

Es 1 Rankine									
Tmin °C	40								
Pmax bar	150								
Tmax °C	450								
etaPpompa	94%								
etaTurb	100%								

	T °C	P kPa	x	h	s	ideale	reale	
1=LiqSat	40	7.384	0	167.6	0.5725	Qin	2959.61	2958.65
2	40	15000	nd (<0)	182.6	"	L_nu_Tid	1213.59	1215.03
2re				183.6		eta1	41.0%	41.1%
5	450	15000	nd (>1)	3142.2	6.1474	etaC	56.7%	56.7%
6	40	7.384	0.725	1913.6	6.1474	eta2	72.3%	72.4%
6re			0.725	1913.6	6.147			
VapSat	40	7.384	1	2574.3	8.257			

Esercizio 2 compressore politropo							
	in		out-isoS			politropica	
R, Cp	286.69	1003.414	T °C	20	256.0	208.8	
deltaT/delt	80%		T K	293	529.0	481.8	
l, L' in	225054	1500	P_ass Pa	101325	801325	801325	
delta h, H	189454	1263	rho kg/m3	1.206		5.801	
m'	0.0067		v	0.8290162		0.172377	
q, Q' in	-35600	-237	n			1.317	
delta_s, S	-93.8	-0.63					
amb	121.5	0.8					
tot	27.7	0.2					

es 3 pompa di calore				
	K	°C		
Q'sup W	5000	Tsup	319	46
COPid	7.42	deltaTcond		24
COPre	4.45	T esterno		22
Lin	1123	deltaT	43	
Q'inf W	3877	T locali		12
euro/kWh	0.15	deltaTevap		9
		Tinf	276	3

Es 4 aria umida					
	1	delta 12	2	liq_ev	3
T	5		45.0	10	34.1
UR	80%		7%		26%
Psat	872.1		9593		5383.1
Pvap	697.7	=	697.7		1395
x	0.0043	=	0.0043	0.0044	0.0087
h	15.9	40.5	56.4	0.2	56.5

Tsat°C	Psat_Pa
5	872.1
5.0	872.1
10	1227.6
0.01	611.3
5	872.1

Es 5 lastre			
lati, cm	3	lambda cera	3
L Re-Nu,m	0.2	ro ceramica	2600
T_iniz	20	Cp	800

T_finale	400	alfa	1.44E-06
T_amb	900	facce	2
T_film	555	Lc per Bi	0.015
w_aria	8	Bi	0.121
Ro_aria	0.47	lambda1	0.16
lambda_ar	0.058	A1	1.02
mi_aria	0.000035	teta	0.57
Pr	0.701	Fo	22.86
Re	21303	tempo s	3566
Nu	83.6	tempo min	59
h	24.2	tempo h	0.99

0.82
1.13

Es 6 Biot			
T_amb	900	T_iniziale	20
Tfilm	555	T_finale	400
ro_aria	0.47	w m/s	8
lambda	0.058	D= L_Re	0.040
mu	3.53E-05	Re	4261
Pr	0.701	Nu	30.0
		h	43.5
lambda_ac	60	ro acc	7800
Cp acc	600	spessore	0.005
Bi	0.029005	Tau	537.8
t s	304		

Es 7 aletta			
T_base	20	Tamb	900
Tfilm	555	T_finale	400
ro_aria	0.47	w m/s	8
lambda	0.058	D= L_Re	0.040
mu	3.53E-05	Re	4261
Pr	0.701	Nu	30.0
		h	43.5
lambda_ac	60	Bi	0.029005
spessore	0.005	perim	0.1256
Area	0.0005495	m	12.9
1/m	0.078	L_ok	0.044

Es 8 Irraggiamento						
D	4	Area	eps	T °C	K	
R	2.00	Soffitto	12.56	0.8	70	343
altezza = L	3	Lati	37.68	0.8	70	343
L/R	1.5	Pavimento	12.56	0.7	25	298
R/L	0.666667					
F_BB	0.23	F12	Q'			
F_BL	0.77	Q' sup-lato	0.77	0.00		
F_LB	0.256667	Q' lato-inf	0.256667	2342.29		
B=base L=lato		Q' sup-inf	0.23	843.74		