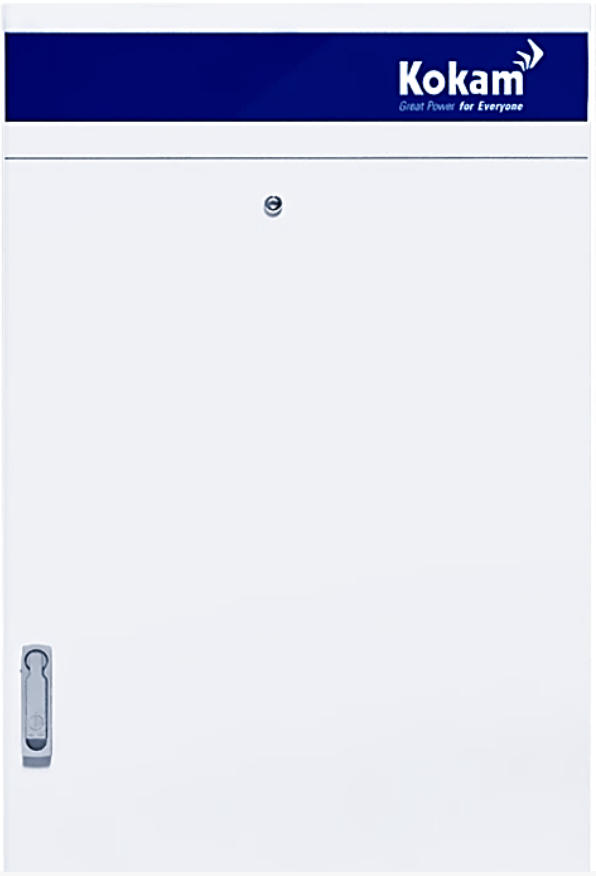
High Power Type

# 54.7kWh Battery Rack




- Highly advanced lithium-ion battery solution for mission-critical applications
- Exceptionally high power performance (Up to 9 C-rate)
- Exceedingly small footprint due to high energy density
- 2-pole and 3-pole topology available
- Long cycle and calendar life (Over 8,000 cycles and up to 15 years[1])
- Highly intelligent BMS[2] for sophisticated system control and monitoring

1. Depending on the load profile, the warranty condition may differ / 2 .BMS: Battery Management System
*The image above is a reference, and the actual product may differ from the above image



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# Battery Rack Specification

**Model: KST054644A15ADC00** **(Previous Model Name: KUPS-1C5R-175S-HP-54-P04-F06)**

| Item | | | Specification | Remarks |
|---|---|---|---|---|
| **Electrical** | | | | |
| Configuration | | Rack | 5 modules in series | - |
| | | Module | 1P35S | 10.9kWh / KMD255109P135A0 |
| | | Cell | High Power | 85Ah / KCL255085PN0 |
| Installed Energy | | | 54.7kWh | - |
| Usable Energy[1] | | | 50.3kWh | @ 1P discharge, BOL |
| Nominal Voltage | | | 644.0Vdc | - |
| Operating Voltage Range | | | 560.0 ~ 722.7Vdc | - |
| Float Voltage | | | 715.7Vdc | - |
| Charging | Power | Rated | 54.7kW | 1P |
| | | Max[2] | 109.4kW | 2P |
| | Current | Rated | 85.0A | 1C |
| | | Max[2] | 170.0A | 2C |
| Discharging | Power | Rated | 54.7kW | 1P |
| | | Max[2] | 322.0kW | 5.8P, ≤7 min. |
| | | Peak | 383.1kW | 7P, ≤5 min 30 sec. |
| | | | 437.9kW | 8P, ≤4 min 20 sec. |
| | | | 492.6kW | 9P, ≤1 min. |
| | Current | Rated | 85.0A | 1C |
| | | Max[2] | 500.0A | 5.8C, ≤7 min. |
| | | Peak | 595.0A | 7C, ≤5 min 30 sec. |
| | | | 680.0A | 8C, ≤4 min 20 sec. |
| | | | 765.0A | 9C, ≤1 min. |
| Round Trip DC Efficiency | | | >95% | @ 1P, BOL |
| Control Power | | | DC 24V | - |
| **Mechanical** | | | | |
| Dimension | | | 580 (W) x 740 (D) x 2,300 (H) mm | ±5mm |
| Weight | | | Approx. 683kg | ±5% |
| IP Grade | | | 20 | - |
| **Communication** | | | | |
| Communication Interface | | | Ethernet/RS-485 | Modbus TCP/ Modbus RTU |
| Monitoring | | | RS-232C | - |
| **Operating Conditions** | | | | |
| Operating Temperature[3] | Charging | | 0 ~ 10℃ | <0.2P |
| | | | 10 ~ 35℃ | <2P |
| | | | 35 ~ 45℃ | <1P |
| | Discharging | | 0 ~ 55℃ | - |
| **Environment** | | | | |
| Ambient Temperature | | | 23±5℃ | - |
| Storage Humidity | | | <60±25% RH | Non-condensing |
| Storage Temperature[4] | 1 Year | | -20 ~ 25℃ | 30≤ SOC ≤50% |
| | 6 Months | | -20 ~ 35℃ | |
| | 3 Months | | -20 ~ 45℃ | |
| | <1 Week | | -20 ~ 60℃ | |
| **Expected Cycle & Calendar Life[5]** | | | | |
| Cycle Life @ DoD 90% | | | ≥6,000 cycles | @ 25±3℃, 1C/1C, SOH 70% |
| Cycle Life @ DoD 80% | | | ≥8,000 cycles | @ 25±3℃, 1C/1C, SOH 70% |
| Calendar Life | | | Up to 15 years | @ 25±3℃, SOC ≤80%, SOH 70% |
| **Certification & Compliance** | | | | |
| Certifications[6] | | | UL 1642, UL 1973, IEC 62619, UL 9540A, UN 38.3 | Cell level |
| | | | CE, IEC 62619, UN 38.3 | Module level |
| | | | CE, IEC 62619, IEC 60730-1 Annex H | Rack level |
| Compliance | | | RoHS II, REACH | - |

*P : Power-rate / C : Current-rate

1. The usable energy may change depending on the calendar life of the battery cells.
2. After max. charging or discharging, it is recommended to rest the battery rack until the cell temperature returns to 23±5℃.
3. Operating temperature is based on the cell temperature.
4. When resting the battery system after an operation for longer than 1 month, the user shall ensure that the SOC is above 30%. The ambient temperature shall be controlled at 23±5℃ when resting the battery system. During storage, the temperature and SOC conditions shall always be adhered to.
5. Cycle and calendar life shall be depending on the load profile, and the warranty condition may differ according to Kokam Limited Product Warranty.
6. Certification update (incl. model name). Expected to be completed in 1Q 2022.





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