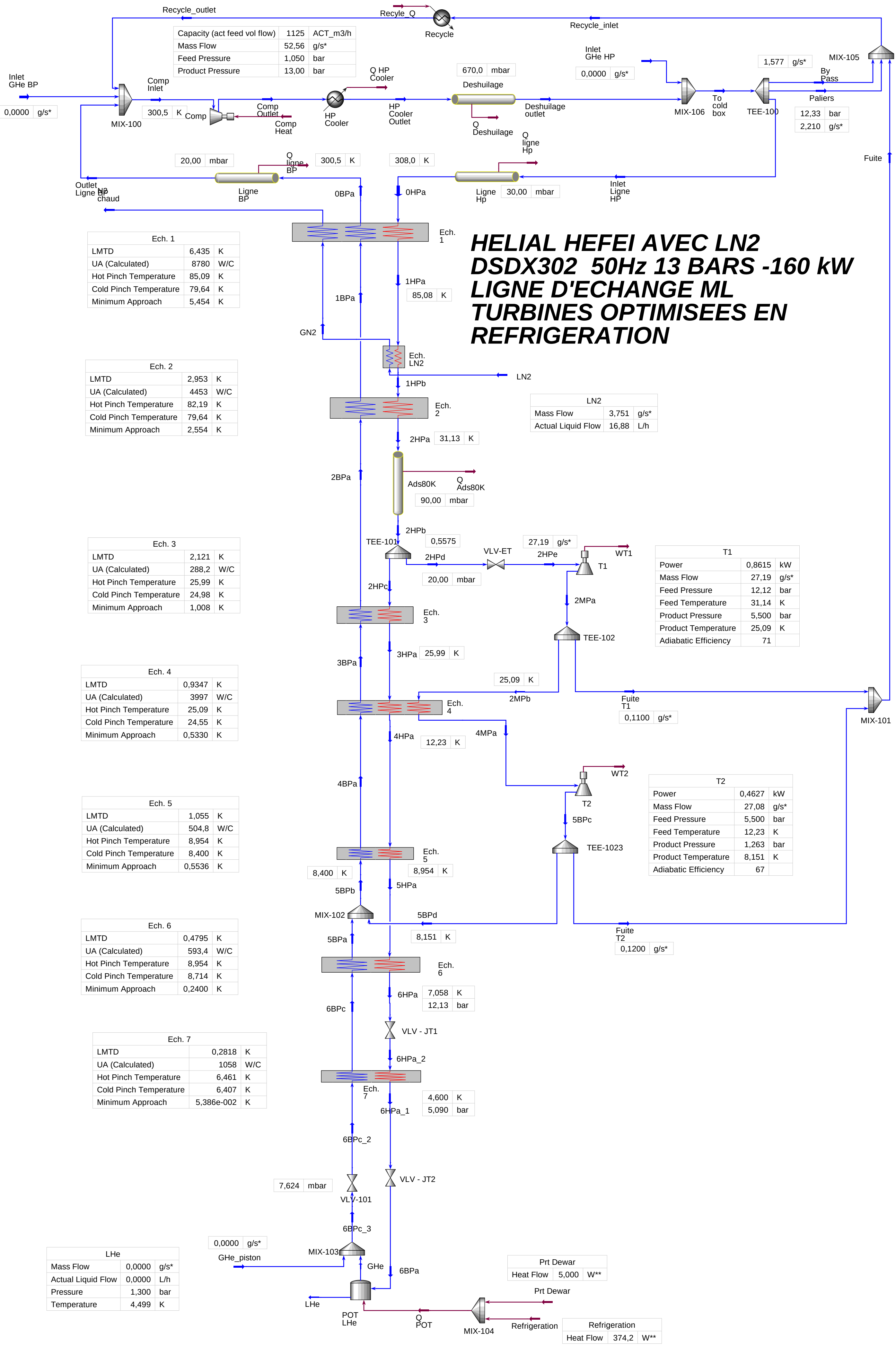
HELIAL HEFEI AVEC LN2 DSDX302 50Hz 13 BARS -160 kW LIGNE D'ECHANGE ML TURBINES OPTIMISEES EN REFRIGERATION



