

Rolls Series 4500 & 5000

Flooded lead-acid batteries subject to test methods of IEC 61427-1:2013

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Summary:

Surrette Battery Company Ltd. supplied Rolls Series 5000 CS15P flooded lead-acid batteries to the Renewable Energy Storage Laboratory at Dalhousie University for performance testing in accordance with International Electrotechnical Commission standard IEC 61427-1:2013 Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 1: Photovoltaic off-grid application. Section 6 Functional characteristics were carried out using the four tests 8.1 Capacity test, 8.2 Generic cycling endurance test, 8.3 Charge retention test, and 8.4 Cycling endurance test in photovoltaic applications (extreme conditions).

The battery/cell samples were prepared and accurate measurement instruments were used in accordance with Section 7 General test conditions. Test parameters were applied in accordance with Rolls Series 5000 CS15P IEC specification sheet that lists 10 hour discharge capacity of 355 Ah when discharged to 1.75 volts-per-cell in an ambient temperature of 20 °C.

Results:

Sec. 8.1: Capacity test. Battery discharged at 10 hour delivered 1st cycle temperature-corrected discharge capacity greater than 95% of the specification value, and 5th cycle temperature-corrected discharge capacity greater than the specification value. **PASSED.**

Sec. 8.2: Generic cycling endurance test. Battery completed five General Endurance Units and continued to deliver temperature-corrected discharge capacity greater than 80% of the specification value. **PASSED.** Further units are presently ongoing.

Sec. 8.3: Charge retention test. Battery discharged after standing open circuit for 90 days delivered a retained temperature-corrected capacity of 94%. (There is no declaration of pass or fail required for this test).

Sec. 8.4: Cycling endurance test in photovoltaic applications (extreme conditions). Battery completed 7 Phase A+B Cycle Sequences and continued to deliver temperature-corrected discharge capacity greater than 80% of the specification value. **PASSED.** A+B Cycle Sequences are ongoing.

Rolls Series 4500 & 5000 product line is constructed with similar internal components and is assembled with a varying number of positive and negative plates of a similar type and design. As such, the results of this IEC 61427-1:2013 testing are consistent and apply to all Series 4500 & 5000 models. Includes: Rolls S2 L16-EX, S6 L16-EX, 2 KS 33P, 2 OS 33P, 2 YS 27P, 2 YS 31P, 2 YS 62P, 4 CS 17P, 4 KS 21P, 4 KS 25P, 4 KS 27P, 6 CS 17P, 6 CS 21P, 6 CS 25P, 6 CS 27P, 8 CS 17P, 8 CS 27P, 12 CS 11P, 16 CS 15P