEDs will begin flashing. When the level is empty, the red LEDs will scroll in a down-chasing motion and then flash three times. It shall have the program capability to adjust the brightness level for day time and nighttime viewing.

DARLEY HM 500 PTO PUMP

The pump will be a Darley HM 500 PTO driven, 500 GPM single stage pump with the following capacities:

500 GPM @ 150 PSI

350 GPM @ 200 PSI

250 GPM @ 250 PSI

Gears

1-1/2 face, helical design that reduces noise and minimizes wear. All gears shall be precision-cut from heat treated alloy steel.

Drive Shaft

The drive shaft shall be precision ground heat treated, alloy steel with a 1", 10 spline.

Bronze Alloy Impeller

The impeller shall be accurately balanced and splined to the pump shaft for a precision fit. Double seal ring design eliminates end thrust.

Impeller Seal Rings

Renewable double labyrinth type cast from solid bronze.

Stainless Steel Pump Shaft

The pump shaft shall be corrosion resistant, precision ground, and splined for broached impeller hubs, to resist wear, vibration, corrosion and torque. Long wearing hard ceramic coating under the packing glands fight friction.

Stuffing Box

The stuffing box shall be packed with plastallic packing injected from an external supply cylinder by a simple injection screw. Pressures are equalized around the shaft. The short length of packing in contact with the shaft minimizes friction and heat. Removing the plunger and inserting a new packing pellet may renew the packing.

Deep Groove Radial Type Ball Bearing

An oversized ball bearing is provided for longer life. All openings shall be protected from road dirt and water with oil seals and water slinger.

Pump Casing

An alloy cast iron with bronze fittings is standard. The case is the vertically split design.

Transmission Case

The transmission case is an alloy cast iron with a reserve oil capacity.

Lubrication

The proven and dependable splash type that eliminates the need for a gear driven lubricant pump provides lubrication

Master Drain Valve

A single central master drain valve, draining the pump and all water carrying lines shall be provided. The valve control shall be clearly labeled and installed at the left side pump panel.

PUMP OPERATION WARNING LABEL

There shall be a warning label mounted on the pump operator's panel that states the following:

Warning: Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.

DARLEY MECHANICAL SEAL

The pump shall come with a mechanical seal.

PTO PUMP – PUMP AND ROLL

The PTO pump shall be used for stationary pumping and also for pump and roll operations.

DARLEY ROTARY VANE PRIMER

The pump primer shall be a positive displacement type, electrically driven by the chassis 12 volt electrical system. This primer shall be heat treated aluminum alloy and hard coat anodized for long life.

This primer system shall use a lubricant reservoir and bronze pull panel valve switch for automatic motor control.

PRIMING SYSTEM LABEL

The priming system shall be marked with a label to indicate proper operation.

4" MAIN SUCTION MANIFOLD - STAINLESS STEEL

There shall be a total of two (2) 4" main inlets on each side of the pump house.

The plumbing for the two (2) main suction inlets shall be single piece design manufactured from schedule 10 stainless steel with schedule 40 threaded fittings.

The suction manifold shall be bolted to the pump utilizing heavy duty grade 8 bolts for firm vibration free installation. A victaulic coupler is not acceptable. **(Mandatory Requirement)**

AUXILIARY SUCTION - ROAD SIDE

One (1) 2-1/2" gated inlet(s) shall be provided at the left side pump panel. The inlet(s) shall come complete with a chrome female swivel threaded adaptor. There shall be a chrome cap with the inlet(s) and the cap shall come with a chain that is attached to the pump operator panel.

The plumbing shall be schedule 10 stainless steel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

SUCTION RELIEF VALVE

A 2-1/2" Elkhart model 40-20 flange mounted adjustable suction relief valve shall be provided and installed in the suction side of the pump. The discharge side of the valve shall be plumbed to the area below the running board, away from the pump operator, and shall terminate with a 2-1/2" NST male threaded adapter, marked

"INTAKE PRESSURE RELIEF OUTLET-DO NOT CAP". The relief valve shall have an adjustable working range of 75 PSIG to 250 PSIG and be pre-set at 125 PSI.

TANK FILL LINE - PUMP TO TANK

There shall be a 2" discharge provided at the pump operator panel for a pump to tank line.

Akron Style 8820 Swing - Out™ Valve

The valve shall be Akron Brass Style 8820 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

DISCHARGE MANIFOLD - STAINLESS STEEL

All plumbing for the discharge manifold and discharge plumbing shall be schedule 10 stainless steel with schedule 40 threaded fittings. In some cases, heavy duty, high pressure, wire reinforced flexible hose with stainless steel couplings shall be utilized for plumbing connections.

Victaulic couplings shall be used on the plumbing lines to take tension off piping and to permit flexing and movement without damage to the pump and its components.

Heavy duty U-bolt clamps and bracing shall be used on all plumbing lines and connections were required for firm vibration free installation.

TANK SUPPLY LINE

A 4" tank supply line shall be installed from the tank to the pump. A 3" check valve shall be installed in the pump to eliminate the possibility of pressure expanding and damaging the tank.

Butterfly Valve

The valve shall be a 3" manually operated butterfly valve.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

2.5" DISCHARGE - LEFT SIDE

One (1) 2.5" gated discharge(s) shall be provided at the right side pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel. A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Discharge Gauge - Dual Scale

A 2.5" discharge gauges shall be mounted adjacent to the discharge valve control handle. A removable bright metal or color coded trim ring meeting NFPA's requirements for color coding shall be supplied.

The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem (no exceptions).

The gauges shall be in dual scale and measure in increments of 0-400 psi and 0-2800 kPa.

