

stored energy solutions for a demanding world

**Narada**

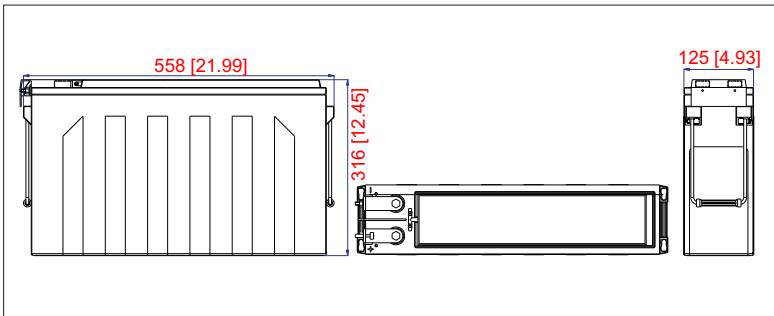
Model: **12NDT190**

**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 [inch]**



**Specifications**

Battery Model	12NDT190
Nominal Voltage	12V
Rated Capacity	190Ah (10 hour rate) to 1.80V/cell @25°C(77°F)
Typical Weight	60.5kg
Internal Resistance	Approx 3.98mΩ
Temperature Ranges	Operation (maximum): -40°C to 50°C(-40°F to 122°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	47.5A
Equalize and Cycle Service	2.35V~2.40V/cell@25°C(77°F)
Self Discharge	The residual capacity is above 90% after 90 days storage(25°C/77°F)
Terminal	M6 Female
Terminal Hardware Torque	8 ± 1.0Nm
Container Material	ABS (V0 optional)

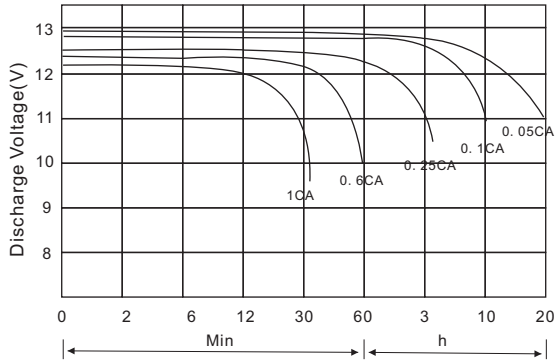
**Constant Current Discharge Characteristics Units: Amperes (25°C, 77°F)**

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	532	334	220	162	132	76.4	54.2	42.8	36.3	30.7	24.3	19.5	16.8	10.5	8.72
1.67V	498	328	216	161	131	75.7	53.9	42.7	36.1	30.4	24.1	19.4	16.7	10.4	8.64
1.70V	480	322	213	160	130	75.4	53.7	42.6	36.0	30.3	24.0	19.3	16.6	10.3	8.60
1.75V	456	308	205	157	129	74.7	53.4	42.4	35.8	30.0	23.8	19.1	16.5	10.2	8.53
1.80V	410	283	193	150	125	73.2	52.6	42.0	35.2	29.5	23.6	19.0	16.4	10.2	8.49
1.83V	374	265	184	144	122	71.3	51.6	41.5	34.4	28.7	23.3	18.9	16.3	10.1	8.44
1.85V	355	252	179	138	119	69.4	50.7	41.0	33.9	28.4	23.0	18.8	16.2	10.1	8.39

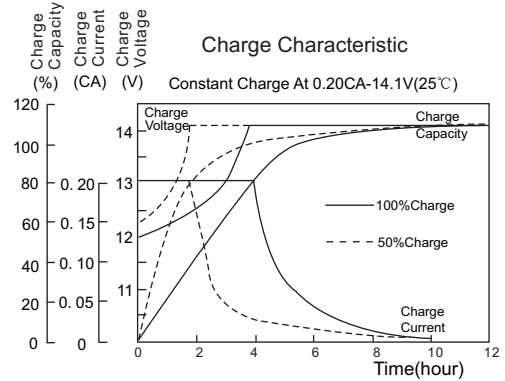
**Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)**

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	928	616	395	317	269	159	113	88.1	74.2	63.1	48.5	41.6	36.0	22.1	18.4
1.67V	877	600	392	315	268	159	113	87.8	73.9	62.9	48.3	41.5	35.9	21.9	18.3
1.70V	846	588	389	314	267	158	112	87.6	73.6	62.8	48.2	41.5	35.8	21.7	18.3
1.75V	781	566	382	309	263	157	112	87.1	73.1	62.5	47.9	41.4	35.7	21.5	18.2
1.80V	718	535	370	300	256	154	110	86.0	72.1	62.0	47.6	41.2	35.5	21.2	18.2
1.83V	697	507	359	291	249	150	108	85.0	71.0	61.3	47.4	40.9	35.3	21.0	18.1
1.85V	683	483	351	285	244	147	105	83.9	69.8	60.6	47.1	40.7	35.0	20.7	18.0

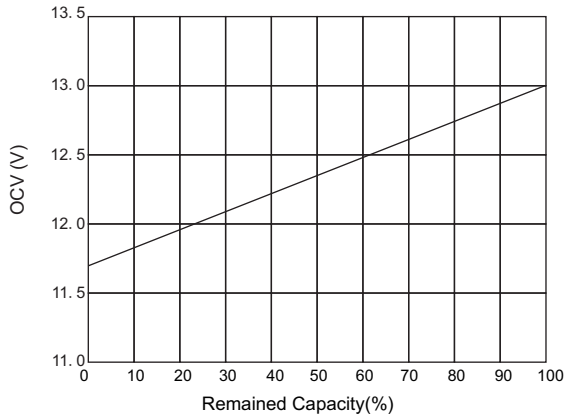
Terminal Voltage(V) Vs. Discharge Time (25°C, 77°F)



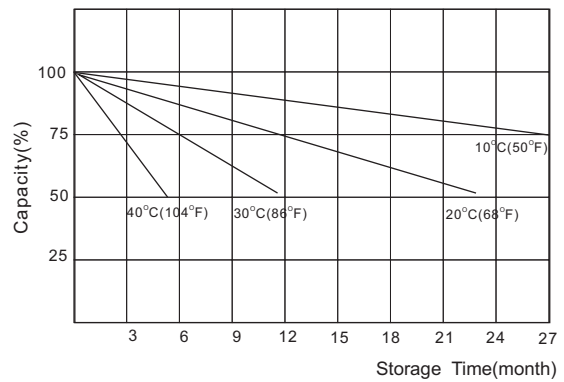
Battery Voltage Vs. Charge Time



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

**NARADA POWER SOURCE CO.,LTD.**  
 9F, Building A, No. 50 Zijinghua Road, Hangzhou, China  
 Tel:+86-571-28827013 Fax:+86-571-28828290  
 Website:www.naradabattery.com E-mail:intl@narada.biz

**NARADA ASIA PACIFIC PTE.LTD.**  
 65 Ubi Crescent #07-05 HOLA centre, Singapore  
 Tel: +65-6848 1191 Fax: +65-6749 3498  
 E-mail: sales@narada.com.sg

**NARADA EUROPE (UK) LIMITED**  
 Spectrum House, Dunstable Road, Redbourn,  
 St. Albans, Herts AL3 7PR  
 Tel: +44 (0)845 371 7095 Fax:+44 (0)845 612 2031  
 E-mail: sales@naradaeurope.com

