

Mass of car	1500 kg	
Speed	58.11614 in m/s (/2.2369)	130 mph
Kinetic energy of moving car	2533115 Joules (1/2 * mv^2)	
Specific heat of Aluminium	900 joules per kg per deg C	
Specific heat of Iron	450 joules per kg per deg C	
Weight of front Al caliper	4.8 kg	
Weight of front Fe rotor	8 kg	
% of energy transferred to Front vs Rear brakes *	75 %	
Energy transferred to front brakes for full stop	1899836 joules	
% Energy into Caliper (assume proportional to mass *)	37.5 %	
% Energy into Rotor (assume proportional to mass *)	62.5 %	
Energy into Caliper for full stop (assume all energy goes to brakes *)	712438.5 joules	
Energy into Rotor for full stop (assume all energy goes to brakes *)	1187397 joules	
Temp rise for Caliper for full stop	82.45816 deg C	
Temp rise for Rotor for full stop	164.9163 deg C	

add 50% to caliper weight (estimate of regular vs Big Red)

add 22% to rotor weight (estimate of 289x28 vs 322x32)

Mass of car	1500 kg	
Speed	58.11614 in m/s (/2.2369)	130 mph
Kinetic energy of moving car	2533115 Joules (1/2 * mv^2)	
Specific heat of Aluminium	900 joules per kg per deg C	
Specific heat of Iron	450 joules per kg per deg C	
Weight of front Al caliper	7.2 kg	
Weight of front Fe rotor	9.76 kg	
% of energy transferred to Front vs Rear brakes *	75 %	
Energy transferred to front brakes for full stop	1899836 joules	
% Energy into Caliper (assume proportional to mass *)	42.45283 %	
% Energy into Rotor (assume proportional to mass *)	57.54717 %	
Energy into Caliper for full stop (assume all energy goes to brakes *)	806534.1 joules	
Energy into Rotor for full stop (assume all energy goes to brakes *)	1093302 joules	
Temp rise for Caliper for full stop	62.23257 deg C	
Temp rise for Rotor for full stop	124.4651 deg C	

reduce 400kg weight

Mass of car	1100 kg	
Speed	58.11614 in m/s (/2.2369)	130 mph
Kinetic energy of moving car	1857617 Joules ($1/2 * mv^2$)	
Specific heat of Aluminium	900 joules per kg per deg C	
Specific heat of Iron	450 joules per kg per deg C	
Weight of front Al caliper	4.8 kg	
Weight of front Fe rotor	8 kg	
% of energy transferred to Front vs Rear brakes *	75 %	
Energy transferred to front brakes for full stop	1393213 joules	
% Energy into Caliper (assume proportional to mass *)	37.5 %	
% Energy into Rotor (assume proportional to mass *)	62.5 %	
Energy into Caliper for full stop (assume all energy goes to brakes *)	522454.9 joules	
Energy into Rotor for full stop (assume all energy goes to brakes *)	870758.1 joules	
Temp rise for Caliper for full stop	60.46931 deg C	
Temp rise for Rotor for full stop	120.9386 deg C	