

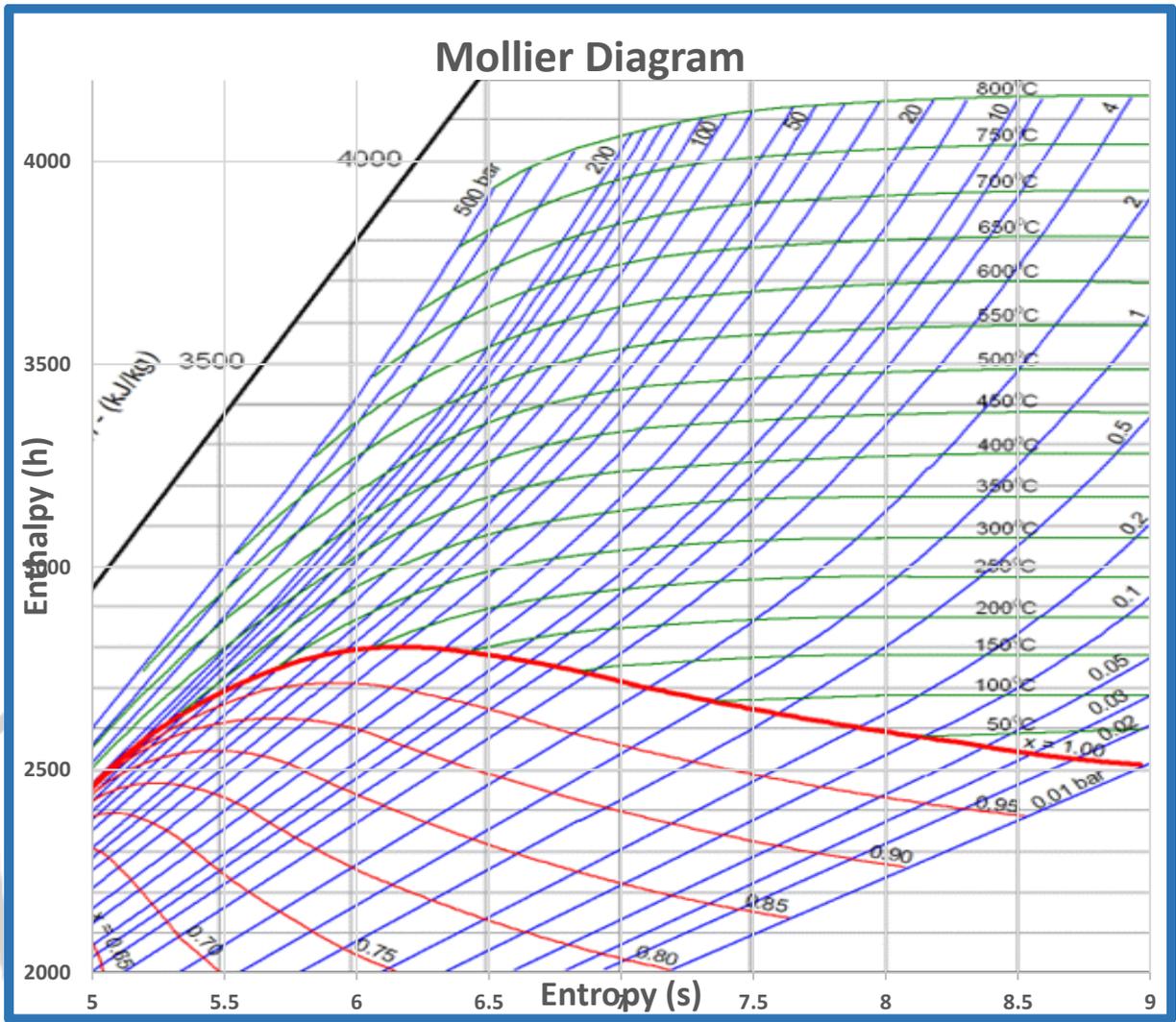
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Lampiran 2: Mollier Diagram



Sumber : <https://www.engineeringtoolbox.com/>

SEMARANG

Lampiran 3: Tabel Parameter Inputan yang digunakan saat di simulasi.

No	Equipment	Parameter	Value	Units	No	Equipment	Parameter	Value	Units
1	Boiler	Superheat Temperature	535	°C	9	FWH 4	Subcooling Duty	1,292	MW
		Reheat Temperature	535	°C			Subcooling Surface Area	45,8	m ²
		Superheat Steam Flow	582,473	kg/s			Subcooling Heat Transfer Coeff.	2328,09	W/m ² K
		Superheat Spray flow	3,008	kg/s			Condensing Duty	40,587	MW
		Reheat Spray Flow	0,506	kg/s			Condensing Surface Area	1005,68	m ²
		Boiler Fuel Efficiency	87,05	%			Condensing Heat Transfer Coeff.	4287,09	W/m ² K
		Reheater Pressure Drop	6,424	%			Number of U-Tubes	723	
		Design Superheat Press.	174,76	Bar			Thermal Conductivity	16,1	W/mK
2	HP Turbine	Design VWO Flow	634,911	kg/s	10	FWH 6 A & B	Inside Diameter	1,727	cm
		Design VWO Throttle Press.	174,76	Bar			Feedwater Press. Drop	1,145	bar
		Design VWO Throttle Temp.	537,8	°C			Subcooling Duty	5,003	MW
		Design VWO 1st stage press.	145,88	Bar			Subcooling Surface Area	205,5	m ²
		Design VWO 1st Stage Shell Enthalpy	799,06	kcal/kg			Subcooling Heat Transfer Coeff.	2152,06	W/m ² K
		Design VWO 2nd Stage Flow	626,483	kg/s			Condensing Duty	25,257	MW
		Design Exhaust Press.	44,03	Bar			Condensing Surface Area	986,44	m ²
		Design VWO exhaust Enthalpy	278,86	kcal/kg			Condensing Heat Transfer Coeff.	3088,98	W/m ² K
		Turbine Efficiency	Curve	-			Desuperheating Duty	5,32	MW
		Extractions	1	-			Desuperheating Surface Area	128,48	m ²
							Desuperheating Heat Transfer Coeff.	442,9	W/m ² K
3	IP-LP Turbine	Design Inlet Press.	39,63	Bar	11	FWH 7 A & B	Number of U-Tubes	1198	
		Design Inlet Temp.	537,8	°C			Thermal Conductivity	16,1	W/mK
		Design Inlet Flow	527,886	kg/s			Outside Diameter	1,588	cm
		Inlet Valve Press. Drop	2	%			Inside Diameter	1,166	cm
		Design Inlet Packing Flow (N2)	2,54	kg/s			Feedwater Press. Drop	1,413	bar
		Design Inlet Packing Entalphy (N2)	799,06	kcal/kg			Subcooling Duty	9,856	MW
		LP Turbine Crossover Press. Drop	3	%			Subcooling Surface Area	294,04	m ²
		IP Section RPM	3000	Rp m			Subcooling Heat Transfer Coeff.	1924,93	W/m ² K
		Extractions	7	-			Condensing Duty	55,426	MW
		Design ELEP Press.	3	cm Hga			Condensing Surface Area	1278,35	m ²
4	Condenser	Cooling Sytem Type	Once Through						
		Zone	2						

