

- 3.39 Calculate the area required in a two-tube-pass, one-shell-pass condenser that is to condense 10^6 kg/h of steam at 40°C using water at 17°C . Assume that $U = 4700$ W/m²K, the maximum allowable temperature rise of the water is 10°C , and $h_{fg} = 2406$ kJ/kg. [$A = 8,112$ m²]

Water	
$T_{c,in}$	$= 17^\circ\text{C}$
$T_{c,out}$	$= 27^\circ\text{C}$
$c_{p,h}$	$= 4.18$ kJ/kgK
Steam	
$T_{h,in} = T_{h,out}$	$= 40^\circ\text{C}$
h_{lv}	$= 2406$ kJ/kg