Recycle_outlet
Recyle_Q
Recycle
Recycle_inlet
Inlet GHe BP
0,0000 g/s*
MIX-100
Comp Inlet
300,5 K
Comp
Comp Outlet
Comp Heat
Q HP Cooler
HP Cooler
HP Cooler Outlet
670,0 mbar
Deshuilage
Q Deshuilage
Deshuilage outlet
Inlet GHe HP
0,0000 g/s*
MIX-106
To cold box
TEE-100
1,577 g/s*
MIX-105
By Pass
Paliers
12,33 bar
2,210 g/s*
Fuite
20,00 mbar
Q ligne BP
300,5 K
308,0 K
Q ligne Hp
Outlet Ligne BP
N2 chaud
Ligne BP
0BPa
0HPa
Ligne Hp
30,00 mbar
Inlet Ligne HP
Ech. 1
1HPa
85,08 K
1BPa
GN2
Ech. LN2
LN2
1HPb
Ech. 2
2HPa
31,13 K
2BPa
Ads80K
Q Ads80K
90,00 mbar
2HPb
TEE-101
0,5575
2HPd
VLV-ET
27,19 g/s*
2HPe
WT1
T1
20,00 mbar
2HPc
2MPa
Ech. 3
TEE-102
3HPa
25,99 K
3BPa
25,09 K
2MPb
Fuite T1
0,1100 g/s*
MIX-101
Ech. 4
4HPa
12,23 K
4MPa
WT2
T2
4BPa
5BPc
TEE-1023
Ech. 5
8,400 K
8,954 K
5BPb
5HPa
MIX-102
5BPd
8,151 K
Fuite T2
0,1200 g/s*
5BPa
Ech. 6
6HPa
7,058 K
12,13 bar
6BPc
VLV - JT1
6HPa_2
Ech. 7
4,600 K
5,090 bar
6HPa_1
6BPc_2
VLV - JT2
7,624 mbar
VLV-101
6BPc_3
0,0000 g/s*
GHe_piston
MIX-103
GHe
6BPa
LHe
POT LHe
Q POT
MIX-104
Prt Dewar
Refrigeration

Capacity (act feed vol flow)	1125	ACT_m3/h
Mass Flow	52,56	g/s*
Feed Pressure	1,050	bar
Product Pressure	13,00	bar

Ech. 1		
LMTD	6,435	K
UA (Calculated)	8780	W/C
Hot Pinch Temperature	85,09	K
Cold Pinch Temperature	79,64	K
Minimum Approach	5,454	K

Ech. 2		
LMTD	2,953	K
UA (Calculated)	4453	W/C
Hot Pinch Temperature	82,19	K
Cold Pinch Temperature	79,64	K
Minimum Approach	2,554	K

LN2		
Mass Flow	3,751	g/s*
Actual Liquid Flow	16,88	L/h

Ech. 3		
LMTD	2,121	K
UA (Calculated)	288,2	W/C
Hot Pinch Temperature	25,99	K
Cold Pinch Temperature	24,98	K
Minimum Approach	1,008	K

T1		
Power	0,8615	kW
Mass Flow	27,19	g/s*
Feed Pressure	12,12	bar
Feed Temperature	31,14	K
Product Pressure	5,500	bar
Product Temperature	25,09	K
Adiabatic Efficiency	71	

Ech. 4		
LMTD	0,9347	K
UA (Calculated)	3997	W/C
Hot Pinch Temperature	25,09	K
Cold Pinch Temperature	24,55	K
Minimum Approach	0,5330	K

T2		
Power	0,4627	kW
Mass Flow	27,08	g/s*
Feed Pressure	5,500	bar
Feed Temperature	12,23	K
Product Pressure	1,263	bar
Product Temperature	8,151	K
Adiabatic Efficiency	67	

Ech. 5		
LMTD	1,055	K
UA (Calculated)	504,8	W/C
Hot Pinch Temperature	8,954	K
Cold Pinch Temperature	8,400	K
Minimum Approach	0,5536	K

Ech. 6		
LMTD	0,4795	K
UA (Calculated)	593,4	W/C
Hot Pinch Temperature	8,954	K
Cold Pinch Temperature	8,714	K
Minimum Approach	0,2400	K

Ech. 7		
LMTD	0,2818	K
UA (Calculated)	1058	W/C
Hot Pinch Temperature	6,461	K
Cold Pinch Temperature	6,407	K
Minimum Approach	5,386e-002	K

LHe		
Mass Flow	0,0000	g/s*
Actual Liquid Flow	0,0000	L/h
Pressure	1,300	bar
Temperature	4,499	K

Prt Dewar		
Heat Flow	5,000	W**

Refrigeration		
Heat Flow	374,2	W**