TECLINE-SINOGES ALUMINUM SCUBA CYLINDERS - MULTI-MODEL BUOYANCY COMPARISON

Consolidated Hydrostatic Buoyancy & Physical Specification Schedule | Models: S40 (5.8L), S50 (7.0L), and S80 (11.1L)

1. SIDE-BY-SIDE PHYSICAL & HYDROSTATIC SPECIFICATION MATRIX

Specification / Performance Parameter	Unit	TECLINE S40 (Metric)	TECLINE S40 (Imperial)	TECLINE S50 (Metric)	TECLINE S50 (Imperial)	TECLINE S80 (Metric)	TECLINE S80 (Imperial)	Engineering Notes & Diving Characteristics
Nominal Water Capacity	L / cu ft	5.80 L	40 cu ft	7.00 L	50 cu ft	11.10 L	80 cu ft	Stamped nominal water capacity rating
Measured Internal Water Volume (V_int)	L / cu ft	6.20 L	0.219 cu ft	7.15 L	0.252 cu ft	11.50 L	0.406 cu ft	Actual measured internal volume via full water fill
Working / Hydrostatic Test Pressure	Bar / PSI	207 / 310 Bar	3,000 / 4,500 PSI	207 / 310 Bar	3,000 / 4,500 PSI	207 / 310 Bar	3,000 / 4,500 PSI	ISO 7866 / DOT-3AL / TPED compliant
Bare Cylinder Tare Weight (W_cyl)	kg / lbs	7.80 kg	17.20 lbs	9.55 kg	21.05 lbs	13.95 kg	30.75 lbs	Seamless Aluminum 6061-T6 alloy construction
Scuba Valve Weight (W_valve)	kg / lbs	0.700 kg	1.54 lbs	0.700 kg	1.54 lbs	0.687 kg	1.51 lbs	Forged marine brass scuba K-valve
Rigged Empty Weight (W_assembly)	kg / lbs	8.50 kg	18.74 lbs	10.25 kg	22.60 lbs	14.64 kg	32.27 lbs	Dry cylinder + valve assembly weight
External Displaced Volume (V_ext)	L / cu ft	8.45 L*	0.298 cu ft	10.85 L	0.383 cu ft	16.75 L	0.592 cu ft	Overflow tank displacement (*S40 theo. hull = 9.17 L)
Seawater Buoyancy @ 207 Bar (Full)	kg / lbs	-1.41 kg	-3.11 lbs	-0.94 kg	-2.08 lbs	-0.38 kg	-0.85 lbs	All three models are negatively buoyant when full
Seawater Buoyancy @ 200 Bar (Full)	kg / lbs	-1.36 kg	-2.99 lbs	-0.88 kg	-1.94 lbs	-0.29 kg	-0.63 lbs	Standard 200 Bar metric full fill state
Neutral Buoyancy Transition Pressure	Bar / PSI	~21 Bar	~308 PSI	~100 Bar	~1,443 PSI	~180 Bar	~2,607 PSI	Exact suspended neutral equilibrium pressure in seawater
Seawater Buoyancy @ 50 Bar (Reserve)	kg / lbs	-0.22 kg	-0.48 lbs	+0.43 kg	+0.96 lbs	+1.83 kg	+4.03 lbs	5m safety stop / decompression reserve buoyancy
Seawater Buoyancy @ 0 Bar (Empty)	kg / lbs	+0.16 kg	+0.36 lbs	+0.87 kg	+1.92 lbs	+2.53 kg	+5.58 lbs	Maximum positive upward lift when completely depleted
Total Buoyancy Swing (207 to 0 Bar)	kg / lbs	1.57 kg	3.47 lbs	1.81 kg	4.00 lbs	2.92 kg	6.43 lbs	Total weight of breathed air from full to empty

2. PRESSURE-BY-PRESSURE SEAWATER NET BUOYANCY SCHEDULE (LIVE FORMULAS)

Pressure (Bar)	Pressure (PSI)	S40 Total Mass (kg)	S40 Seawater Buoyancy (kg)	S40 Seawater Buoyancy (lbs)	S50 Total Mass (kg)	S50 Seawater Buoyancy (kg)	S50 Seawater Buoyancy (lbs)	S80 Total Mass (kg)	S80 Seawater Buoyancy (kg)	S80 Seawater Buoyancy (lbs)
207	3002	10,07	-1,41	-3,11	12,06	-0,94	-2,07	17,55	-0,38	-0,84
200	2901	10,02	-1,36	-3	12	-0,88	-1,94	17,45	-0,28	-0,62
180	2611	9,87	-1,21	-2,67	11,83	-0,71	-1,57	17,17	0	0
150	2176	9,64	-0,98	-2,16	11,56	-0,44	-0,97	16,75	0,42	0,93
125	1813	9,45	-0,79	-1,74	11,34	-0,22	-0,49	16,4	0,77	1,7
100	1450	9,26	-0,6	-1,32	11,13	-0,01	-0,02	16,05	1,12	2,47
75	1088	9,07	-0,41	-0,9	10,91	0,21	0,46	15,69	1,48	3,26
50	725	8,88	-0,22	-0,49	10,69	0,43	0,95	15,34	1,83	4,03
21	305	8,66	0	0	10,43	0,69	1,52	14,93	2,24	4,94
0	0	8,5	0,16	0,35	10,25	0,87	1,92	14,64	2,53	5,58

TECLINE Aluminum Scuba Cylinders - Seawater Net Buoyancy Comparison (S40 vs S50 vs S80)

