The heat transferred per unit area is 3.19e+05 W/sq.m

The area of the pan inside-bottom surface in contact with liquid is 1.56e-02 sq.m

Solution to part (a)

The power delivered to the water is 4.98 kW

Solution to part (b)

The water evaporation rate is 2.21e-03 kg/s = 7.94 kg/hr

Solution to part (c)

The critical heat flux is 1.52e+06 W/sq.m