

stored energy solutions for a demanding world

Narada

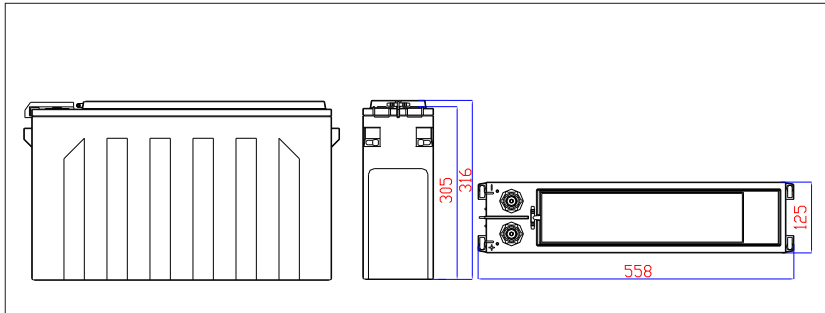
Model: **12NDT190S**

Acme

The Acme T range of front access VRLA batteries has been specifically designed for applications using 19" and 23" cabinets, especially telecoms. Reliability is assured with the patented post seal and a state-of-the-art design developed to comply with the latest IEC, British and Telcordia standards. A 12+ years design life and centralised venting system add to the suitability and flexibility of this superior range.



Dimensions—mm



Specifications

| Battery Model | 12NDT190S |
|--|---|
| Nominal Voltage | 12V |
| Rated Capacity | 190Ah (10 hour rate) to 1.80V/cell @25°C(77°F) |
| Typical Weight | 59.0 kg |
| Internal Resistance | Approx 4.28mΩ |
| Temperature Ranges | Operation (maximum): -40°C to 55°C(-40°F to 131°F) |
| | Operation (recommended): 15°C to 25°C(59°F to 77°F) |
| | Storage: -20°C to 40°C(-4°F to 104°F) |
| Float Voltage | 2.25V/cell@25°C(77°F) |
| Recommended Maximum Charging Current Limit | 47.5 A |
| Equalize and Cycle Service | 2.35V/cell@25°C(77°F) |
| Self Discharge | The residual capacity is above 91% after 90 days storage(25°C/77°F) |
| Terminal | M6 Female |
| Terminal Hardware Torque | 8~10Nm |
| Container Material | ABS (V0 optional) |

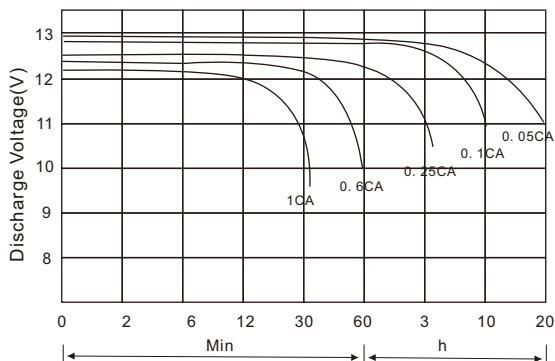
Constant Current Discharge Characteristics Units: Amperes (25°C, 77°F)

| End voltage per cell | 5MIN | 15MIN | 30MIN | 45MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR | 12HR | 20HR | 24HR |
|----------------------|------|-------|-------|-------|-----|------|------|------|------|------|------|------|------|------|------|
| 1.60V | 519 | 317 | 208 | 158 | 128 | 75.0 | 53.8 | 42.3 | 34.9 | 29.8 | 23.2 | 20.8 | 17.7 | 12.5 | 10.8 |
| 1.67V | 479 | 307 | 205 | 156 | 127 | 74.4 | 53.3 | 41.9 | 34.6 | 29.6 | 23.1 | 20.7 | 17.7 | 12.4 | 10.6 |
| 1.70V | 463 | 300 | 202 | 154 | 126 | 74.2 | 53.3 | 41.9 | 34.6 | 29.5 | 23.0 | 20.5 | 17.4 | 12.2 | 10.4 |
| 1.75V | 423 | 272 | 190 | 149 | 124 | 74.0 | 53.2 | 41.8 | 34.5 | 29.4 | 22.8 | 19.9 | 16.5 | 10.5 | 8.50 |
| 1.80V | 350 | 245 | 179 | 144 | 121 | 73.9 | 53.1 | 41.6 | 34.4 | 29.2 | 22.2 | 19.0 | 16.3 | 10.2 | 8.53 |
| 1.83V | 326 | 232 | 171 | 139 | 117 | 73.7 | 52.8 | 41.4 | 34.2 | 29.0 | 21.7 | 18.6 | 16.0 | 9.88 | 8.26 |
| 1.85V | 310 | 219 | 162 | 132 | 112 | 70.7 | 51.9 | 40.9 | 33.6 | 28.4 | 21.4 | 18.5 | 15.3 | 9.11 | 7.49 |

