

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	Biot	0.006727
lambda	0.036	Re	8163	tau	1319
mu	2.45E-05	Nu	44.8	t_finale s	4192
Pr	0.701	h	32.29	t min	69.9

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

Es 3 Q, L, politropica					
Mm	29		1	2	3
R	286.69	V	1	1	0.20
Cp	1003.41	P bar	1	1.410	13.42
Cv	716.72	T °C	20	140	513
m [kg]	1.0000	T K	293	413	786
	1.1905	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
Tmin °C	50	1=LiqSat	50	12.349	0	209.3
Pmax bar	160	2	50	16000	nd (<0)	225.3
Tmax °C	500	2re				229.4
etaPpompa	0.8	5	500	16000	nd (>1)	3293.85
etaTurb	0.8	6	50	12.349	0.759	2017.5
		6re			0.866	2272.7
		VapSat	50	12.349	1	2592.1

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

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		