



## Cold Weather Testing: of GTX12V320A-E2107-CS200 with Internal Heater Kit

### Test 1: Normal Temperature Use for Consumers

Cold weather testing with production at 20F (-7C) versus at the max. heater limit of -4F/-20C: 20F is a realistic test for customer-use as an average between night/day temperatures. Heater Duty Cycle:

	Seconds	Minutes
On Time	2522	42.03333
Off Time	7325	122.0833
Total time	9847	164.1167
Duty Cycle	25.6%	

RESULTS: 4A @ 25% duty cycle is 1A per hour, or 13 days of self heating after full charge.

### Test 2: Extreme Conditions/Medical Freezer set to -4F/-20C

Heater duty cycle:

	Seconds	Minutes
On Time	3937	65.61667
Off Time	2663	44.38333
Total time	6600	110
Duty Cycle	59.7%	

RESULTS: 35W X 60% Duty Cycle = 21 Watts per Hour. 21 Watts / 12 Volts = 1.75 Amps Per Hour at -4F (sub-zero!) 315 amp hours / 1.75 amps = 180 hours of battery power or 180 / 24 hours = 7.5 Days of self heating after full charge.