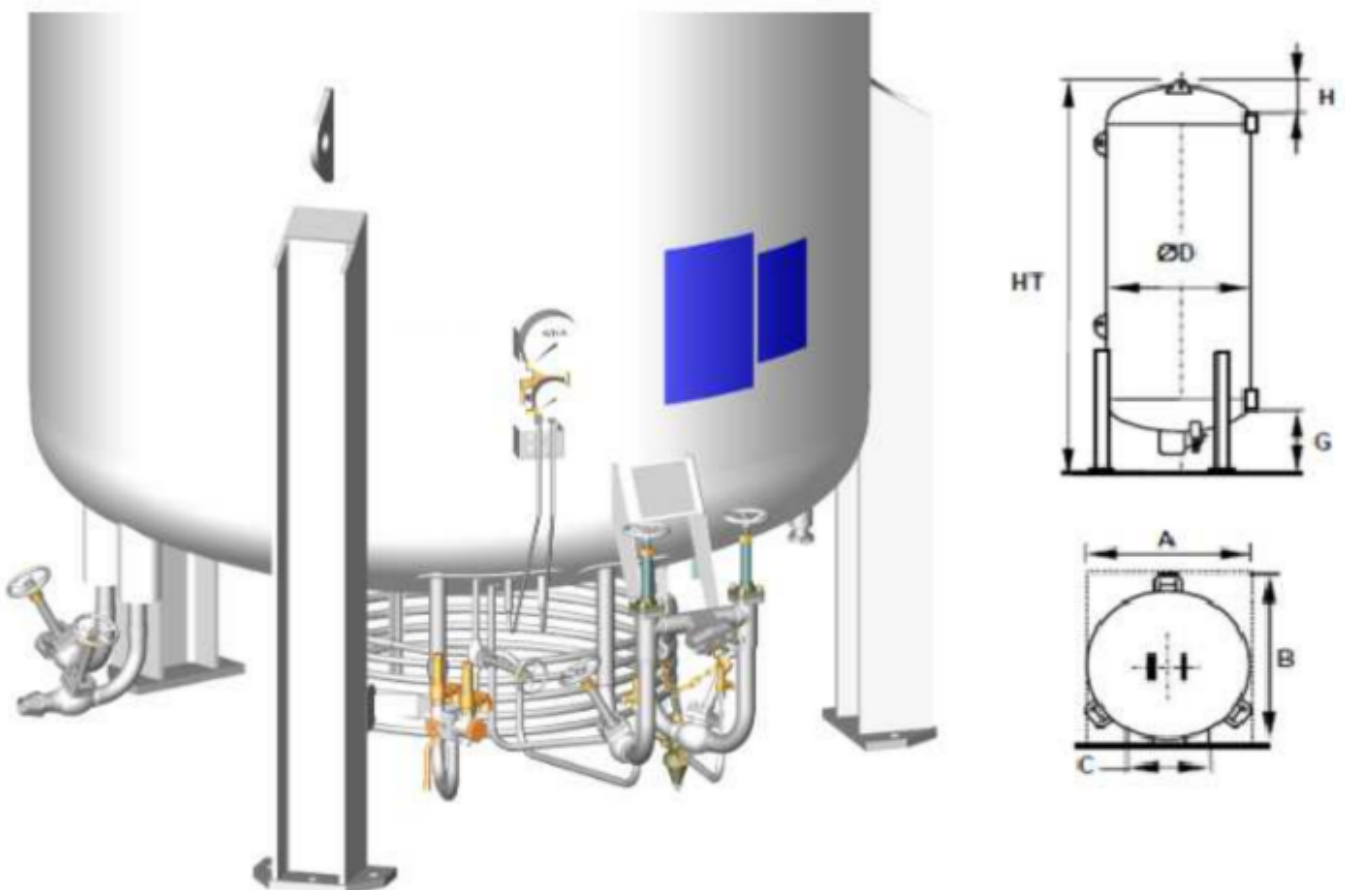


CRYOLOR ASIA PACIFIC introduces the latest generation vacuum insulated cryogenic tank, the **Céline 3**, for Liquid Nitrogen, Oxygen or Argon service. Available in a range of sizes with a Maximum Allowable Working Pressure of **250 psig** (≈ 17 bar), **Céline 3** is designed in accordance with the European Pressure Equipment Directive PED **2014/68/EU** and **EN-13458**.

