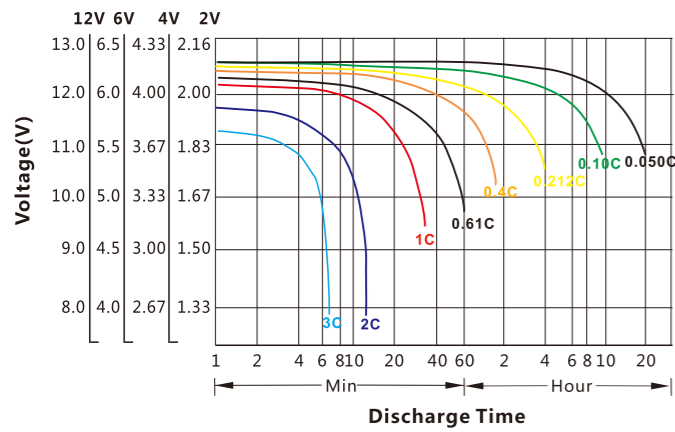
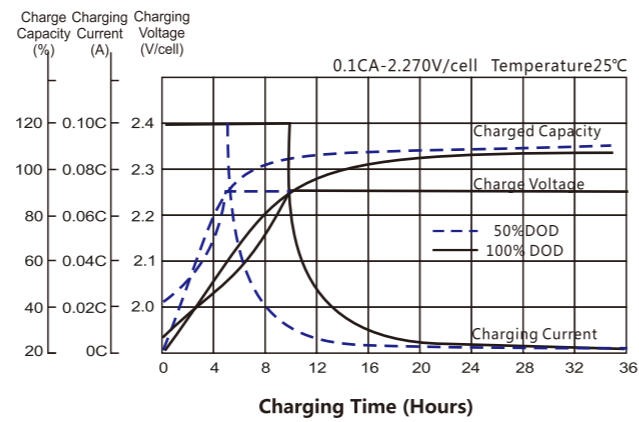


## Performance Curve

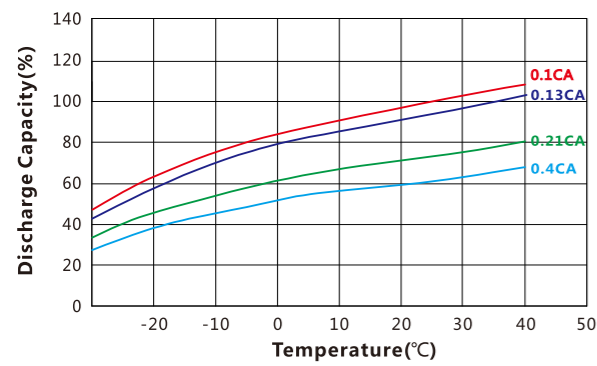
Discharging Characteristics (25°C/77°F)



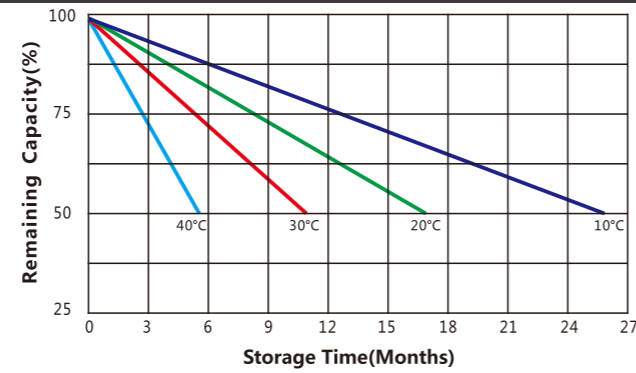
Charging Characteristics (25°C/77°F)