Akron Style 8825 Swing - Out™ Valve

The valves shall be Akron Brass Style 8825 Swing-Out™ Valves. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. All stainless steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. Product must carry a 10 year manufacturer's warranty.

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

2.5" DISCHARGE - CURBSIDE

One (1) 2.5" gated discharge(s) shall be provided at the curbside pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. **(Mandatory Requirement)**

Discharge Gauge - Dual Scale

A 2.5" discharge gauges shall be mounted adjacent to the discharge valve control handle. A removable bright metal or color coded trim ring meeting NFPA's requirements for color coding shall be supplied.

The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem (no exceptions).

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Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" Synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

500 GPM REMOTE CONTROL MONITOR

Task Force Tips Tornado model # Y2-E84A electric remote controlled monitor shall be installed. The monitor shall be controlled by a monitor mounted membrane switch panel with functions that control rotation, elevation and nozzle patterns, oscillate, park, auxiliary 1 and auxiliary 2.

The monitor shall have the following travel capabilities: full horizontal rotation with travel 185 degrees left and right of center, full 135 degrees of vertical travel with field changeable vertical stops at 45 degrees above and 20 degrees below horizontal, field changeable rotation stops shall be provided 90 degrees left and right of center, flow capability of 500 GPM with no more than 25 PSI loss, maximum operating pressure of 200 PSI.

The electrical components for the monitor shall be waterproof and utilize current limiting and position encoders to protect the drive train at the ends of travel. Monitor shall have waterproof plug for power and control cable connection for easy removal. An electrical connection for a TFT remote control nozzle shall be provided. The monitor shall be compatible with optional wired and wireless control panels and monitor position display. The monitor shall be equipped with manual override knobs for use in the event of power failure.

For resistance to corrosion the monitor shall be constructed from hardcoat anodized aluminum with a silver powder coat interior and exterior finish.

The monitor shall be configured with a 2" female NPT inlet with quick disconnect with locking pin and 1-1/2" male NH outlet. The unit shall be covered by a five-year warranty.

FRONT BUMPER TURRET MOUNT

The front bumper shall have an aluminum mounting structure for a front turret. Structure shall be painted body color with checker plate trim.

There shall be a Class 1 digital pressure gauge installed in the chassis for the front bumper turret. A weatherproof transducer (transmitter) shall be supplied and mounted in the appropriate location in the piping system. The individual transducers shall be connected to the readout using the appropriate wiring in strict accordance with the instructions supplied by Class 1.

A combination of 2" heavy-duty stainless piping and Class1 SBR synthetic rubber hose with stainless steel couplings shall be routed from the pump to the remote monitor. The piping shall come equipped with an automatic drain.

There shall be a TFT Y4E-CT-30 monitor operator station mounted in the chassis cab. The monitor shall come with a 30' tethered electrical cable.

REMOTE MONITOR VALVE KIT

Task Force Tips model # YE-VK-PH electric valve kit for Tornado series remote control monitors shall be installed. The valve package shall include a stainless steel valve with controller mounted on valve, and an interface box for connection of joystick control, monitor and power. The valve kit electrical components shall be compatible with 12 or 24 volt direct current.

The enclosure shall be weatherproof and utilize weatherproof components such as a silicone seal, hardware with o-rings and liquid tight electrical connections with strain relief fittings.

The valve shall have 2" NPT female inlet and outlet, stainless steel ball and housing, valve position indicator, and two-conductor cable with waterproof plug for connection to enclosure valve control cable. The valve kit shall be covered by a written five-year warranty.

REMOTE ELECTRIC NOZZLE TIP

Task Force Tips Ultimatic 125, model # B-TO-ERP automatic nozzle with electrically operated pattern control shall be provided. The nozzle design shall allow for straight stream through dense wide fog patterns and be able to be flushed without shutting down.

The electric drive unit shall develop over 400 pounds of torque, be enclosed in a waterproof cast aluminum housing and include a manual override device in the event the power source fails. The unit shall be compatible with 12 or 24 volt power systems and require no more than a 3 amp power draw and include a 6" connection cable with plug.

Nozzle stream shaper actuator shall have position encoder for smooth transition between straight stream and fog pattern with fine stream adjustment. Nozzle stream shaper shall stop and pause at full fog position. A second electrical actuation of the stream shaper shall move the shaper to the flush position for removing debris from the nozzle.

For corrosion resistance and durability the nozzle shall be constructed from hard coat anodized aluminum alloy, a protective rubber bumper with fog teeth, laser engraved serial number, reflective labeling and five year warranty.

The nozzle shall have a 1-1/2" female NH swivel rocker lug coupling and a flow range of 10-125 GPM at 100 PSI. A waterproof six-pin electrical connection for use with TFT remote control monitors shall be included. The nozzle shall be designed to accept the TFT FJ-U or FJ-UMX FoamJet low expansion air aspirating attachments.

THREAD TYPE - DISCHARGE 2.5"

The threads that shall be provided for the 2.5" Discharges and 2.5" Suction Inlets shall be NST style.

DARLEY BUTTERFLY MAIN SUCTION INTAKE VALVE - Left Side

The left side main pump inlet shall be equipped with a full flow butterfly type valve designed to mount on the fire pump between the suction tube extension and the suction tube behind the left side pump panel.

This valve will be provided with a panel placard indicating control operation. The placard shall have an indicator plate to indicate whether the valve is open, closed or traversing from one position to another.

This valve shall be provided with a hand wheel type gear actuator that will cycle the valve from open to closed position in no less than three seconds. The gear actuators shall be sealed units designed to provide reliable service in the harsh pump compartment environment.

Additionally, a suction relief valve shall be installed into the main suction tube valve/suction tube assembly. This relief valve shall be adjustable to conform to specific Department requirements.