Moreover, the support legs used in the Céline 3 range are calculated to resist high winds and earthquakes conforming IBC code.

- **The widest range of standard options:** Introduced by CRYOLOR, our innovative modular design using prefabricated piping modules, allows the basic model to be customized to satisfy virtually all possible technical requirements.
- **A maximum use of Stainless steel:** Only Céline 3 uses as much stainless in its construction to guarantee the lowest life cycle costs - valves, interconnecting piping, pressure raising coil and all welded connections are stainless steel.
- **Components selected for their operational reliability:** Mono-bloc pressure building economizer - regulator, safety system with dual relief valves and burst discs as standard, stainless steel valves.
- **Reduced overall operational costs:** Optimized pipework layout with fewer connections minimize potential leaks and facilitate operation & servicing, filling assembly isolation valves, proven painting techniques guarantee years of carefree operation.



Disclaimer: The image shown above is just a representation of the tank, The actual product may vary on its appearance and size.

TYPE	C6		C10		C13		C15		C20		C24	
Gross capacity (liters / USG) *	6150	1625	9810	2592	12720	3360	14910	3939	19290	5096	23660	6250
Net capacity (liters / USG) *	5843	1543	9320	2462	12084	3192	14165	3742	18326	4841	22477	5938
Boil off Rate O2 (%)	0.28		0.26		0.25		0.24		0.23		0.22	
Empty weight (kg / lbs)	4000	8818	5100	11244	6250	13779	6800	14991	8100	17857	9600	21164
Weight full Nitrogen (kg / lbs) - LIN	8721	19226	12630	27845	16014	35305	18245	40223	22907	50501	27761	61203
Weight full Oxygen (kg / lbs) - LOX	10666	23515	15734	34687	20038	44176	22962	50622	29009	63955	35246	77705
Weight full Argon (kg / lbs) - LAR	12139	26761	18082	39864	23083	50889	26531	58491	33627	74136	40910	90192
Continuous flow rate for 8 Hours at 8 bar (Nm3/h) - LIN	500										1000	
Continuous flow rate for 8 Hours at 12 bar (Nm3/h) - LIN	320										640	
∅ Diameter (mm / feet)	2200 / 7.2											
HT height (mm / feet)	4200	13.8	4950	16.2	5950	19.5	7660	25.1	8600	28.2	10235	33.6
H (mm / feet)	520 / 1.7											
G (mm / feet)	1055 / 3.5											
A (mm / feet)	2300 / 7.5											
B (mm / feet)	2500 / 8.2											
C (mm / feet)	1245 / 4.1											