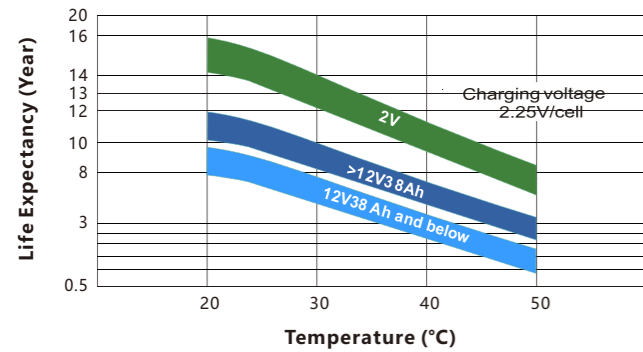
Capacity Effected by Temperature



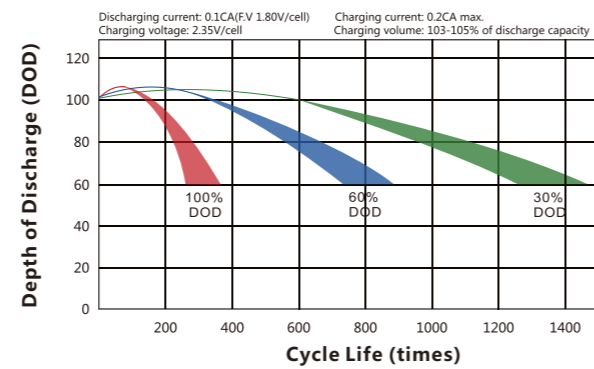
Self Discharge Characteristics



Float Life with Different Temperature



Cycle Life with Different DOD



HKEx Code: 00819



# TNL Series

Maintenance Free VRLA Battery  
Long Life AGM Battery



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## Industry Reserve Battery- TNL Series (Long Life AGM Battery)

The TNL Series is long life valve regulated lead acid (VRLA) AGM battery which combine TN power's industry scale and advanced equipment together to provide high reliability product and the most competitive price. This range offers over 12 years design life, it is highly suited to cyclic or standby application.



- ☑ Cycle or standby (or float) application.
- ☑ Long life, low self-discharge rate and high reliability.
- ☑ It has safety, low resistance so recharge is easy and energy output is more remarkable.
- ☑ Deep discharge recoverability.
- ☑ Strictly manufacture process control and high consistency .
- ☑ ISO9001, ISO14001 certified.
- ☑ UL, IEC60896-21&22, TLC, CE and European council Directive 2006/66/EC

### CONSTRUCTION

- ✦ **Positive plate** – Thicker patent rare earth alloy grid with special paste for corrosion resistance
- ✦ **Negative plate** – Balanced Pb-Ca grid for improved recombination efficiency
- ✦ **Separator** – Advanced AGM separator for high pressure cell design, The electrolyte is completely absorbed into the
- ✦ **Electrolyte** – Dilute high purity sulphuric acid
- ✦ **Battery container and cover** – ABS UL94-HB (Flame-retant ABS UL94-V0 is optional)

### APPLICATION

- **Standby Use:**
  - Uninterrupted Power Supply (UPS)
  - Communications and electric equipment
  - Emergency lighting equipment
  - Fire alarm and security systems
  - Robots, control equipment, and other factory automation equipment
  - Emergency power supply (EPS) in power generation plants and substations

#### Cycle Use:

- Portable VTR/TV, radio and so on
- Power tools, lawn mowers, vacuum cleaners
- Cameras and photographic equipment
- Portable measuring equipment
- Portable telephone sets
- Various power toys and hobby equipment
- Lighting equipment