DARLEY BUTTERFLY MAIN SUCTION INTAKE VALVE - Right Side

The right side main pump inlet shall be equipped with a full flow butterfly type valve designed to mount on the fire pump between the suction tube extension and the suction tube behind the left side pump panel.

This valve will be provided with a panel placard indicating control operation. The placard shall have an indicator plate to indicate whether the valve is open, closed or traversing from one position to another.

This valve shall be provided with a hand wheel type gear actuator that will cycle the valve from open to closed position in no less than three seconds. The gear actuators shall be sealed units designed to provide reliable service in the harsh pump compartment environment.

Additionally, a suction relief valve shall be installed into the main suction tube valve/suction tube assembly. This relief valve shall be adjustable to conform to specific Department requirements.

BOOSTER TANK

The booster tank shall have the following capacities:

1000 Imperial gallons
4546 Liter

This tank shall be provided with a lifetime warranty tank manufacturer.

The transverse and longitudinal swash partitions shall be manufactured of Polypropylene Copolymer material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules. All

swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of .5" thick Polypropylene Copolymer and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a .25" thick removable Polypropylene Copolymer screen and a Polypropylene Copolymer hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum I.D. of 4", unless a dump chute is included in the design in which case the I.D. shall be 6". Both shall be of a design to run through the tank. The tank overflow shall be piped behind the rear wheels.

The tank cover shall be constructed of recessed .5" thick Polypropylene Copolymer, stress relieved, U.V. stabilized material. A minimum of two lifting dowels shall be drilled and tapped .5" x 2" to accommodate the lifting eyes.

There shall be one (1) sump standard per tank. The sump shall be constructed of .5" Polypropylene Copolymer and be located in the left front corner of the tank and shall meet the requirements of NFPA.

There will be two (2) standard tank outlets: one for tank to sump suction line and one for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 G.P.M.

The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .25" x 2" and a minimum Rockwell hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and capture both front and rear as well as side to side to prevent tank from shifting during vehicle operation.

The tank shall be mounted in the apparatus body in a manner that the total outside bottom perimeter of the tank shall be supported. The bottom of the tank shall be completely isolated from the frame by heavy-duty .25" thick rubber strips. There shall be a picture frame type cradle mount system utilized for the purpose of capturing the tank. There shall be a support system across the top of the tank to prevent excessive bouncing when the tank is empty.

Although the tank is designed as a free-floating suspension unit, it is required that the tank has adequate hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on the top of the tank, halfway between the front and rear on each side of the tank.

The tank shall be completely removable without disturbing or dismantling the apparatus structure.

TANK DRAIN

The tank shall have a 1.5" tank drain installed in the bottom of the tank and accessible from the ground.

ROLL OUT TRAY(S)

Four (4) heavy duty ball bearing roll out tray shall be provided.

The tray(s) shall have two (2) side mounted, 500 lb. rated ball bearing roll out 18" travel sliding tracks and a 3/16" aluminum tray with up turned edges. The tray shall be supplied with plastic floor matting and corner drain holes.

The tray(s) shall have a drop bar tray retainer to keep the tray secure in either the open or closed position.

All trays shall come with rubber matting.

SCBA AIR BOTTLE BRACKET(S) - BODY

Four (4) SCBA air bottle holder bracket(s) shall be provided and installed on a body compartment wall as specified by the Fire Department.

The SCBA bracket(s) installed in the compartment shall come with Zico Yellow SCBA bottle tie down straps.

APPARATUS BODY

The body shall be fabricated with the highest quality components available, and acceptable to the fire service industry. Only new components shall be in the manufacturing process.

The body shall be engineered and designed to provide a low center of gravity and carry a correct load distribution.

The entire body superstructure and sub frame shall be constructed of heavy-duty tubular aluminum and channels to provide a full frame body design.

The use of tubular aluminum and channels shall provide for extreme strength, maximum durability, and maximum resistance to buckling and failure.

The full frame body construction method shall provide for greater strength and integrity. Formed body construction shall not be acceptable.

All compartments shall be fabricated with 1/8" aluminum panels, salt-water marine grade 5083-H321, which are inserted into the body framework. The framework allows for reinforcement to the compartment, for installation of heavy equipment. The 1/8" aluminum panels, salt-water marine grade 5083-H321 panels shall provide extreme strength, rust corrosion resistance, and maximum durability.

Skilled craftsmen shall perform all welding operations on the body. All welding shall be electronically with the highest quality components.

Certified welders shall perform all welding. Proof of welder certification shall be provided with the completed vehicle.

BODY SUBFRAME

The body framework shall be assembled on a jig, and shall be clamped together and squared. The framework shall be electronically welded with digital pulse welders forming the integral superstructure.

The body frame rails shall be constructed of 6061T6/6063-T6, 3" x 3" aluminum extrusions, with a wall thickness of 1/4".

The front cross member shall be a heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability.

The two middle cross members shall be heavy duty 3" x 3" x 1/4" aluminum extrusions providing maximum strength and durability at the main section of the body.

The rear cross members shall be heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability at the rear section of the body.

The two middle cross members shall extend the full width of the body. The cross members shall provide support for the body side compartments section.

The body sub frame and the chassis frame shall be insulated and separated by a rubberized belt.

There shall be rear drop sub frame bolted to chassis frame made from formed heavy steel rails.

The body shall be mounted to the chassis frame rails with two double flex mounts at the front, two steel channels in the middle, bolted to the chassis frame at the rear end of chassis frame and four single flex mounts at the drop frame. This shall provide for maximum mounting strength and flexibility.

CORROSION PROTECTION

All body components or attachments made from dissimilar metals shall be fastened to the body utilizing an UHMW/Polyethylene material to prevent metal-to-metal contact preventing dielectric corrosion.

