Rain rate: $\frac{0.1\,in}{h}$ (Boston Logan data) → 1.41 mL/s (5.08 L/h)

Collector Area: $2\,m^2$

Collector height: 10 feet

$P = \frac{E}{t} = \frac{m}{t} g h$

42 mW Rain

Alt min: $V_{terminal} \approx 9\,m/s$ 1.41 mL/s over $2\,m^2$

$$\rho_V = \frac{mass}{A\,t} = \frac{mass}{t} \cdot \frac{1}{A}$$

Turbine power eqtn $P = \frac{\rho A v^3}{2} = \left(\frac{mass}{t}\right) v^2/2$

57.1 mW

Rain ~100 mW total

3.84 kWh/m²/24h → 7.68 kWh/m²/12h → 0.64 kW/m²

Collector A: $2\,m^2$

Solar 1.28 kW 30,000 x higher

8 mph wind $1.2\ kg/m^3$ $1\ m^2$

Wind $\frac{\rho A v^3}{2} = 27.4\ W$

Human 10 steps 10 people/min

150 lbs/person 1" per step

$$E = 10.1'' \cdot 150\ lbs \cdot \frac{10}{1\ min} \cdot 9.8\ m/s^2$$

$$= 28.2\ W$$