No	Equipment	Parameter	Value	Units	No	Equipment	Parameter	Value	Units
		Tube Material	Titanium	m			Condensing Heat Transfer Coeff.	306,058	W/m ² K
		Tube Thickness	0,71	mm			Desuperheating Duty	6,119	MW
		Number of Passes	1				Desuperheating Surface Area	203,46	m ²
		Percent Plugged Tubes	0	%			Desuperheating Heat Transfer Coeff.	698,43	W/m ² K
		Tube Outer Diameter	3,175	cm			Number of U-Tubes	1381	
		Number of Tubes Zone 1	14600				Thermal Conductivity	16,1	W/mK
		Number of Tubes Zone 2	14600				Outside Diameter	1,588	cm
		Condenser Surface Area Zone 1	14650	m ²			Inside Diameter	1,14	cm
		Condenser Surface Area Zone 2	13980	m ²			Feedwater Press. Drop	1,448	bar
		Cleanliness Factor	85	%			Subcooling Duty	1,676	MW
		Operating Circ. Water Flow	29,9	m ³ /s			Subcooling Surface Area	80,73	m ²
		Circ. Water Inlet Temp.	28,3	°C			Subcooling Heat Transfer Coeff.	176,594	W/m ² K
		Circ. Water Inlet Press.	1,379	Bar			Condensing Duty	31,323	MW
		Circ. Water DP	0,345	Bar			Condensing Surface Area	127,472	m ²
5	Condensate Pump	Motor Efficiency	95	%	1 2	FWH 8 A & B	Condensing Heat Transfer Coeff.	307,762	W/m ² K
		Discharge Press.	36	Bar			Desuperheating Duty	5,689	MW
		Pump Efficiency	75	%			Desuperheating Surface Area	208,29	m ²
6	FWH 1 A & B	Condensing Duty	18,376	MW			Desuperheating Heat Transfer Coeff.	545,11	W/m ² K
		Surface Area	630,72	m ²			Number of U-Tubes	1428	
		Heat Transfer Coeff.	3253,64	W/m ² K			Thermal Conductivity	16,1	W/mK
		Number of U-Tubes	366				Outside Diameter	1,588	cm
		Thermal Conductivity	16,1	W/mK			Inside Diameter	1,13	cm
		Outside Diameter	1,905	cm			Feedwater Press. Drop	1,276	bar
		Inside Diameter	1,727	cm			Bleed Delta Press	100	Bar
		Feedwater Press. Drop	1,427	bar			Efficiency	86,85	%
7	FWH 2	Subcooling Duty	3,898	MW	1 3	BFP	Turbine Design Inlet Press.	10,05	Bar
		Subcooling Surface Area	170,57	m ²			Turbine Inlet Enthalpy	751,98	kcal/kg
		Subcooling Heat Transfer Coeff.	1936,29	W/m ² K			Design Inlet Flow	12,39	kg/s
		Condensing Duty	38,501	MW			Design Exhaust Press.	0,103	Bar
		Condensing Surface Area	1150,51	m ²			Rating	846500	kV A
		Condensing Heat Transfer Coeff.	3639,77	W/m ² K			Design Hydrogen Press.	5,171	Bar
		Number of U-Tubes	733				Actual Hydrogen Press.	4,932	Bar
1	4	Generator							

No	Equipment	Parameter	Value	Units	No	Equipment	Parameter	Value	Units
		Thermal Conductivity	16,1	W/mK			Generator Speed	3000	Rpm
		Outside Diameter	1,905	cm			Actual Power Factor	99,96	%
		Inside Diameter	1,727	cm					
		Feedwater Press. Drop	1,393	bar					
8	FWH 3	Subcooling Duty	2,591	MW					
		Subcooling Surface Area	87,61	m ²					
		Subcooling Heat Transfer Coeff.	2481,4	W/m ² K					
		Condensing Duty	39,447	MW					
		Condensing Surface Area	1062,25	m ²					
		Condensing Heat Transfer Coeff.	3997,5	W/m ² K					
		Number of U-Tubes	710						
		Thermal Conductivity	16,1	W/mK					
		Outside Diameter	1,905	cm					
		Inside Diameter	1,727	cm					
		Feedwater Press. Drop	1,317	bar					