All fasteners used in attaching or fastening or aluminum panels shall be installed with stainless steel hardware. Rivets shall not be acceptable. **(Mandatory Requirement)**

All fasteners shall be installed in a manner, which shall involve drilling, tapping, and application of non-corrosive grease before the stainless steel bolts are installed. Self-tapping screws or screws without threads shall not be acceptable. **(Mandatory Requirement)**

HOSE BED

The main hose bed shall be located above the booster tank and be sized to meet the requirements for a Pumper Fire Apparatus as specified in NFPA 1901 (Latest Edition) and ULC S515-13

The inner sides of the hose bed shall be natural finish aluminum smooth plate free of protrusions and obstructions.

There shall be three (3) Aluminum unistrut tracks for the optional hose bed divider(s), two (2) at the forward section of the hose bed, and one (1) at the rear.

The rear track shall have come with 10' of snap cover to prevent the hose couplings from catching the track. The snap cover shall be shipped loose for customer installation after the hose bed dividers have been set up.

HOSE BED MATTING

The hose bed flooring shall be fitted with vinyl type matting to allow for air movement under the hose.

HOSE BED DIVIDER - ADJUSTABLE

There shall be one (1) adjustable hose bed divider provided.

The divider shall be easily adjustable in the hose bed slide tracks.

Each divider shall be constructed from 3/16" 5083-H321 salt water marine grade aluminum which shall be welded into a custom aluminum extrusion base frame.

Each hose bed divider shall have an oval handhold provided at the rear portion of the divider.

HOSE BED TARP

One (1) vinyl hose bed tarp shall be provided with shock cord fasteners or depending on hose bed obstructions, a combination of shock cord fasteners and nickel plated quarter turn fasteners for the main hose bed. The hose bed tarp shall have an end flap with Velcro fasteners provided to cover the rear of the hose bed. The tarp shall be red in color.

COMPARTMENT MATTING

There shall be versatile PVC matting supplied on the all body compartment floors. The matting shall be interlocking and 1" high to allow for air movement.

REAR FENDERS

The rear fenders of the apparatus shall be fully removable to allow for servicing of the apparatus suspension system.

The rear fender outer skin shall be fabricated from 1/8" 3003-H14 hi shine aluminum checker plate. The inner wheel well shall be fabricated from 1/8" 5083-H321 salt water grade aluminum.

The fender shall be attached to the body using stainless steel screws. The screws shall be pre tapped before installation. Self tapping screws are not acceptable.

All dissimilar metals shall receive a strip of UHMW isolation tape for corrosion resistance.

REAR BODY SECTION - NATURAL FINISH ALUMINUM

The rear section of the apparatus body shall be finished with 1/8" 5083 H321 aluminum plate panels. The panels shall have a natural finish for installation of Chevron. The panels shall be fastened to the rear body framework with stainless steel fasteners. The stainless steel fasteners are drill tapped. Sheet metal screws or self tapping screws are not acceptable. **(Mandatory Requirement)**

COMPARTMENT MATTING

There shall be versatile PVC matting supplied on the all body compartment floors. The matting shall be interlocking and 1" high to allow for air movement.

LEFT SIDE BODY COMPARTMENTS - HIGH

The following compartments shall be provided on the driver's side of the apparatus body.

One (1) compartment forward of the rear wheel measuring 48.25"W x 69"H x 15"/27"D frame opening.

One (1) compartment over the rear wheel measuring 62.25"W x 40"H x 15"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 69"H x 15"/27"D frame opening.

The body compartments shall be fabricated with 1/8" 5083 marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (**Mandatory Requirement**)

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

HARD SUCTION HOSE MOUNTING

Suction hose storage for two (2) lengths of hard suction hose shall be installed above the body compartments. One rack shall be installed above the left side body compartments and the other rack shall be installed above the right side body compartments.

The hose troughs shall be fabricated from polished custom aluminum extrusions. The hose shall be fastened to the tray with heavy duty type Velcro Straps.

HARD SUCTION HOSE - KOCHEK

Two (2) ten foot section(s) of 4" Kochek PVC lightweight, flexible, hard suction hose shall be provided with lightweight male and long handle female threaded couplings.

BARREL STRAINER

One (1) 4" Kochek barrel strainer shall be provided and shipped loose with the completed vehicle.

RIGHT SIDE BODY COMPARTMENTS

The following compartments shall be provided on the curbside of the apparatus body.

One (1) compartment forward of the rear wheel measuring 48.25"W x 40"H x 15"/27"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 40"H x 15"/27"D frame opening.

The body compartments shall be fabricated with 1/8" 5083 salt water marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment. (**Mandatory Requirement**)

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

AMDOR ROLL UP DOORS

The doors shall be Amdor Roll-Up type doors to include: double wall aluminum box section slats with integral hinge joint and recessed slat seal, reusable end shoes with snap-in securement, double wall aluminum reinforced bottom rail with either Stainless Steel Lift Bar door latching system, aluminum track with side frame, sill plate, and top gutter with non-marring top seal, side seals, bottom seal, with all wear component material to be Type 6 Nylon.

The slats shall have a true box section with a flat interior surface to prevent equipment hang-up. The slats shall have a face depth of 1.0 inches and a wall thickness of 0.045 inches. Each slat incorporates a recessed slat seal to weatherproof the compartment and reduce rattle between slats.

For every inch of height an integral continuous hinge joint spans the width of the door to provide superior strength.

The door glides on non-interlocked end shoes. Each end shoe is independent and positively secured by an exclusive snap-in device. Door slats can be easily removed and replaced when required.

The Stainless Steel Lift Bar system shall be provided to keep the door securely closed. This system complements the superior strength of the bottom rail with bottom seal and integral reinforcing flange.

