

FTM 27 giugno 2018 DATI azzurro=dati comuni blu=dati diversi verde=ipotesi

Es 1 Bi << 1, Re-Nu cilindrico, raffreddamento barra calda					
T_iniz	500	Tfinale	40	lambda acc	60
Tfilm	145	Tamb	20	ro acc	7850
ro_aria	0.8	w m/s	5	Cp acc	434
Cp	1007	L_Re	0.050	<b>Biot</b>	<b>0.006727</b>
lambda	0.036	Re	8163	tau	1319
mu	2.45E-05	Nu	44.8	t_finale s	4192
Pr	0.701	<b>h</b>	<b>32.29</b>	t_min	69.9

Es 2 Re-Nu piana, Bi > 0.1, piastrelle si raffreddano					
spessore, cm	10	T_film °C	<b>237.5</b>	<b>237</b>	<b>237.5</b>
L Re-Nu, m	<b>2</b>	lambda_aria	0.041372		
		mi_aria	0.000027		
T_iniz	30	Pr	0.701		
T_finale	120	Ro_aria	0.692		
T_amb	400	Re	<b>256321</b>		
w_aria	5	Nu	289.8		
		h	<b>6.0</b>		
lambda vetro	1.4	<b>Bi</b>	<b>0.428</b>		
ro vetro	2500	lambda1	0.610185		
Cp	750	A1	1.06142	sup	
alfa	7.47E-07	T_finale	120	170.5	
facce	1	teta	<b>0.757</b>	<b>0.620</b>	
Lc per Bi	0.1	Fo	0.9		
		tempo s	12170		
		tempo min	203		
		<b>tempo h</b>	<b>3.38</b>		

Es 3 Q, L, politropica						
Mm	29		1	2	3	1
R	286.69	V	1	1	0.20	1.00
Cp	1003.41	P bar	1	1.410	13.42	1.00
Cv	716.72	T °C	20	140	513	20.00
<b>m [kg]</b>	<b>1.0000</b>	T K	293	413	786	293.00
	<b>1.1905</b>	n			1.4	1.613289
		deltaU J		86006.9	267488.0	-353495
		Qin [J]		86006.9	0.0	-79023
x		Lin [J]			267488.0	-274472

Es 4 Rankine							
			T °C	P kPa	x	h	s
Tmin °C	50	1=LiqSat	50	12.349	0	209.3	0.7038
Pmax bar	160	2	50	16000	nd (<0)	<b>225.3</b>	"
Tmax °C	500	2re				229.4	
etaPpompa	0.8	5	500	16000	nd (>1)	3293.85	6.29835
etaTurb	0.8	6	50	12.349	<b>0.759</b>	<b>2017.5</b>	6.29835
		6re			<b>0.866</b>	2272.7	
		VapSat	50	12.349	1	2592.1	8.0763

	ideale	reale
Qin	3068.50	3064.50
L_nu	1260.36	1001.08
<b>eta1</b>	<b>41.1%</b>	<b>32.7%</b>
etaC	58.2%	58.2%
<b>eta2</b>	<b>70.6%</b>	<b>56.1%</b>

x

Es 5		Ciclo Otto					
P1 rel	-0.7 R	286.7		P bar	T °C	T K	
rapp_comp	9.5 gamma	1.4		1	0.3	70	343
Q kJ/kg	1500 eta1	0.59		2	7.0	571	844
Cv	716.7241 etaC	0.88		3	24.4	2664	2937
Cp	1003.4 eta2	0.67		4	1.04	920	1193

Es 6		aria umida mix, no condensa							
	m' kg/s	T °C	UR	Psat	Pvap	x	h	Trug	
fredda	1	12	100%	1418.6	1418.6	0.0088		34.3	
calda	2	30	70%	4246	2972.2	0.0188		78.2	
mix	3	24.1	82%	3014.656	2459.7	0.0155		63.58	20.79

Es 7		scambiatori NTU, tubo acqua calda	
Rint	5		
Rest	6	deltaTml	34.8
m'	0.016667	Q'h20	697.3
Tin	60	h	8.0
Tout	50	A m2	2.508
Tamb	20	L	66.6