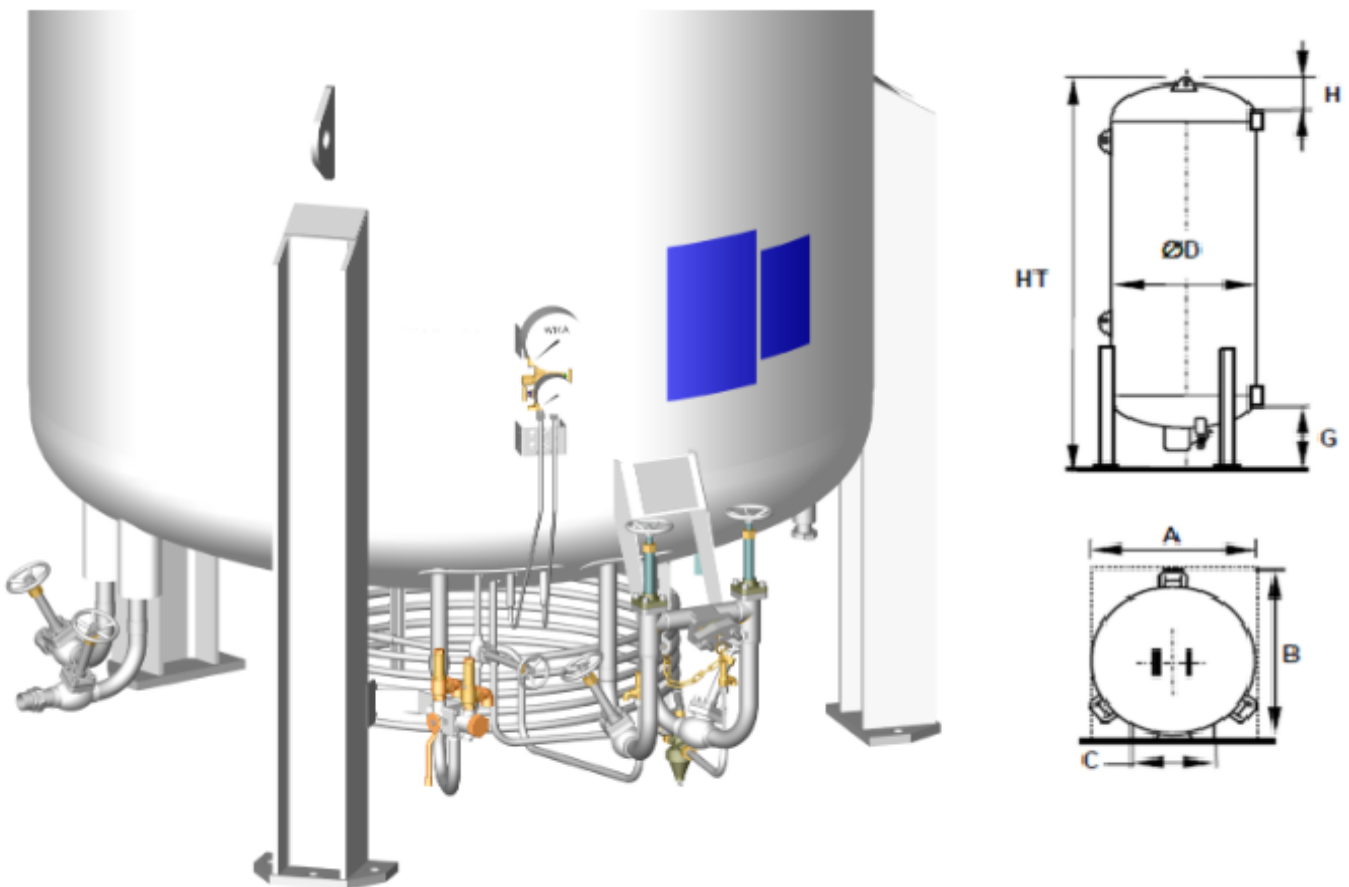


CRYOLOR ASIA PACIFIC introduces the latest generation vacuum insulated cryogenic tank, the **Céline 3**, for Liquid Nitrogen, Oxygen or Argon service. Available in a range of sizes with a Maximum Allowable Working Pressure of **350 psig** ( $\approx 24$  bar), **Céline 3** is designed in accordance with **ASME Section VIII Division 1 with 'U' stamp**.

