

**Comparison of Principal Characteristics  
SMR/PRV/FRV-40**

	<i>Current SMR</i>	<i>PRV</i>	<i>NOAA-FRV</i>
<b>Ship Size</b>	Intermediate size (UNOLS Class III) Draft not to exceed 15 feet Length < 210 feet	Intermediate size (UNOLS Class III) Draft of 13'-6"	Intermediate size (UNOLS Class III) Draft of 19.4 feet Length of 206.7 feet
<b>Endurance</b>	Remain at sea for 60+ days Hotel service for 75 days	Remain at sea for 90 days	Remain at sea for 40 days
<b>Range</b>			12,000 nautical miles at 12 knots
<b>Accommodations</b>	24 Scientists (including 2 marine techs)	30 Scientists 22 Crew	19 Scientists 20 crew
<b>Speed</b>	14 knots maximum 10 knots in SS 5 Speed control +/- 0.5 knots in 0-7 knot range	14 knots maximum 8 knots in SS 5 Speed control +/- 0.2 knots in 0-7 knot range Speed control +/- 0.1 knots in 0-2 knot range	14 knots maximum 11 knots in low SS 5, 4 knots in low SS 6 Speed control continuous in 0-14 knot range
<b>Ice Strengthening</b>	ABS A1	ABS Ice Class 3	ABS Class C0
<b>Maneuvering Performance</b>	Station keeping in SS 5 at best heading Trackline to 7 knots in SS 5 w/max excursion of 50 feet	Station keeping in SS 5 at best heading	Station keeping in low SS 5 at best heading Acoustic survey trackline to 11 knots in low SS 5 w/ max excursion of 50 meters Towing trackline to 3 knots in low SS 5 w/ 160 kN tow and max excursion of 100 meters Slow speed trackline to 1.0 knot in low SS 5 w/ 17.8 kN tow and max excursion of 10 meters
<b>Seakeeping</b>		Maintain science operations in: 10 knots cruising through SS 4 8 knots cruising through SS 5 6 knots cruising through SS 6	Max roll angle of 4 degrees RMS at work stations Max pitch angle of 2.25 degrees RMS at work stations Max vertical acceleration of 0.2 g RMS at work stations Max lateral acceleration of 0.1 g RMS at work stations
<b>Deck Working Areas</b>	Stern area of 2,000 square feet Contiguous side deck of 50 feet Freeboard to working deck of 4-6 feet Deck loading of up to 1,200 lbs/sq. foot Aggregate total deck load of 45-50 tons Standard UNOLS bolt-down pattern Useable foredeck area	Stern, open area of 1,820 square feet Stern, enclosed area of 540 square feet Contiguous side deck of 88 feet Freeboard to working deck of abt. 6 feet Standard UNOLS bolt-down pattern Useable foredeck area	Stern, open area of 2,766 square feet Contiguous side deck of 100 feet Min distance from top of trawl ramp to net reel of 47 feet Freeboard to working deck of 9 feet Standard UNOLS bolt-down pattern Useable foredeck area
<b>Cranes</b>	One 20,000 lb capacity One 2,000 lb capacity for towing over-side One small crane on foredeck	One 20,000 lb capacity One 10,000 lb capacity knuckle-boom One small crane on foredeck	Two telescoping boom cranes, 13,000 lb capacity One small crane on foredeck
<b>Winches</b>	Two trawl winches One net reel One net sonde winch One gilson winch One outhaul winch One hydro winch One deep tow winch	Two hydro winches One deep tow winch	Two trawl winches One net reel One net sonde winch One gilson winch One outhaul winch Space for one drop target strength winch Two hydrographic winches One oceanographic winch
<b>Coring and Dredging</b>	Piston coring to 66 feet	Cores of 80 feet	
<b>Overboard Handling</b>	Stern A-frame Side A-frame Baltic Room with overhead rail Trawl ramp	Articulated A-frame at stern Articulated A-frame at side Baltic Room with hydraulic "squirt" boom	Stern A-frame Side A-frame Trawl ramp
<b>Control Stations</b>	Aft winch station	Aft winch station	Side winch station
<b>Towing</b>	Capable of towing packages to 10,000 lbs at 6 knots Capable of towing 25,000 lbs at 2.5 knots	Capable of towing packages to 10,000 lbs at 6 knots Capable of towing 25,000 lbs at 2.5 knots	Capable of towing at 5 knots with 36,000 lbs trawl drag in low SS 6, best heading Capable of towing at 4 knots with 36,000 lbs trawl drag at 1000 fathoms in low SS 6, all headings