Wear components are constructed of Type 6 Nylon to provide maximum strength and durability. Type 6 Nylon is a naturally lubricating material, which provides exceptional temperature characteristics.

Each door is equipped with slat, top, bottom and side seals to keep moisture and dirt on the outside. The non-marring top seal provides a seal without marking the door surface.

The compartment door at the L1 location shall be Amdor roll up style.

The compartment door at the L2 location shall be Amdor roll up style.

The compartment door at the L3 location shall be Amdor roll up style.

The compartment door at the R1 location shall be Amdor roll up style.

The compartment door at the R2 location shall be Amdor roll up style.

COMPARTMENT SHELVING - ADJUSTABLE

Four (4) adjustable 3/16" aluminum compartment shelves with upturned edges shall be provided. Each shelf shall be provided with plastic matting.

ADJUSTABLE SHELVING UNI-STRUT SIDE TRACKS

Four (4) set(s) of four (4) aluminum unistrut side tracks shall be provided for installation of adjustable shelves.

RUB RAILS - APPARATUS BODY

Three inch "C" channel aluminum rub rails shall be bolted into place with nylon spacers on the lower framework below the apparatus body compartments. The rub rail will extend to the outside edges of the apparatus body for protection of the body from impact damage.

COMPARTMENT LIGHTS - LED

All body compartments shall have LED lights activated by a switch. The LED compartment lights shall be flush mount and provide a consistent 120 degree wide beam pattern. There shall be a minimum of two strip lights installed in each compartment.

FIREMAN'S FRIEND - 4" EXTERNAL TANK FILL - REAR RIGHT

There shall be a 4" external tank fill with a Storz fitting provided at the rear right of the apparatus body.

The internally mounted check-type fill valve shall be capable of flowing at a rate in excess of 1,000 gallons per minute. The internal valve shall be self deflecting, requiring no additional diffusion device. The check valve shall be stainless steel and a spring actuated piston-type sealing mechanism to minimize seal wear and provide positive sealing of valve after shutting off at feed source. Valve seal designed to be self-cleaning, utilizing EPDM rubber.

The valve body shall have a mounting plate and the TTMA 6-bolt attachment pattern (2 1/2" to 3" valve body) positioned on outside of and attached directly to tank wall. All valve components constructed of highly corrosive resistant stainless steel. External attachment fitting corrosion resistant aluminum. Available with connections from 2 1/2" to 5" fittings.

10" NEWTON DUMP VALVE - 180° DEGREE SWIVEL

One (1) 10" Newton "Quick - Dump" with manual valve shall be provided at the rear of the apparatus. This valve shall extend out the center of the rear body with the control lever offset to the left side of the dump valve. The telescopic dump chute shall have a dimension of 8"H x 12.5"W to allow for a maximum dump rate and extend up to 36". The chute shall have the capability of swinging 180° so it can be used on the left, rear and right side of the truck.

A Newton manually operated telescoping extension chute shall be provided for the dump valve.

The dump chute shall be painted to match the apparatus color

REAR TOW EYES - PAINTED

Two (2) heavy duty painted tow eyes shall be bolted directly to the rear frame rails.

These tow eyes shall be easily accessible from the rear of the apparatus body.

TAILBOARD

A heavy-duty 8" deep tailboard shall be provided

The tailboard shall be covered with slip resistant 3/16" embossed checker plate. The aluminum checker plate shall be bolted to the tailboard sub frame with non-corrosive stainless steel bolts. The bolt on aluminum tread plate shall allow for easy removal for service.

The forward section of the tailboard shall be gapped to allow washing without dirt being trapped and for the drainage of accumulated water.

BODY HAND RAIL

The following handrails shall be installed on the apparatus body.

Two (2) 48" handrails mounted vertically on the rear.

One (1) 42" handrail mounted horizontally on the upper rear for hose bed access.

One (1) 12" mounted on the roadside upper rear hose bed area

The body hand rail shall be 1 1/4" in diameter and shall be knurled aluminum for maximum grip and safety

The hand rail shall be installed and supported with chrome plated polished cast brackets.

The hand rail brackets shall be provided with an isolation gasket and held in place with stainless steel bolts.

CAST STEPS - CURB SIDE REAR

One (1) cast aluminum fixed cast steps shall be installed on the curb side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

CAST STEPS - ROAD SIDE REAR

Three (3) cast aluminum fixed steps shall be installed on the road side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

FOLDING STEPS - ROAD SIDE FRONT

One (1) folding aluminum steps shall be installed on the road side front of the apparatus.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

STEP LIGHTS - LED

All steps on the body shall have adequate light for illumination. The lights shall be Tecniq EON-Linear White 2.9"W lights for folding and cast step lighting or shall be already supplied with the manufacturer supplied steps.

LICENSE PLATE ILLUMINATION

A LED light shall illuminate the rear license plate mount. the light shall come with a chrome bezel.

12V INVERTER

One (1) Tundra 12V Inverter(s) shall be tied to the chassis batteries and mounted in a dry location on the apparatus as close as possible to the chassis battery system. A remote on/off switch shall be installed in the chassis cab to turn the inverter on and off.

The inverter is designed to deliver 2500 Watts or 10 amps at 120Volts. The inverter shall have a power surge capacity of 5000 Watts for one (1) second. The inverter will operate with input voltages between 11 and 15 volts DC. If the voltage drops lower than 11.5 volts, the low battery warning alarm will sound. The inverter will shut off if the voltage drops below 11 volts to protect the batteries from being discharged. The inverter will not restart until the input voltage exceeds 13.0 volts. The inverter will shut down if the voltage exceeds 15 volts. This protects the inverter from excessive input voltage.