Moreover, the support legs used in the Céline 3 range are calculated **to resist high winds and earthquakes (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.

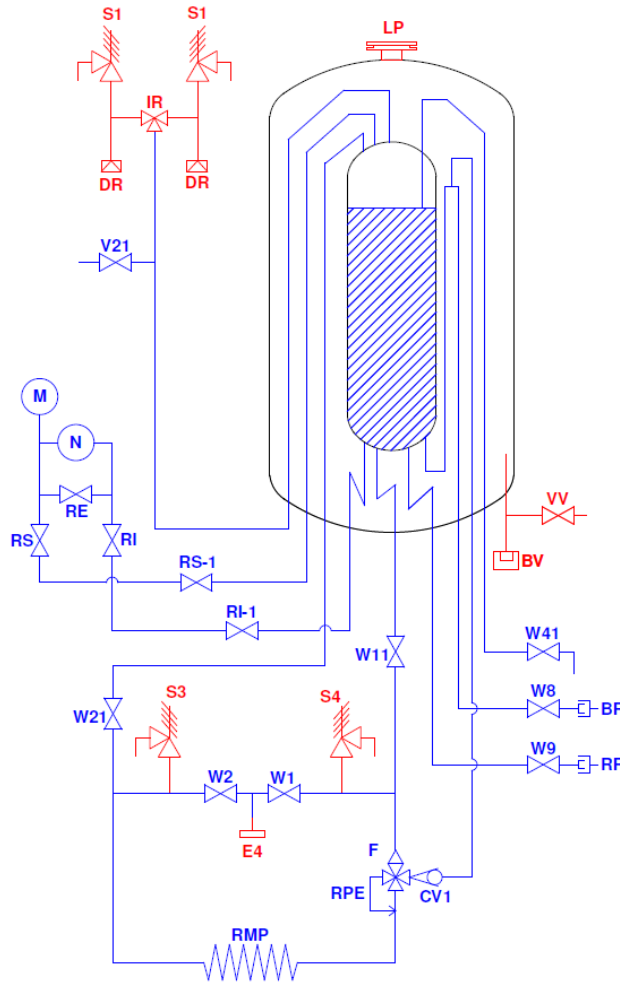
TYPE	CA 06 (1.5 KUSG)		CA 11 (3 KUSG)		CA 14 (4 KUSG)		CA 19 (5 KUSG)		CA 21 (6 KUSG)		CA 27 (7.5 KUSG)	
	Gross capacity (liters / USG) *	6150	1625	10540	2784	14910	3939	19290	5096	23660	6250	28040
Net capacity (liters / USG) *	5535	1462	9486	2506	13419	3545	17361	4586	21294	5625	25236	6667
Boil off Rate O2 (%)	0.28		0.26		0.24		0.23		0.22		0.20	
Empty weight (kg / lbs)	4600	10141	6100	13448	8200	18078	9800	21605	11400	25133	13000	28660
Weight full Nitrogen (kg / lbs) - LIN	9072	20001	13765	30346	19043	41982	23828	52531	28606	63064	33391	73614
Weight full Oxygen (kg / lbs) - LOX	10915	24064	16924	37310	23511	51833	29609	65276	35696	78697	41794	92141
Weight full Argon (kg / lbs) - LAR	12310	27139	19314	42580	26893	59288	33984	74922	41063	90527	48154	106161
Continuous flow rate												
For 8 Hours at 8 bar (Nm3/h) - LIN	330		330		330		330		660		660	
For 8 Hours at 8 bar (Nm3/h) - LOX	390		390		390		390		780		780	
For 8 Hours at 8 bar (Nm3/h) - LAR	420		420		420		420		840		840	
∅ Diameter (mm / feet)	2200 / 7.2											
HT height (mm / feet)	4200	13.8	5200	17.1	7660	25.1	8600	28.2	10235	33.6	11740	38.5
