For water, at a temperature of $T_{sat} = 115°C$, the pressure is $P_{sat} = 169\ kPa$ and for $T_{sat} = 125°C$, the pressure is $P_{sat} = 232\ kPa$. Estimate the vaporization heat, h_{lv}, for this temperature trajectory ($v_{vl} = 0.89\ m^3/kg$). Round your answer to 1 digit and express it in kJ/kg.

The Clapeyron equation is given as: $\left(\frac{dP}{dT}\right)_{sat} = \left(\frac{h_{lv}}{T_{sat} v_{lv}}\right)$. In order to perform the differentiation we have to rearrange this to: $\left(\frac{v_{lv}}{h_{lv}}\right) dP = \left(\frac{1}{T_{sat}}\right) dT$. Integration gives: $\int_{P_1}^{P_2} \left(\frac{v_{lv}}{h_{lv}}\right) dP = \int_{T_1}^{T_2} \left(\frac{1}{T_{sat}}\right) dT$. This can be worked out to give: $h_{lv} = v_{vl}(P_2 - P_1) \left[\ln\left(\frac{T_2}{T_1}\right)\right]^{-1} = 0.89 \cdot 63 \cdot \left[\ln\left(\frac{398}{388}\right)\right]^{-1} = 2203.5\ kJ/kg$