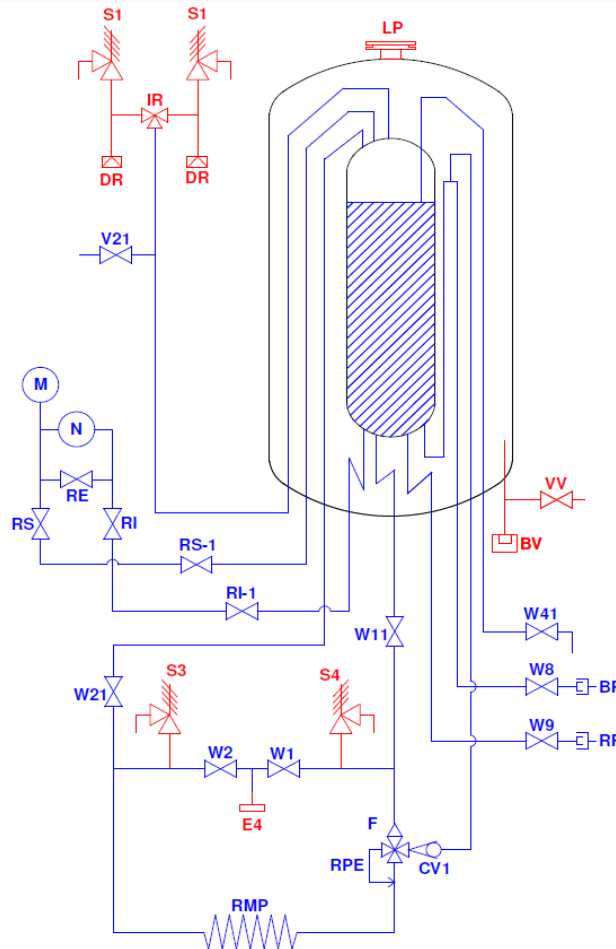
TYPE	C28		C34		C41		C48		C56		C64	
Gross capacity (liters / USG) *	28040	7407	34340	9072	41300	10910	47530	12556	56270	14865	63750	16841
Net capacity (liters / USG) *	26638	7037	32623	8618	39235	10365	45154	11928	53457	14122	60563	15999
Boil off Rate O2 (%)	0.20		0.18		0.16		0.15		0.15		0.13	
Empty weight (kg / lbs)	10900	24030	13100	28881	15100	33290	17100	37699	19400	42770	21400	47179
Weight full Nitrogen (kg / lbs) - LIN	32424	71482	39459	86993	46802	103180	53584	118133	62593	137994	70335	155061
Weight full Oxygen (kg / lbs) - LOX	41294	91038	50323	110943	59867	131984	68620	151282	80394	177238	90502	199522
Weight full Argon (kg / lbs) - LAR	48007	105837	58544	129067	69754	153782	79999	176367	93865	206937	105764	233169
Continuous flow rate for 8 Hours at 8 bar (Nm3/h) - LIN	1000											
Continuous flow rate for 8 Hours at 12 bar (Nm3/h) - LIN	640											
∅ Diameter (mm / feet)	2200	7.2	2840 / 9.3									
HT height (mm / feet)	11740	38.5	8850	29.04	10510	34.48	11543	37.87	13510	44.32	15025	49.29
H (mm / feet)	520 / 1.7		650 / 2.2								3660 / 12	
G (mm / feet)	1055 / 3.5		1100 / 3.6									
A (mm / feet)	2300 / 7.5		3000 / 9.8									
B (mm / feet)	2500 / 8.2		3350 / 11									
C (mm / feet)	1245 / 4.1		1530 / 5									

* Manufacturing tolerance : ± 4%

Note: Trycock level is 95%

The density of LIN / LOX / LAR is 808 / 1141 / 1393 Kg/m³ respectively, and has been considered in the weight calculation.