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	CA 33 (9 KUSG)		CA 41 (11 KUSG)		CA 47 (13 KUSG)		CA 53 (15 KUSG)		CA 63 (17 KUSG)	
	Gross capacity (liters / USG) *	34340	9072	41300	10910	47530	12556	56270	14865	63750
Net capacity (liters / USG) *	30906	8165	37170	9819	42777	11300	50643	13378	57375	15157
Boil off Rate O2 (%)	0.18		0.16		0.15		0.15		0.13	
Empty weight (kg / lbs)	16000	35274	18500	40786	21200	46738	23800	52470	26300	57982
Weight full Nitrogen (kg / lbs) - LIN	40972	90328	48533	106998	55764	122938	64720	142682	72659	160186
Weight full Oxygen (kg / lbs) - LOX	51264	113017	60911	134286	70009	154342	81584	179861	91765	202307
Weight full Argon (kg / lbs) - LAR	59052	130187	70278	154936	80788	178108	94346	207997	106223	234182
Continuous flow rate										
For 8 Hours at 8 bar (Nm3/h) - LIN	660		660		660		660		660	
For 8 Hours at 8 bar (Nm3/h) - LOX	780		780		780		780		780	
For 8 Hours at 8 bar (Nm3/h) - LAR	840		840		840		840		840	
∅ Diameter (mm / feet)	2840 / 9.3									
HT height (mm / feet)	8850	29.04	10510	34.48	11543	37.87	13510	44.32	15025	49.29
H (mm / feet)	650 / 2.2								3660 / 12	
G (mm / feet)	1100 / 3.6									
A (mm / feet)	3000 / 9.8									
B (mm / feet)	3350 / 11									
C (mm / feet)	1530 / 5									

