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Spectral Dynamics Water-Cooled Shaker Systems

Consolidated Technical Summary — Shaker · Amplifier · Water Cooling Unit

Spectral Dynamics, Inc. | 7 water-cooled systems | Compiled 18 Aug 2026

All values shown in multiple units — Force: lbf / N / kgf · Displacement: in / mm · Velocity: in/sec / m/s · Mass: lbm / kg

1. SD-13200LS3-450 / DPA603A / WCU1

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 13,264 lbf / 59,000 N / 6,016 kgf Random: 13,264 lbf / 59,000 N / 6,016 kgf Shock: 26,527 lbf / 118,000 N / 12,033 kgf
Armature / Table Diameter	450 mm (17.72 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.48 in / 63 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	1,102 lbm / 500 kg
Amplifier Rated Capacity	60 kVA (DPA603A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 125 kVA
Usable Frequency Range	5 – 2,700 Hz
Water Cooling Unit	WCU1 — 100 kW heat exchanger + outdoor water tower (150 L/min)



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2. SD-20000LS3-450 / DPA104A / WCU1

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 20,008 lbf / 89,000 N / 9,075 kgf Random: 20,008 lbf / 89,000 N / 9,075 kgf Shock: 40,016 lbf / 178,000 N / 18,151 kgf
Armature / Table Diameter	450 mm (17.72 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.48 in / 63 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	Standard: 2,205 lbm / 1,000 kg Optional: 4,409 lbm / 2,000 kg
Amplifier Rated Capacity	100 kVA (DPA104A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 160 kVA
Usable Frequency Range	5 – 2,700 Hz
Water Cooling Unit	WCU1 — 100 kW heat exchanger + outdoor water tower (150 L/min)



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3. SD-26400LS3-550 / DPA124A / WCU1

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 26,977 lbf / 120,000 N / 12,237 kgf Random: 24,279 lbf / 108,000 N / 11,013 kgf Shock: 53,954 lbf / 240,000 N / 24,473 kgf
Armature / Table Diameter	550 mm (21.65 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.48 in / 63 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	Standard: 2,205 lbm / 1,000 kg Optional: 4,409 lbm / 2,000 kg
Amplifier Rated Capacity	120 kVA (DPA124A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 200 kVA
Usable Frequency Range	5 – 2,500 Hz
Water Cooling Unit	WCU1 — 100 kW heat exchanger + outdoor water tower (200 L/min)



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4. SD-26400LS4-550 / DPA124A / WCU1

Water-Cooled System — Long Stroke (4")

Force (Sine / Random / Shock)	Sine: 26,977 lbf / 120,000 N / 12,237 kgf Random: 24,279 lbf / 108,000 N / 11,013 kgf Shock: 53,954 lbf / 240,000 N / 24,473 kgf
Armature / Table Diameter	550 mm (21.65 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 3.94 in / 100 mm Continuous: 3.54 in / 90 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	2,205 lbm / 1,000 kg
Amplifier Rated Capacity	120 kVA (DPA124A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 200 kVA
Usable Frequency Range	5 - 2,400 Hz
Water Cooling Unit	WCU1 — 100 kW heat exchanger + outdoor water tower (200 L/min)



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5. SD-35000LS3-650 / DPA184A / WCU2

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 35,295 lbf / 157,000 N / 16,010 kgf Random: 30,799 lbf / 137,000 N / 13,970 kgf Shock: 70,590 lbf / 314,000 N / 32,019 kgf
Armature / Table Diameter	650 mm (25.59 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.48 in / 63 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	Standard: 3,086 lbm / 1,400 kg Optional: 5,512 lbm / 2,500 kg
Amplifier Rated Capacity	180 kVA (DPA184A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 230 kVA
Usable Frequency Range	5 – 2,200 Hz
Water Cooling Unit	WCU2 — 220 kW heat exchanger + outdoor water tower (200 L/min)



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6. SD-44000LS3-650 / DPA244A / WCU2

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 44,063 lbf / 196,000 N / 19,986 kgf Random: 39,566 lbf / 176,000 N / 17,947 kgf Shock: 88,125 lbf / 392,000 N / 39,973 kgf
Armature / Table Diameter	650 mm (25.59 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.48 in / 63 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	Standard: 3,086 lbm / 1,400 kg Optional: 5,512 lbm / 2,500 kg
Amplifier Rated Capacity	240 kVA (DPA244A)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 250 kVA
Usable Frequency Range	5 – 2,200 Hz
Water Cooling Unit	WCU2 — 220 kW heat exchanger + outdoor water tower (300 L/min)



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7. SD-77000LS3-870 / DPA404B / WCU3

Water-Cooled System — Long Stroke (3")

Force (Sine / Random / Shock)	Sine: 78,683 lbf / 350,000 N / 35,690 kgf Random: 62,947 lbf / 280,000 N / 28,552 kgf Shock: 155,118 lbf / 690,000 N / 70,360 kgf
Armature / Table Diameter	870 mm (34.25 in)
Armature Stroke (Max. Displacement, p-p)	Intermittent: 2.99 in / 76 mm Continuous: 2.50 in / 63.5 mm
Maximum Acceleration	100 g
Maximum Velocity	78.74 in/sec / 2 m/s
Maximum Payload Capacity (Vertical Load Support)	8,818 lbm / 4,000 kg
Amplifier Rated Capacity	400 kVA (DPA404B)
Total Power Requirement	380/415/480 VAC, 50 Hz, 3-Ph, 450 kVA (min.)
Usable Frequency Range	5 – 1,700 Hz
Water Cooling Unit	WCU3 — 350 kW heat exchanger + outdoor water tower (500 L/min)



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Master Comparison — Water-Cooled Systems

Quick-reference in single units (force normalized to lbf). Full multi-unit values are in each system's section above.

#	System	Force Sine/Random (lbf)	Arm.Di a (mm)	Stroke (mm)	Max Acc (g)	Max Vel (m/s)	Payload (kg)	Amp (kVA)	Total Pwr (kVA)
1	SD-13200LS3-450 / DPA603A / WCU1	13,264 / 13,264	450	76 / 63	100	2	500	60	125
2	SD-20000LS3-450 / DPA104A / WCU1	20,008 / 20,008	450	76 / 63	100	2	1,000 (+2,000 opt)	100	160
3	SD-26400LS3-550 / DPA124A / WCU1	26,977 / 24,279	550	76 / 63	100	2	1,000 (+2,000 opt)	120	200
4	SD-26400LS4-550 / DPA124A / WCU1	26,977 / 24,279	550	100 / 90	100	2	1,000	120	200
5	SD-35000LS3-650 / DPA184A / WCU2	35,295 / 30,799	650	76 / 63	100	2	1,400 (+2,500 opt)	180	230
6	SD-44000LS3-650 / DPA244A / WCU2	44,063 / 39,566	650	76 / 63	100	2	1,400 (+2,500 opt)	240	250
7	SD-77000LS3-870 / DPA404B / WCU3	78,683 / 62,947	870	76 / 63.5	100	2	4,000	400	450