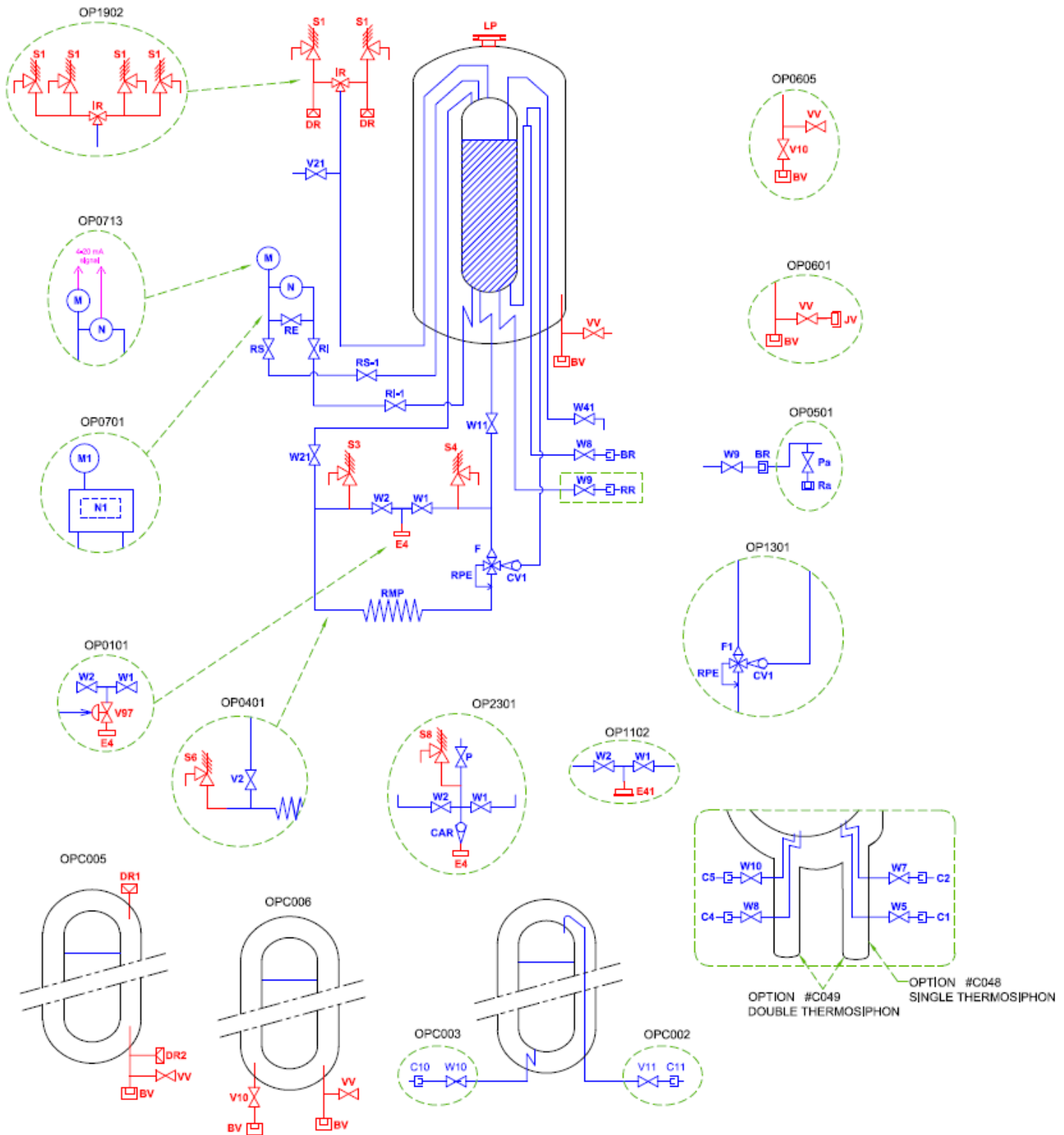
FLOW DIAGRAM (Standard)



REFERENCE	NOMENCLATURE	SIZE
W1, W11	Bottom Filling Valves	DN 25 < 21 kl Tanks
W2, W21	Top Filling Valves	DN 40 ≥ 21 kl Tanks
S3-S4	Line Safety Valve	1/4"
E4	Filling Connection	DN 40
S1	Inner Vessel Safety Valve	1/2"
DR	Inner Vessel Protection Device	1/2"
IR	3-Way Valve	DN 20
M	Pressure Indicator	-
N	Level Indicator	
RI	Level Gauge Manifold, Liquid	
RE	Level Gauge Manifold, Equalizer	
RS	Level Gauge Manifold, Gas	
W41	Full trycock Valve	DN 15
LP	Lift Plate	As per Cryolor design
BV	Vacuum Connection	-
W8 + BR	Withdrawal Valve - Gas + Connection	DN 25 < 21 kl Tanks
W9 + RR	Withdrawal Valve - Liquid + Connection	DN 40 ≥ 21 kl Tanks
RPE & F	Pressure Regulator / Economizer with Filter	-
CV1	Check Valve	
RMP	Pressure Building Coil	
V21	Vent Valve	DN 25
VV	Vacuum probe isolation valve	-

Note : All operating valves are “Bestobell” made as per standard.