The inverter shall come with two (2) 120V plugins.

ELECTRICAL SYSTEM

The manufacturer shall design the wiring system for the apparatus in accordance to the SAE, Society of Automobile Engineers.

The manufacturer shall determine the circuit loads and design the system to accommodate these loads with appropriate circuit routings and relays.

All wiring harnesses shall be properly secured and routed. All passages required for routing shall be grommeted and sealed as required.

All wiring shall be easily accessible for servicing.

All wiring shall be SAE J1128 and SAE J1292 GXL type wire, as per fire industry standards.

All exposed wiring shall be crimped and heat shrunk for added protection.

The wiring harnesses shall be pre-engineered for correct circuit loading and shall be custom made. The harnesses shall be function, number, and color coded and shall be fitted inside automotive high temperature loom. All connections to the main panel box must be made with waterproof automotive style guided pin locking connectors

An enclosed main electrical distribution panel that provides protection against dirt, dust, oil, and water shall be installed in the upper section of the pump house.

All electrical connections to the panel shall be made through positive locking environmentally sealed connectors. The panel features a solid state power distribution board(s) with visual diagnostics.

All circuits are protected by automatic resetting circuit breakers. All breakers shall be properly sized to the circuit load and are direct plug in sockets.

All wiring shall have a strain pull test on wiring connections of 40 pounds.

BATTERY MASTER SWITCH

A 300 amp solenoid master battery switch shall be installed in the cab within reach of the driver.

Emergency Warning Package - Whelen - Pumper

ZONE A UPPER EMERGENCY LIGHTING

The zone A upper emergency lighting zone shall have the following:

A Whelen Justice 56" light bar (**Model: JE2NFPA**) warning system shall be furnished and rigidly mounted.

ZONE A LOWER EMERGENCY LIGHTING

The zone A lower emergency lighting zone shall have the following lights and shall be mounted to the chassis grill:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE B UPPER EMERGENCY LIGHTING

The zone B upper emergency lighting zone shall have the following:

There shall be One (1) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE B LOWER EMERGENCY LIGHTING

The zone B lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE C UPPER EMERGENCY LIGHTING

The zone C upper emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 900 (9" x 7") LED lights installed.. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE C LOWER EMERGENCY LIGHTING

The zone C lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE D UPPER EMERGENCY LIGHTING

The zone D upper emergency lighting zone shall have the following:

There shall be One (1) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

ZONE D LOWER ZONE

The zone D lower emergency lighting zone shall have the following:

There shall be Two (2) Whelen model 600 (4" x 6") LED lights installed. These lights shall have red lenses, red LED's and come with a chrome bezel.

TAIL LIGHTS - LED

There shall be a set of LED tail lights installed the rear face of the apparatus body. These lights shall include brake, turn and clear back up lights installed in chrome trim bezels.

HOSEBED FLOOD LIGHT(S) - LED

There shall be two (2) DTI model DTI-LED-R10Wx8 12V light(s) provided for hose bed and area lighting. The LED lighting shall be rated for 7200 lumens. The mounting base shall be a stainless steel mount that swivels vertically and horizontally. The lights shall be controlled from the cab and shall come with a shut off switch at the light head.

GROUND LIGHTS - LED

There shall be six (6) Luma Bar H2O 12" LED ground lights with outward facing angle brackets installed underneath the apparatus. The ground lights shall be activated by a switch installed in the chassis cab. Ground lights that are directly underneath a door opening will turn on automatically when the door is opened.

ENGINE COMPARTMENT LIGHT - LED

One (1) Tecniq EON LED light(s) shall be installed in the engine compartment. The lights shall be activated when the hood is opened.

DOOR AJAR SYSTEM

A Whelen P/N OSF00FCR LED red flashing warning light for the door ajar system shall be provided in the cab. This light shall be activated when a compartment door on the apparatus body is open.

A magnetic sensor shall be installed in all compartments with a roll up door

A On / Off depression style switch shall be supplied in all compartments with a pan door.

CLEARANCE AND MARKER LIGHTS - LED

All clearance / marker lights, reflectors shall comply with department of transport motor vehicle safety standards. The clearance / marker lights shall be LED (light emitting diode) type.

A set of LED (light emitting diode) mid body turn signals shall be installed to comply with department of transport motor vehicle safety standards for vehicles over 30 feet in length.

BACK UP ALARM

A 107db back up alarm shall be installed at the rear of the apparatus body. This back up alarm shall be activated when the chassis transmission is placed into reverse.

ELECTRONIC SIREN

A Whelen Siren Amplifier model # 295SLSA1 shall be provided. The siren amplifier shall incorporate a 12V/200W siren installed on an aluminum alloy chassis covered by a black polycarbonate powder coated

housing for maximum protection. The 295SLSA1 shall have the ability for either 100 or 200 watt output. The front overlay shall be made of velvet Lexan™ with a matte finish. The lettering and artwork on the overlay shall be illuminated with adjustable backlighting of soft LED non-glaring green. The operating controls will consist of a power switch, manual button, PA volume switch, horn button, and rotary switch. The 295SLSA1 PC board shall have input polarity protection, output short circuit protection. The siren amplifier shall include a 20A/32V fuse. The solid state siren speaker amplifier shall be vibration resistant. The microphone shall be hardwired to the 295SLSA1.

