

3. arspr., maj 28/1, klima

$$t_1 = 8^\circ\text{C}, t_1(\text{rad}) = 4^\circ\text{C} \Rightarrow h_1 = 17 \frac{\text{kJ}}{\text{kg}}, x_1 = 3,5 \frac{\text{g}}{\text{kg}}$$

$$t_2 = 14^\circ\text{C}, x_2 = x_1 = 3,5 \frac{\text{g}}{\text{kg}} \Rightarrow h_2 = 23 \frac{\text{kJ}}{\text{kg}}, \dot{m}_{1,2} = 2000 \frac{\text{kg}}{\text{h}} = \dot{m}_{1,8}$$

$$t_3 = 22^\circ\text{C}, x_3 = x_2 = 3,5 \frac{\text{g}}{\text{kg}} \Rightarrow h_3 = 31 \frac{\text{kJ}}{\text{kg}}, \dot{m}_{1,3} = 1200 \frac{\text{kg}}{\text{h}} = \dot{m}_{1,6}$$

$$t_5 = 18^\circ\text{C}, x_5 = x_2 = 3,5 \frac{\text{g}}{\text{kg}} \Rightarrow h_5 = 27 \frac{\text{kJ}}{\text{kg}}, \dot{m}_{1,5} = 800 \frac{\text{kg}}{\text{h}} = \dot{m}_{1,7}$$

$$\dot{m}_{d(3-4)} = 6 \frac{\text{kg}}{\text{h}} \Rightarrow x_4 = x_3 + \frac{\dot{m}_{d(3-4)}}{\dot{m}_{1,3}} = 3,5 + \frac{6 \cdot 10^3}{1200} = 8,5 \frac{\text{g}}{\text{kg}}$$

$$h_4 = 44,7 \frac{\text{kJ}}{\text{kg}}, x_6 = x_4 = 8,5 \frac{\text{g}}{\text{kg}}, \dot{Q}_{(4-6)} = 2 \text{ kW} = 7200 \frac{\text{kJ}}{\text{h}} \Rightarrow$$

$$h_6 = h_4 + \frac{\dot{Q}_{(4-6)}}{\dot{m}_{1,3}} = 44,7 + \frac{7200}{1200} = 50,7 \frac{\text{kJ}}{\text{kg}}$$

$$t_7 = t_5 = 18^\circ\text{C}, \Delta x_{(5-7)} = 2,5 \frac{\text{g}}{\text{kg}} \Rightarrow x_7 = 3,5 + 2,5 = 6 \frac{\text{g}}{\text{kg}}$$

$$\dot{m}_{1,8} \cdot x_8 = \dot{m}_{1,6} \cdot x_6 + \dot{m}_{1,7} \cdot x_7 \Rightarrow$$

$$x_8 = \frac{\dot{m}_{1,6} \cdot x_6 + \dot{m}_{1,7} \cdot x_7}{\dot{m}_{1,8}} = \frac{1200 \cdot 8,5 + 800 \cdot 6}{2000} = 7,5 \frac{\text{g}}{\text{kg}}$$

$$h_8 = 43,7 \frac{\text{kJ}}{\text{kg}}, h_9 = h_8 - (h_2 - h_1) = 43,7 - (23 - 17) = 37,7 \frac{\text{kJ}}{\text{kg}}$$

•1 $t_6 = \underline{\underline{29^\circ\text{C}}}$ (afkast)

•2 $\varphi_7 = \underline{\underline{0,47}}$ (afkast)

•3 $t_8 = \underline{\underline{24,4^\circ\text{C}}}$ (afkast), $p_{d,8} = \underline{\underline{12 \text{ hPa}}}$

•4 $h_9 = \underline{\underline{37,7 \frac{\text{kJ}}{\text{kg}}}}$

•5 $\eta_{\text{temp},(1-2)} = \frac{t_2 - t_1}{t_8 - t_1} = \frac{14 - 8}{24,4 - 8} = \frac{6}{16,4} = \underline{\underline{0,366}}$