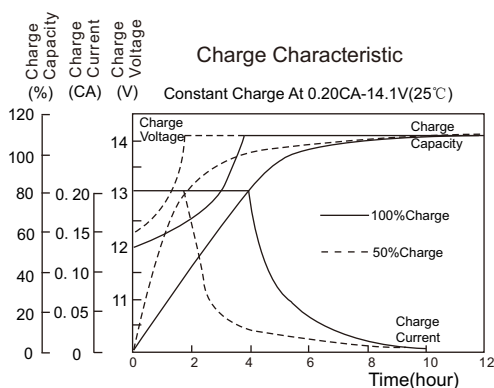
Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)

| End voltage per cell | 5MIN | 15MIN | 30MIN | 45MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR | 12HR | 20HR | 24HR |
|----------------------|------|-------|-------|-------|-----|-----|-----|------|------|------|------|------|------|------|------|
| 1.60V | 896 | 589 | 399 | 307 | 251 | 149 | 107 | 84.5 | 70.8 | 60.0 | 46.9 | 42.1 | 36.0 | 23.3 | 20.0 |
| 1.67V | 843 | 565 | 388 | 301 | 247 | 148 | 107 | 84.5 | 70.7 | 59.9 | 46.7 | 41.8 | 35.6 | 22.6 | 19.3 |
| 1.70V | 815 | 549 | 381 | 297 | 245 | 148 | 107 | 84.4 | 70.6 | 59.8 | 46.7 | 41.6 | 35.3 | 22.1 | 18.7 |
| 1.75V | 753 | 510 | 362 | 287 | 239 | 147 | 107 | 84.2 | 70.4 | 59.7 | 46.4 | 40.9 | 34.3 | 20.6 | 17.0 |
| 1.80V | 635 | 455 | 339 | 276 | 235 | 147 | 107 | 84.1 | 70.2 | 59.5 | 45.4 | 39.2 | 32.2 | 18.8 | 16.1 |
| 1.83V | 597 | 434 | 327 | 267 | 228 | 146 | 106 | 83.9 | 70.1 | 59.3 | 44.8 | 38.6 | 31.7 | 17.5 | 14.9 |
| 1.85V | 570 | 415 | 314 | 257 | 220 | 142 | 105 | 83.3 | 68.7 | 58.3 | 44.2 | 38.3 | 31.6 | 16.4 | 14.0 |

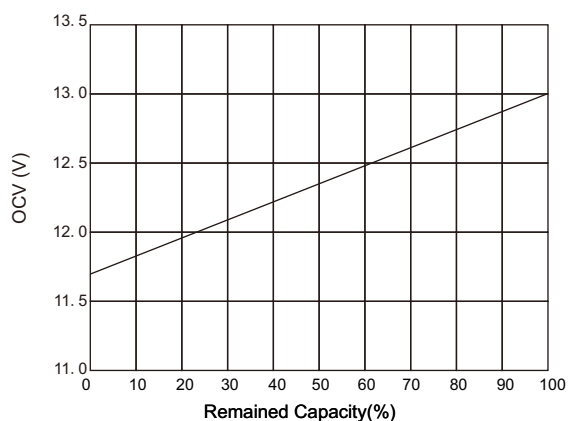
Terminal Voltage(V) Vs. Discharge Time (25°C, 77°F)



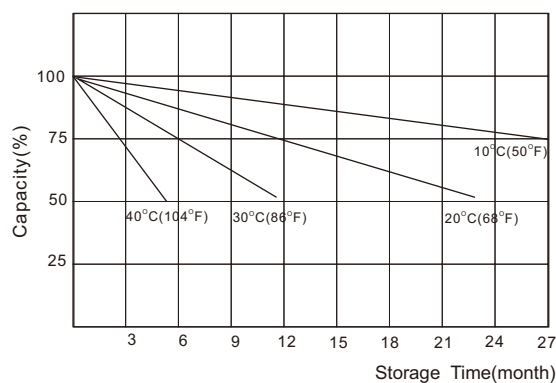
Battery Voltage Vs. Charge Time



Relationship of OCV Vs. State of Charge



Capacity Retention Characteristic



Charging Procedures

| Application | Charge Voltage (V/Cell) | | | Max. Charge Current |
|-------------|-------------------------|-----------|-----------------|---------------------|
| | Temperature | Set Point | Allowable Range | |
| Cycle | 25°C | 2.40 | 2.35~2.40 | 0.25C |
| Standby | 25°C | 2.25 | 2.23~2.27 | |

Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/Cell | 1.80 | 1.70 | 1.55 | 1.30 |
|--------------------------------|------------|-------------------|-------------------|------------|
| Discharge Current (A) | 0.2C ≥ (A) | 0.2C < (A) < 0.5C | 0.5C < (A) < 1.0C | (A) > 1.0C |

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