



CASE STUDY: **FOUR YEARS IN THE DESERT**—Deka Fahrenheit® excels in outdoor plant without temperature controls.

THE CHALLENGE

Imagine a desert. The sand, the sun, and most of all the intense HEAT. The ultimate test for any telecom battery. The goal was to survive an independently conducted field test in one of the harshest climates in the world, the Southwest United States, enclosed in a metal cabinet with no climate controls.

THE PRODUCT

Four strings of the revolutionary **Deka Fahrenheit HT170ET** batteries (16 total batteries).

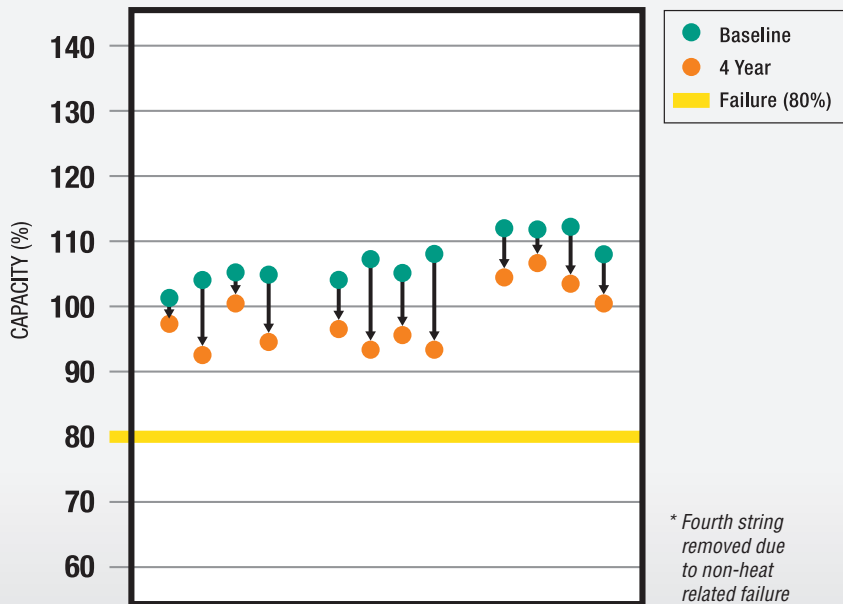
THE TEST

In 2016, these VRLA batteries were installed in cabinet cell sites located in Phoenix, AZ. The purpose of the ongoing study is a true-to-life field test with the batteries to perform until failure in a float application, just like every cellular site across the world. To test all variables, batteries were tested in both temperature and non-temperature controlled cabinets. Outside temperatures ranged from lows of 40°F in the winter to a blistering summer high of 133°F. Inside the cabinets, the temperatures reached 125°F. IEEE capacity testing was performed once per year, and 2020 was the fourth year of field testing. The temperatures of all battery units were between 70°F and 81°F prior to discharge in the report, the capacity was compared to baseline testing, and the yearly capacity change was analyzed. To certify product performance, a monitoring system was used to continually record string voltage, current, and temperature at each cell site. Data from the monitoring system was downloaded and reviewed weekly. Temperature data from local weather stations was also reviewed and noted for tracking purposes throughout the study.

*Temperatures
of the batteries
inside the
cabinets ranged
from winter
lows of 40°F
to blistering
summer highs
of 125°F.*

Deka Fahrenheit® averaged 99% capacity after an independent four-year uncontrolled test *(test still active)*.

CHART 1 **Capacity Change Four Years After Installation***



Deka Fahrenheit®

THE RESULTS

After four years, the capacity of three strings, combining both cabinets with and without temperature compensation, averaged 99%. Temperature compensation is directly related to the charging of the product such as adjusting the voltage in correlation with a colder or hotter temperature than the standard 77°F. Throughout the entire study, in addition to the superior individual battery capacity ratings, there was also minimal capacity variance *(See Chart 1)*.

TAKEAWAY *(The test is still active.)*

There are few batteries that can survive, let alone thrive for four years in the desert with external maximum temperatures reaching over 133°F. The Deka Fahrenheit thrived providing 99% capacity on average, with the majority of three strings starting out over 100% capacity, and by the end of the fourth year, all staying above 90% capacity, well above the 80% end-of-life capacity rating.

When you need a battery that's going to provide superior performance in either an uncontrolled or controlled OSP site, look no further than Deka Fahrenheit.



Deka Fahrenheit® HT170ET

PROPOSITION 65 WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. **WASH HANDS AFTER HANDLING.**



East Penn Manufacturing Co.

Lyon Station, PA 19536-0147

Phone: 610-682-3263

Fax: 610-682-4781

www.dekabatteries.com

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