

stored energy solutions for a demanding world

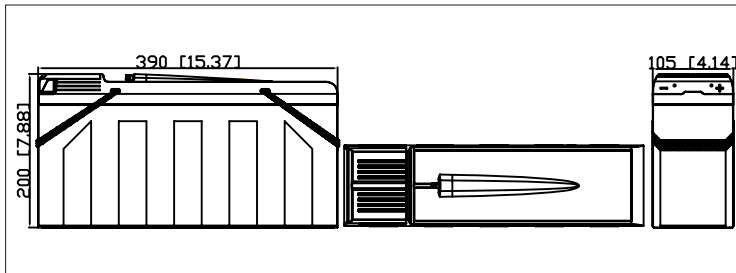
Narada

Model: **12NDF50**

Acme-F

The Acme F 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 AGM 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	12NDF50
Nominal Voltage	12V
Rated Capacity	50Ah (10 hour rate) to 1.80V/cell @25°C(77°F)
Typical Weight	21kg
Internal Resistance	Approx 8.87mΩ
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	12.5A
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)

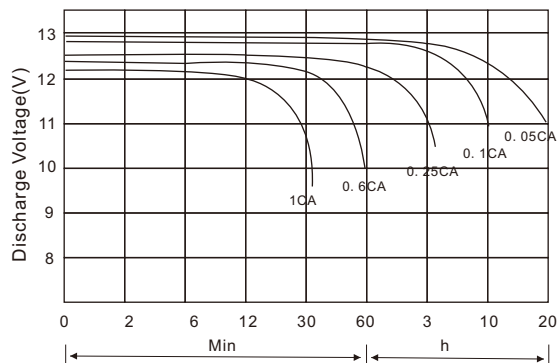
Constant Current Discharge Characteristics Units: Amperes (25°C, 77°F)

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	188	101	61.2	44.3	35.8	20.6	14.9	11.7	9.88	8.49	6.51	5.36	4.52	2.83	2.36
1.67V	176	97.4	60.1	44.0	35.6	20.4	14.6	11.6	9.83	8.41	6.47	5.28	4.51	2.80	2.34
1.70V	175	95.7	59.3	43.7	35.4	20.3	14.6	11.6	9.67	8.35	6.44	5.28	4.46	2.80	2.34
1.75V	160	92.7	58.7	43.4	34.8	19.8	14.4	11.4	9.62	8.28	6.37	5.25	4.46	2.79	2.34
1.80V	144	86.4	56.2	41.6	33.9	19.6	14.3	11.4	9.42	8.11	6.33	5.20	4.43	2.76	2.33
1.83V	137	79.2	55.2	40.2	32.5	19.4	13.8	10.9	9.11	7.83	6.18	5.01	4.21	2.76	2.30
1.85V	129	76.7	51.3	38.6	31.5	18.6	13.4	10.7	8.89	7.66	5.98	4.97	4.16	2.70	2.28

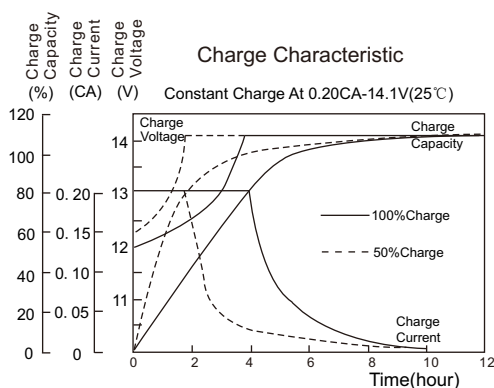
Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)

End voltage per cell	5MIN	15MIN	30MIN	45MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	12HR	20HR	24HR
1.60V	314	177	111	83.2	67.4	38.8	28.3	22.5	18.9	16.3	12.6	10.4	8.74	5.60	4.69
1.67V	302	174	110	82.7	67.0	38.7	28.0	22.4	18.9	16.2	12.6	10.3	8.74	5.58	4.69
1.70V	301	172	110	82.6	66.8	38.5	28.0	22.3	18.7	16.1	12.5	10.2	8.66	5.57	4.68
1.75V	280	171	109	82.4	65.8	38.3	27.7	22.3	18.7	16.1	12.4	10.2	8.66	5.55	4.68
1.80V	257	162	107	80.4	65.7	38.2	27.6	22.2	18.3	15.9	12.3	10.2	8.63	5.55	4.67
1.83V	246	148	105	78.0	63.0	37.7	27.0	21.4	17.9	15.4	12.2	9.91	8.37	5.54	4.64
1.85V	230	144	97.9	74.9	61.0	36.5	26.2	21.1	17.5	15.1	11.8	9.83	8.28	5.44	4.60

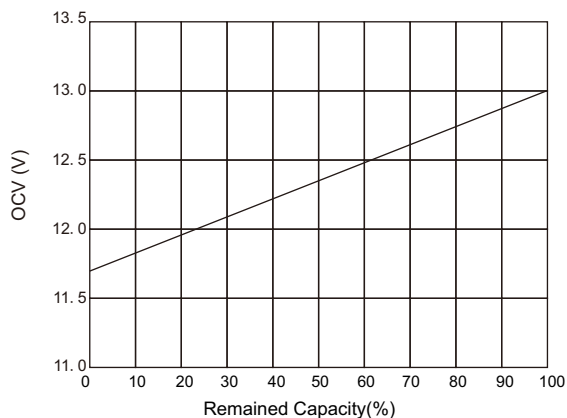
Terminal Voltage(V) Vs. Discharge Time (25°C, 77°F)



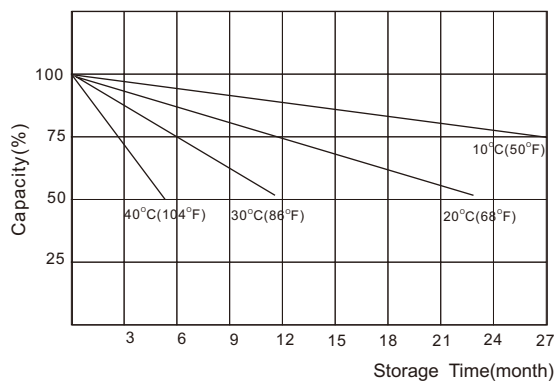
Battery Voltage Vs. Charge Time



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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