\* Manufacturing tolerance : ± 4%

Note: Trycock level is 90%.

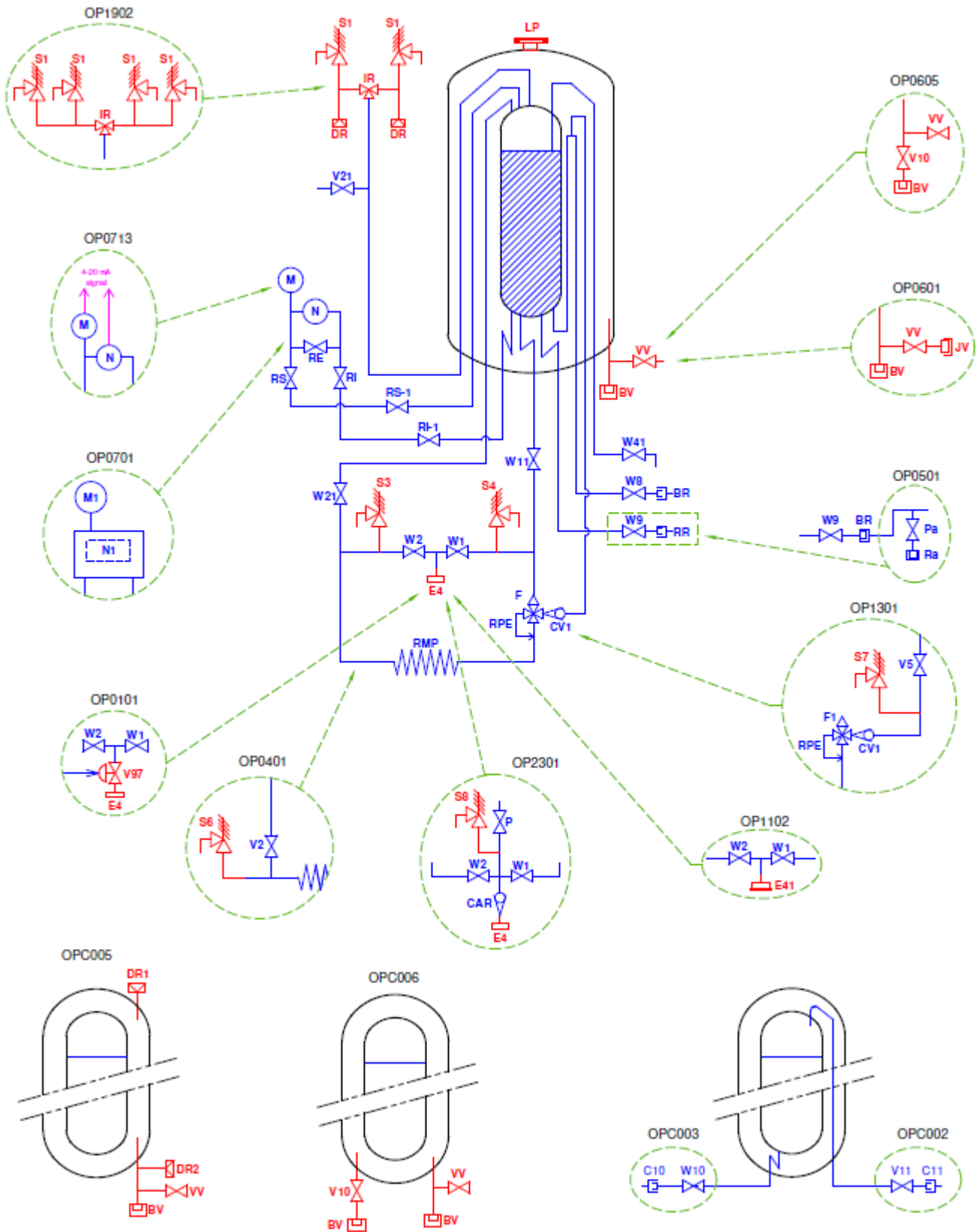
### FLOW DIAGRAM (Standard)



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

**Note :** All operating valves are "Bestobell" make as per standard.

### FLOW DIAGRAM (with Options)



Red = EIS (Element Important for Safety)

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

REFERENCE	NOMENCLATURE (OPTIONS)	SIZE
<b>OPC008</b>	<b>Metal P&amp;ID</b> Metal P&ID instead of Laminated sheet P&ID	
<b>OPC009</b>	<b>Upsizing liquid withdrawal valve (W9) to DN 50 / 2"</b> Liquid withdrawal valve size increased to DN50 / 2" (Valve size DN50, Pipe size DN25/DN40)	
<b>OPC010</b>	<b>Liquid withdrawal line (W9) to DN 50 / 2"</b> Liquid withdrawal line size DN50 / 2" (Both Pipe & Valve)	
<b>OPC012</b>	<b>LAR-CGA connection on Filling cluster</b> CGA-Filling connection for Liquid Argon	
<b>OPC013</b>	<b>LOX-CGA connection on Filling cluster</b> CGA-Filling connection for Liquid Oxygen	
<b>OPC014</b>	<b>LIN-CGA connection on Filling cluster</b> CGA-Filling connection for Liquid Nitrogen	
<b>OPC015</b>	<b>MOM Certificate</b> MOM certificate available	
<b>OPC016</b>	<b>Herose valves (Instead of Bestobell valves)</b> Operating valves are Herose make, instead of Bestobell make	
<b>OPC017</b>	<b>Customer LOGO</b> Customer requirement LOGO fixed on tank.	

**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.