



Espar Heater Systems

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## Recommended Bid Specification Guidelines for 17,000 BTU School Bus Heaters

These units are typically chosen for engine pre-heating with some degree of auxiliary interior heating as the E\_Guardian 5 product from Espar

### **E-Guardian 5** series

Espar sells and services fuel operated heater systems for a variety of applications including school buses and trucks. Espar has met CARB approval on all popular models of heaters and is listed on the EPA website and other sites as a verified technology and an anti-idling solution.

Espar Hydronic Cooling System Heaters are available as our E-Guradian line which are specially packaged for School Bus applications. These Heaters provide engine pre-heating as well as supplemental interior heat. The units are boxed for protection and kits include all items necessarily for installation including a digital programmable timer. Espar Air Heaters provide quick warm air replenishment for special needs buses and trip buses.

To ensure that you have accurate and comprehensive bid specifications, Espar has provided a quality bid specification package to aid you in your decision making.

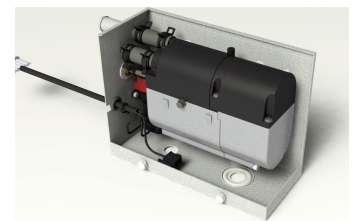
1. Must pre-heat the vehicles engine coolant system
2. Be appropriately matched for the size of the vehicle's coolant system and provide at least 17,000 BTU of heat output
3. Operate independently of the bus engine
4. Operate off of the vehicles existing 12 volt electrical system
5. Be powered by diesel fuel from the vehicle's fuel tank
6. Operate on ultra-low sulfur diesel (ULSD) or on ULSD/biodiesel blends up to 20% biodiesel (B-20)
7. Should not interfere with the vehicles normal operation or maintenance cycles
8. Be fully sealed from the elements / environment so as to operate properly
9. Have full protective mounting enclosure

### Espar Heater Systems Minimize

- Cold Weather Operating Costs
- Cold Weather Engine Idling
- Exhaust Emissions

### Espar Heater Systems Maximize

- Cold Weather Utilization
- Operator Productivity
- Useable Equipment Life



10. Must be able to preheat the engine for at least two continuous hours
11. Pre-heat the engine cooling system to a temperature at or about 180o F.
12. Have automatic safety systems, including temperature sensors, flame sensors, and overheat shutdown sensors
13. Key heater components (control unit, water temperature sensor, flame chamber, glow pin, flame sensor, blower motor, water pump) must be available for purchase and service individually for low cost of maintenance and operation
14. Meet all Federal Motor Vehicle Safety Standards and include a crash sensor / fuel shut-off feature per FMVSS301
15. Must be EPA Verified for school bus applications and CARB approved
16. Provide fault code diagnostics with optional PC diagnostic program availability, in the case of the latter the supplier should also provide the diagnostic software.
17. System must be installed to provide easy access for maintenance.
18. Provide all components and hardware needed for normal installation including a digital-programmable timer
19. Provide a three (3) year parts & workmanship warranty



**Optional Specifications for Consideration:**

1. Have a manual on-off switch with programmable settings for protection against: timer operation - low-battery conditions / low-voltage disconnect and ambient temperature operation
2. Include diagnostic tools and manuals (we routinely do this now for fleets)
3. Have trained local dealer support, experienced on installations and capable of providing parts, service and warranty support
4. Have automatic altitude adjustment capability
5. Must require minimal annual maintenance for low cost of operation

For more information on key facts please visit: [www.espar.com](http://www.espar.com)