When selecting the correct charging system for a specific application, electrical output performance and durability must be considered.

Electrical output must provide adequate current for all normal continuous loads. Twenty-five percent of intermittent loads such as brake lights, turn signals and radio transmitters should be added to continuous load; 50% for school buses, twenty percent of continuous load should be added for battery charging. See "Pulley Selection", to determine pulley ratio and size.

How to determine total vehicle electrical load:

1. With the engine "OFF" and the battery in good state-of-charge (approximately 70 to 100%) connect an accurate ammeter (50 Amperes range or less) in series with the grounded terminal of the battery and the ground cable.
2. Switch "ON and OFF" each individual electrical load separately. The sum of these values is the vehicle's total electrical requirements under the engine "OFF" conditions.
3. Generator output should be 50% more than vehicle load requirement.

Durability selection will be determined by: type of engine, gasoline or diesel; off highway, or marine use.

NOTE: If the vehicle is idling then the maximum output will be less than 1/2 rated output. If load exceeds this then it will drain from the battery.

Possible Parasitic Loads On Heavy-Duty Vehicles

Many tractor-trailer rigs are equipped with several creature-comfort items in the cab area for the benefit of their drivers. These items often require an electrical load beyond the original specifications of the vehicle. If the vehicle spends a large amount of time idling, then the batteries may become drained. The normal generator output at the idle is commonly only 40% of the rated output at 6500 rpm. Also, at night time, the drivers may operate several of their comfort items with the vehicle's engine off which also represents a battery drain. The table below lists several components and their associated ampere loads. It is not all-inclusive. The actual amp load of individual manufacturers' components will vary.

Components	Average AMP Draw
Headlights Low Beam	7.0
Headlights High Beam	9.0
Fog Lights	12.0
Brake Stop Lights	5.0
Tail Lights	1.2
Marker Lights	4.0
Back-up Lights	4.0
Turn Signals Lights	4.2
Hazard Signals Lights	8.4
Front Clearance Lights	1.2
Identification Lights	1.8
Trailer Load - Lights	12.6
Cab Dome Light	2.0
Bunk Dome Lights (2)	4.0
Parking Lights	0.5
Instrument Lights	1.0
Instrument	1.0
Ignition (transistor)	4.2
Electric Wipers	6.1
Heated Wipers	8.0
Field Current - Generator	3.0
Electric Fuel Pump	2.6
Electric Window	7.0

Components	Average AMP Draw
AM/FM Radio	1.0
C/B Radio	4.0
Color TV	8.0
Tape Deck & Aux Speakers	5.0
Radio/Telephone	4.0
Radar Detection	1.0
Circulating Fan - Low	2.0
Circulating Fan - HIgh	3.5
Heater/Defrost Fan - Low	5.0
Heater/Defrost Fan - HIgh	14.0
Bunk Blower Fan	8.0
Bunk Heater - Low	16.0
Bunk Heater - High	22.5
Air Conditioner - Low	9.0
Air Conditioner - High	18.0
Heated Mirrors	9.0
Remote Control Mirrors	2.0
Cigarette Lighter	6.5
Fuel Heater - Cold Weather	40.0
Satellite Scanner/Locator	12.0
Microwave Oven	18.0
Refrigerator - First On	30.0
Refrigerator - Normal	7.0