

TFES Lab (ME EN 4650)

Water Cooling Tower: Raw Data Sheet

Name: _____ Date: _____ Lab #: _____

T_{amb} : _____ ($^{\circ}\text{C}$) "ambient temperature in lab"

P_{atm} : _____ (mm Hg) "barometric pressure in lab"

\dot{Q}_{in} : _____ (kW) "input power to water heaters"

D_{makeup} : _____ (cm) "inside diameter of makeup water tank"

Quantity	Units	Exp 1	Exp 2	Exp 3
$\dot{m}_{w_{in}}$: inlet water flow speed*	(gm/s)			
T_1 : air inlet A (dry bulb temp)	($^{\circ}\text{C}$)			
T_2 : air inlet A (wet bulb temp)	($^{\circ}\text{C}$)			
T_3 : air outlet B (dry bulb temp)	($^{\circ}\text{C}$)			
T_4 : air outlet B (wet bulb temp)	($^{\circ}\text{C}$)			
T_5 : water inlet temp	($^{\circ}\text{C}$)			
T_6 : water outlet temp	($^{\circ}\text{C}$)			
t_1 : air @ H (wet-bulb temp)	($^{\circ}\text{C}$)			
t_2 : air @ H (dry-bulb temp)	($^{\circ}\text{C}$)			
t_3 : water temp @ H	($^{\circ}\text{C}$)			
t_4 : air @ G (wet-bulb temp)	($^{\circ}\text{C}$)			
t_5 : air @ G (dry-bulb temp)	($^{\circ}\text{C}$)			
t_6 : water temp @ G	($^{\circ}\text{C}$)			
t_7 : air @ F (wet-bulb temp)	($^{\circ}\text{C}$)			
t_8 : air @ F (dry-bulb temp)	($^{\circ}\text{C}$)			
t_9 : water temp @ F	($^{\circ}\text{C}$)			
ΔP_B : pressure drop @ air outlet B	(mm H ₂ O)			
L_1 : initial height of makeup water	(cm)			
L_2 : final height of makeup water	(cm)			
t_{exp} : time of experiment	(s)			

* measure from top of the float