

7 kW from 3 kg

1996. A-Z report an excess heat run that produced an average fusion heat release of 7 W from 3 grams of Pd nanopowder throughout a period of almost 200 days. Multiply by 1000 and you get 7 kW using 3 kg of metal nanopowder for 200 days. 7 kW is a home heater.

7 Watts is not a high power. But deuterium fuel contains 20 million times as much energy per pound as charcoal. So a cold fusion heater would provide 7 kW of heat for 20,000 times longer than the run time of the A-Z experiment that provided a steady 7 Watts.

It is interesting to compare a 7-kW home heater running on charcoal with 7-kW cold fusion heater fueled by deuterium gas. The heat of combustion of charcoal is

7.26 kcal per gram of charcoal,
which is 7.26×10^3 gram-cal per gram charcoal
which is 3.04×10^4 Watt-sec per gram charcoal,
which is 3.04×10^7 Watt-sec per kg (2.2 lbs) of charcoal,
which is 3.04×10^8 Watt-sec per 10-kg (22 lbs) of charcoal,
which is 3.04×10^5 kW-sec per 10 kg of charcoal.

We have used the mechanical energy equivalent to heat which is:

4.18 Joules (Watt-second) = 1 gram-calorie.

A day is 8.6×10^4 seconds, so the 22-pounds of charcoal would provide 1 kW of heat power for 3.520 days, which means 0.503 days at 7 kW.

The deuterium fueled cold fusion heater provides 20 million times as much energy per kg as charcoal. Multiplying by 20 million, the 3.04×10^7 Watt-sec per kg of charcoal becomes 6.08×10^{14} Watt-sec per kg deuterium.

The fuel energy density is 6.08×10^{14} Watt-sec per kg of D₂ gas,
which is 6.08×10^{11} kW-sec per kg of D₂ gas,
which is 6.08×10^8 kW-sec per gram of D₂ gas,
which means one gram of D₂ gas would run a 7-kW heater run
for 8.69×10^7 seconds

A year is 3.16×10^7 seconds, so 1 gram of D₂ gas would run the 7-kW heater for 2.75 years. A cubic foot = 28.3 liters. A cubic foot of D₂ gas at 1 atmosphere of pressure has a mass of 5.05 grams, which would run the

heater for 13.9 years. One cubic foot at 10 atmospheres would run the heater for 139 years. People will buy their heaters with a lifetime supply