$$q_{cyc,dry} = \frac{60*\overline{V}*C_{p,a}*\Gamma}{[v_n'*(1+W_n)]} = \frac{60*\overline{V}*C_{p,a}*\Gamma}{v_n} \quad \text{and} \quad \Gamma = F_{CD}^{*}\int_{\tau_1}^{\tau_2}[T_{a1}(\tau) - T_{a2}(\tau)]\delta\tau,\ hr * °\text{F}$$