

# Solid-State Landscape



	Separator	Anode	Number of Layers	Test Conditions			Source	
		Carbon or Lithium		Cycles to 80%	Current density / mA cm <sup>2</sup>	Temp / °C		Pressure / atm
EV Performance Impact				Vehicle Life	Driving Range / Fast Charge	Automotive Environmental Requirements	Automotive Environmental Requirements	
Automotive Requirement			Dozens	>800	> 3	≤30 °C	<1	
Toyota	Sulfide	Carbon/ Silicon	Not Published	Not Published	Not Published	Not Published	Not Published	NEDO 2018 presentation
ProLogium	90% ceramic / liquid		Not Published	1300	Not Published	Not Published	Not Published	Disclosed at De-Leon Conference ProLogium Brochure
Solid Power	Sulfide		2	400	0.6	45	Not Published	Solid Power Update
Ionic Materials	Polymer		1	20	0.5	30	Not Published	Disclosed at 2020 AABC
Samsung	Sulfide	Lithium Metal	2	1000	3.4	60	20	2020 paper
SES	Polymer + Liquid		31	550	C/5 rate	25	Not Published	Disclosed at 2020 AABC SES Twitter
QuantumScope	100% Ceramic		10	>800	3.0	25	3.4	QS Twitter
			4	>800	3.1	25	3.4	QS Shareholder Letter
			1	>800	3.1	25	3.4	Third-Party Testing Report

  

KEY	≥10	2-10	1	≥800	600-800	<600	≥3	<3	≤30	30-45	>45	<2	2-10	≥10
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For a detailed description of the performance metrics and separator materials characteristics please refer to [Solid-State Battery Landscape](#).

PLEASE NOTE: The data presented above is made as of November 16, 2021 and is based on information that we have been able to obtain, infer or derive from publicly disclosed materials and presentations. This information likely will change over time and QuantumScope does not make any representations as to the accuracy and completeness of the competitive data presented, nor does it make any claims about the actual performance of the cells being developed by other companies. By presenting this information, we do not undertake any obligation to update this chart to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable laws.