The 295SLSA1 shall have 21 Scan-Lock™ siren tones with two manual functions for additional siren tones. The siren amplifier shall have the ability to customize the placement of each siren tone with the rotary switch. The siren amplifier shall have a “Siren in Use” icon driver and adjustable preset repeat radio volume. The 295SLSA1 shall have a “Park Kill” feature that disables the siren when the vehicle is in park. The PTT (push to talk) switch on the microphone shall override all siren functions. The 295SLSA1 shall have a combination On/Off and horn ring transfer switch with Bi-polarity horn/ring activation control. The 295SLSA1 shall have SI Test® capability to perform a complete diagnostic silent test of amplifier and speaker(s). The siren amplifier shall have a quick disconnect plug. The 295SLSA1 shall have the ability to activate siren tones with “Aux Enable” input either with a slide switch, power controls, or relay-to-ground connector. The 295SLSA1 shall meet Class A requirement for SAE, AMECA, KKK1822, and California Title XII. The siren amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two year factory warranty.

SWITCH CONTROL PANEL

There shall be a Whelen model PCC6R, 6 switch control panel provided and installed in the cab for the emergency lighting.

ELECTRONIC SIREN SPEAKER

There shall be a Whelen model # SA 315P, 123db / 100 watt electronic siren speaker provided at the front bumper and connected into the electronic siren.

LIGHT TOWER

A Shadow, manufactured by Command Light, part number SL442D-FS-LED, light tower shall be provided for installation on the apparatus. The location of the light tower and its controls shall be installed according to instructions given by the customer and the requirements of the light tower manufacturer.

The light tower shall extend 49-1/2" above the mounting surface and shall extend to full upright position in less than 15 seconds. The overall size of nested light tower shall be 48" long x 30" wide x 8-1/2" high and weigh approximately 75 pounds.

Light Tower Construction and Design

The Command Light assembly shall be of aluminum construction, with stainless steel shafts and bronze bushings for long life and low maintenance.

The electrically controlled unit shall not require usage of the vehicle's air supply for operation, thereby eliminating the chance for air leaks in the vehicle braking system. Hydraulic or pneumatic type floodlights are not acceptable alternatives to the specified all electric light tower.

The light tower shall be tested to in wind conditions of 90 mph (150 kph) minimum. Other type floodlights that have not been tested to these conditions are not acceptable.

Light Tower Electrical System

The light tower shall be a single-stage device with a lighting capable of 355 degree rotation. The light shall be elevated by an electric linear actuators, the actuator shall adjust the light bank angle from 0 to 110 degrees.

The tower base shall have a light that illuminates the envelope of motion during any movement of the light tower mast as required by NFPA1901.

Light Tower Floodlights

The Command Light shall be equipped with the following bank of floodlights:

Floodlight manufacturer: FRC

Number of lamp heads: Four (4) 220W Spectra LED's

Voltage: 12 volt

Watts of each lamp head: 220 watt

Total watts of light tower: 1000 watts

Configuration: The light heads shall be mounted in two (2) on each side of the light tower, giving two (2) vertical lines of two (2) when the lights are in the upright position.

LIGHT TOWER CONTROLS

The light tower shall be controlled with a hand-held 15 foot umbilical line remote control. The storage station for the remote control unit shall be equipped with a button to activate the "Auto-Park" automatic nesting feature. The controls on the remote box shall be:

Two (2) switches for each 2 light banks.

One (1) switch for elevating /retracting the arm.

One (1) switch for rotation of the light bank.

One (1) switch to engage Auto-Park.

One (1) indicator light to indicate when light bank is out of roof nest position.

One (1) indicator light to indicate when light bank is rotated to proper nest position.

PAINT COLOR - CHASSIS

The chassis shall be painted a single color by the chassis manufacturer. This shall be the final paint color and finish for the completed vehicle.

FINISH AND PAINTING - PPG

The painting shall be done in accordance with automotive practices using Delfleet® Evolution FBCH high solids polyurethane paint with the PPG painting process.

All painting shall be baked at 160 degrees F. for a minimum 45 minutes to provide an automotive quality finish.

After assembly, the body substructure shall be deburred and hand sanded.

All ledges inside and outside shall be cleaned and sealed.

The painting process consists of the following applications:

- a) Wash entire body with DX 440 wax and grease remover
- b) Etch primer, PPG F3963 (0.2 - 0.35 mils dry)
- c) Primer, PPG F3975 (3.0 - 6.0 mils dry)
- d) Wash entire body with DX 330 wax and grease remover
- e) Primer sealer, Epoxy PPG F399x (1.0 - 4.0 mils dry)
- f) Base coat, Delfleet® evolution PPG FBCH (1.0 - 3.0 mils dry)
- g) Clear coat, PPG F3906 clear (minimum of 2.0 mils)

All outside seams that are not 100 percent welded shall be sealed and caulked inside and outside.

Only after the entire painting process is completed shall the body structures be installed on the chassis.

Only after the body is painted shall the components such as doors, aluminum inlay panels, mounting brackets, handrails, pump panels, and other accessories be installed.

COMPARTMENT FINISH

The interior of all compartments of the body shall also be sealed and caulked. A textured finish of light gray urethane paint with a dark gray spatter finish shall be applied to all compartment interiors.

4" REFLECTIVE BODY PRIMARY STRIPING

There shall be a four inch wide reflective stripe applied to the left and right sides of the apparatus according to the requirements of NFPA 1901 latest edition. The reflective stripe shall be a 3M Scotchlite product.

CHEVRON STRIPPING

There shall be 6" chevron stripping decals applied to the rear face of the apparatus. The chevron decals shall be made of high visibility Reflexite™ material that is red / yellow in color and shaped to form an "A" style pattern. A minimum of 50% of the rear body shall be covered with Chevron.

FIRE EXTINGUISHER(S) - ABC DRY CHEMICAL

One (1) 10lb ABC dry chemical fire extinguisher(s) shall be provided.

EXTINGUISHER BRACKET(S)

One (1) extinguisher mounting bracket(s) shall be provided and mounted on the apparatus.