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	Capable of towing in moderate ice conditions	Capable of towing in moderate ice conditions	
<b>Laboratories</b>			
	Total lab area, 2000 sq. ft.	Total lab area, 2600 sq. ft.	Total lab area, 2062 sq. ft.
	Main lab, 1000 sq. ft.	Main lab, 1175 sq. ft.	Fish Laboratory, 388 sq. ft.
	Analytical Lab, 200 sq. ft.	Analytical lab, 600 sq. ft.	Wet Laboratory, 339 sq. ft.
	Wet lab, 500 sq. ft.	Wet lab, 325 sq. ft.	Dry Laboratory, 291 sq. ft.
	Elec/computer lab, 300 sq. ft.	Elec/computer lab, 500 sq. ft.	Autosalinometer Room, 86 sq. ft.
			Chemistry Laboratory, 226 sq. ft.
			Hydrographic Laboratory, 167 sq. ft.
			Acoustic Laboratory, 140 sq. ft.
			Computer Laboratory, 328 sq. ft.
			Controlled Environment Rm, 97 sq. ft.
	Science freezers, 2 @ 100 cu. Ft.	Science freezers, 2 @ 80 cu. Ft.	Science freezer, 1 @ 389 cu. Ft.
	Science office	Science office	
	Climate control chambers, 2 (or vans)	Climate control chambers, 2	
	Electronics workshop	Electronics workshop	Electronics workshop
<b>Vans</b>			
	Two 8 x 20 (or 8 x 10) on aft deck	Two 8 x 20 (or 8 x 10) on aft deck	One 8 x 20 on aft deck
	One 8 x 20 (or 8 x 10) on foredeck		
<b>Workboats</b>			
	One RIB (SOLAS rescue boat)	Two RIB's	One RIB (SOLAS rescue boat)
	One Norwegian Ice Boat	One workboat	One workboat (semi-rigid inboard diesel waterjet)
<b>Science Storage</b>			
	8,000 cu. Ft.	17,600 cu. Ft.	6,000 cu. Ft.
	Hazmat Locker	Hazmat Locker	Hazmat Locker
<b>Acoustical Systems</b>			
	ICES Cooperative Report #209	Conventional echo sounding in SS 4, acoustical DP in SS 5	ICES Cooperative Report #209
	12 kHz echo sounding system	12 kHz echo sounding system	
	3.5 kHz echo sounding system	3 kHz echo sounding system	
	Shallow water multibeam echo sounding system	Multibeam echo sounding system	Multibeam imaging sonar - Kongsberg Simrad SM2000, 90kHz
	SIMRAD EK500 with 200 kHz transducers		SIMRAD EK500 w/ 18,38,120 and 200 kHz transducers
	Side Scan Sonar	Forward looking sonar	Passive sonar
	Acoustic Doppler Profiling system (ADCP) with 150 and 300 kHz transducers	Acoustic Doppler Profiling system (ADCP) with 150 and 300 kHz transducers	Acoustic doppler current profiler w/ 75 kHz transducer
			Acoustic net mensuration system
			Net Sonde System
			Fish Finding system
	Transducer wells (2)	Transducer wells (2)	One transducer well + retractable centerboard
		Doppler speed log	
		Hull mounted transducers for dynamic positioning	
<b>Helicopter</b>			
	Land and refuel	Land and refuel	
<b>Navigation</b>			
	DGPS	GPS	DGPS
	GMDSS	DP relative and absolute in: 35 knot wind, SS 5, 1.5 knot current, depth to 6,000 m excursion plus or minus 150 ft.	GMDSS
			Inertial Reference System