FLOW DIAGRAM (with Options)



REFERENCE	NOMENCLATURE (OPTIONS)	SIZE
OP0101	Over pressurization protection (To avoid over pressure filling & Ensure vessel safety while filling)	
V97	Over pressurization protection valve	DN 40
C6	MG 97 valve connection	
OP0401	Pressure Building Coil Isolation valve	
S6	Line Safety Valve	1/4"
V2	Pressure Building Coil Isolating Valve	DN 15
OP0501	Liquid Analysis Connection	
Pa	Liquid Analysis Valve	DN 15
Ra	Quick Connection	
OP0601	Annular space vacuum detection / Vacuum sensor / Vacuum measuring probe	
VV	Vacuum Isolation Valve	1/8"
JV	Vacuum Thermocouple Connection	1/8"
OP0605	Vacuum Isolation valve	
V10	Vacuum isolation valve -Edwards Vacuum valve Type SP10K & SP25K	
OP0701	Teleflo Diva	
M1 & N1	Digital Level indicator & Analog Pressure indicator	
OP0713	Wika with Telemetry (4-20mA) option	
	4-20 mA Telemetry provision with wika gauge	
OP1102	ISO filling connection / Optional adaptor 1 1/2" 300 lbs	
E41	ISO Flange connection for Filling	DN 40
OP1301	Economizer Isolation valve	
V5	Globe Valve With Check	DN 15
S7	Line Safety Valve	1/4"
OP1902	Additional safety relief valves	
	4 Number of safety relief valves without bursting disc	
OP2301	Filling assembly with Check valve, Check valve & Purge valve	
S8	Line Safety Valve	1/4"
P	Purge Valve	
CAR	Check Valve	
OP5301	Footprint template	
	Footprint drawing available before tank shipment (For foundation work at customer site)	
OPC001	10% Trycock	
	Net capacity of tank with 10% gas phase	
OPC002	Additional Top filling / Gas withdrawal line	
V11	Top filling / Gas withdrawal valve	DN 25 < 21 kl Tanks
C11	Top filling / Gas withdrawal connection	DN 40 ≥ 21 kl Tanks
OPC003	Additional Liquid withdrawal line	
W10	Liquid withdrawal valve	DN 25 < 21 kl Tanks
C10	Liquid withdrawal connection	DN 40 ≥ 21 kl Tanks
OPC005	Rupture disc for Outer vessel safety relief	
DR1 & DR2	Vacuum bursting disc (Instead of lift plate)	
OPC006	Additional vacuum pumping line for vacuum valve	
BV	Vacuum pump down connection	
V10	Vacuum isolation valve -Edwards Vacuum valve Type SP10K & SP25K	

REFERENCE	NOMENCLATURE (OPTIONS)	SIZE
OPC007	ANSI flange connection on withdrawals ANSI flange connection on withdrawals (Instead of 3 part coupling)	
OPC008	Metal P&ID Metal P&ID instead of Laminated sheet P&ID	
OPC009	Upsizing liquid withdrawal valve (W9) to DN 50 / 2" Liquid withdrawal valve size increased to DN50 / 2" (Valve size DN50, Pipe size DN25/DN40)	
OPC010	Liquid withdrawal line (W9) to DN 50 / 2" Liquid withdrawal line size DN50 / 2" (Both Pipe & Valve)	
OPC012	LAR-CGA connection on Filling cluster CGA-Filling connection for Liquid Argon	
OPC013	LOX-CGA connection on Filling cluster CGA-Filling connection for Liquid Oxygen	
OPC014	LIN-CGA connection on Filling cluster CGA-Filling connection for Liquid Nitrogen	
OPC015	MOM Certificate MOM certificate available	
OPC016	Herose valves (Instead of Bestobell valves) Operating valves are Herose make instead of Bestobell make	
OPC017	Customer LOGO Customer requirement LOGO fixed on tank.	
OPC048	Single Thermosiphon Single Thermosiphon setup will be fixed	
OPC049	Double Thermosiphon Double Thermosiphon setup will be fixed	

Note:

- This technical specification is purely an indication, It can't be considered as a contractual document.
- This technical specification is subject to change without prior intimation.