PROTEK AUTOMATIC 1-1/2" NOZZLE

Two (2) AUTOMATIC 1-1/2" NOZZLE PROTEK 323,70-200 GPM, 1-1/2" NPSH C/W. PISTOL GRIP

WRENCH SET(S)

One (1) Akron #2443 spanner wrench set(s) complete with two (2) spanner wrenches, one (1) hydrant wrench and nylon holder.

FEMALE COUPLING(S) - NORTHLINE

One (1) Northline 2½" double swivel female rocker lug coupling(s) shall be provided. The couplings are made from extruded 6061-T6 aluminum alloy.

MALE COUPLING(S) - NORTHLINE

One (1) Northline 2½" double male rocker lug coupling(s) shall be provided. The couplings are made from extruded 6061-T6 aluminum alloy.

FIRE HOSE(S)

Eight (8) 50' and Two (2) 10' length(s) of Angus 1200 1¾" double jacket polyester hose complete with light weight aluminum couplings shall be provided.

FIRE HOSE(S)

Four (4) 50' length(s) of Angus 1200 2½" double jacket polyester hose complete with light weight aluminum couplings shall be provided.

SUPPLY HOSE(S)

Two (2) x 25', Three (3) x 15' and Two (2) x 10' length(s) of Angus Hi-Vol 4" heavy-duty rubber covered supply hose complete with light weight aluminum storz couplings shall be provided. The hose shall be red in color.

SUPPLY HOSE(S)

Two (2) 50' length(s) of Angus Hi-Vol 4" heavy-duty rubber covered supply hose complete with light weight aluminum storz couplings shall be provided. The hose shall be red in color.

PORTABLE TANK CARRYING BRACKETS - FOLDING ENCLOSED

There shall be a set of "L" shaped folding portable tank brackets with a quick release mechanism installed on the apparatus body. The portable tank rack shall be enclosed with an aluminum surround.

A set of assist handles complete with retention clip shall be provided with the folding porta tank brackets. The handles will help aid in lifting and lowering the porta tank rack.

FRAMED PORTABLE TANK

One (1) Husky 1750 IG / 2100 USG collapsible portable tank made with 22 oz. vinyl and a full tubular steel frame shall be provided. The liner includes a 10" quick-drain tube which will empty the tank in seconds.

Open tank dimensions with liner: 11'3" x 11'3" x 29"

Closed tank dimensions with liner: 7" x 11'3" x 29"

Weight: 154 lbs

REAR TANK FILL ADAPTOR

Six (6) A Kochek 4"Storz x 2.5" F swivel adaptor, P/N S54R425X, shall be supplied for the rear 4" Storz fitting on the tank fill to allow use of a 2.5" hose for tank fill.

WHEEL CHOCKS

There shall be One (1) Zico aluminum wildland wheel chocks P/N AC-32-W with flat bottoms provided on the apparatus.

WHEEL CHOCK HOLDER

There shall be One (1) Zico aluminum wildland wheel chock holders mounted on the apparatus. The holders shall be secured with stainless steel fasteners that have been pretapped. Self tapping screws are not acceptable.

FLASHLIGHT(S)

There shall be two (2) Streamlight Fire Vulcan flashlight(s) supplied with the apparatus.

The Fire Vulcan is an industrial-duty, rechargeable, waterproof, portable lantern featuring a Halogen bi-pin bulb and (2) two ultra-bright blue tail-light LEDs that are user programmable in two modes of operation: **Steady Mode** Halogen only or Halogen and LEDs or **Blinking Mode** LEDs only or Halogen and LEDs. Fire Vulcan is suitable for use in certain hazardous locations.

High-impact ABS thermoplastic housing in high-visibility orange with rubberized cushioned-grip handle.

High-intensity halogen bi-pin 8 watt spot with 100 hour life time, and (2) two ultra bright Blue LEDs.

Up to 80,000 Peak Beam Candlepower utilizing 8 watt spot bi- pin bulb. Bulb Rating: 150 Lumens Typical

Zero-maintenance 4.5 Ah sealed lead-acid battery rechargeable up to 500 times.

Vehicle Mount System includes quick release buckle strap and 12 V DC vehicle-mountable direct-wire charging rack.

ZOLL AED Plus with AED Cover

One (1) P/N 2140071070211060 ZOLL AED Plus with AED Cover Includes; LCD screen showing voice prompt messages, device advisory messages, elapses time, short count and chest compression graph. Supplied with; CPR-D Padz, batteries, Operator's Guide and (5) five year limited warranty.

TFT GATED 4" STORZ CLAPPER SIAMESE

One (1) AS4SP-SP JUMBO SIAMESE 4.0"STORZ X 4.0"STORZ DBL SWIVEL TO SWIVEL will be supplied.

TFT JUMBO 4" STORZ WYE

One (1) AW4SP-SPJ UMBO WYE 4.0"STORZ X 4.0"STORZ DBL SWIVEL TO SWIVEL will be supplied.

TFT GATED 4" STORZ GATED Y

One (1) AY8SP-NJGATED Y 4"STORZ X 2.5"DUAL GATED MALE NST OUTLETS will be supplied.

TFT GATED 4" STORZ GATED Y

One (1) AY9SP-NJ GATED Y 4"STORZ X 2.5"DUAL GATED FEMALE NST OUTLETS will be supplied.

SCOTT AP 75 SCBA

Four (4) Scott AP 75, 4500 psi RIC, PASS, EBS with HUD will be supplied as per the customer specifications.

SCOTT SCBA CYCLINERS

Eight (8) Scott 4500 psi 60 Min carbon fibre cyclinders will be supplied as per the customer specifications.

SCOTT AV-3000 HT KLVR FACE MASK

Four (4) Scott AV-3000 HT KCLR Face pieces will be supplied as per the customer specification.