## Product Specification

Model	Nominal Voltage (V)	Nominal capacity C <sub>10</sub> (Ah) 1.80Vpc/25°C	Nominal capacity C <sub>20</sub> (Ah) 1.80Vpc/25°C	Dimension (mm)				Weight (kg)	Dimension (inch)				Weight (lbs)	Terminal
				L	W	H	TH		L	W	H	TH		
TNL12-8.0	12	7.5	8.0	151	65.5	93.5	99.5	2.57	5.94	2.58	3.68	3.92	5.67	T1/T2
TNL12-12	12	11.4	12.0	151	99.5	95.5	101.5	4.05	5.94	3.92	3.76	4.00	8.93	T1/T2
TNL12-18	12	17.0	18.0	182	77	170	170	5.70	7.17	3.03	6.69	6.69	12.57	L1
TNL12-24H	12	22.8	24.0	166	126.5	172.5	172.5	8.45	6.54	4.98	6.79	6.79	18.63	I1
TNL12-24	12	22.8	24.0	166	175	125	125	7.80	6.54	6.89	4.92	4.92	17.20	I1
TNL12-26	12	24.7	26.0	166	175	125	125	8.40	6.54	6.89	4.92	4.92	18.52	L1
TNL12-28H	12	26.6	28.0	166	126.5	172.5	172.5	9.10	6.54	4.98	6.79	6.79	20.06	L2
TNL12-28	12	28.0	29.8	166	175	125	125	8.60	6.54	6.89	4.92	4.92	18.96	L1
TNL12-38	12	38.0	40.6	198.5	166	169.5	169.5	13.20	7.81	6.54	6.67	6.67	29.10	I3
TNL12-45	12	42.0	44.9	198.5	166	169.5	169.5	14.50	7.81	6.54	6.67	6.67	31.97	I3
TNL12-50	12	50.0	53.4	257	133	200	200	17.60	10.12	5.24	7.87	7.87	38.80	I3
TNL12-55	12	55.0	58.7	229	138.5	211	216	17.70	9.02	5.45	8.31	8.50	39.02	I3
TNL12-60	12	60.0	64.1	260	168	211	213.5	20.70	10.24	6.61	8.19	8.43	45.64	I3
TNL12-65	12	65.0	69.4	350	167	180	180	21.00	13.78	6.57	7.09	7.09	46.30	I3
TNL12-75	12	75.0	80.1	260	168	211	213.5	24.00	10.24	6.61	8.31	8.41	52.91	I3
TNL12-90	12	90.0	96.1	306.5	168	208.5	211	29.00	12.01	6.61	8.21	8.31	63.93	I3
TNL12-90L	12	90.0	96.1	330	172	214	221.5	29.00	12.99	6.77	8.43	8.72	63.93	I7
TNL12-100	12	100.0	106.8	330	172	214	221.5	32.00	12.99	6.77	8.43	8.72	70.55	I7
TNL12-100E	12	95.2	100.0	330	172	214	221.5	28.00	12.99	6.77	8.43	8.72	61.73	I7
TNL12-120	12	120.0	128.2	408	171	225	225	35.80	16.10	6.73	8.86	8.86	78.92	I7
TNL12-150	12	150.0	160.2	480	170	240	240	45.00	18.90	6.69	9.45	9.45	99.21	I7
TNL12-180	12	186.0	198.6	532	207	215	220	57.00	20.94	8.15	8.46	8.66	125.66	I7
TNL12-200	12	200.0	213.6	520	239	220	225	65.50	20.47	9.41	8.66	8.86	144.40	I7
TNL12-250	12	250.0	267.0	522	268	220	225	72.50	20.55	10.55	8.66	8.90	159.83	I7

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TNL2-200	2	200	214	170	106	330	341.5	13.70	6.69	4.17	12.99	13.44	30.20	I7
TNL2-300	2	300	321	170	150	330	341.5	18.80	6.69	5.91	12.99	13.44	41.45	I7
TNL2-400	2	400	428	170	150	330	341.5	26.40	6.69	5.91	12.99	13.44	58.20	I7
TNL2-500	2	500	535	240	170	330	341.5	30.50	9.45	6.69	12.99	13.44	67.24	I7
TNL2-600	2	600	642	285	170	330	341.5	36.60	11.22	6.69	12.99	13.44	80.69	I7
TNL2-800	2	800	856	382	170	330	341.5	50.40	15.04	6.69	12.99	13.44	111.11	I7
TNL2-1000	2	1000	1070	470	170	330	341.5	60.00	18.50	6.69	12.99	13.44	132.28	I7





# TNL Series

Maintenance Free VRLA Battery  
Long Life AGM Battery



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- ✦ **Positive plate** – Thicker patent rare earth alloy grid with special paste for corrosion resistance
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## Product Specification

Model	Nominal Voltage (V)	Nominal capacity C <sub>10</sub> (Ah) 1.80Vpc/25°C	Nominal capacity C <sub>20</sub> (Ah) 1.80Vpc/25°C	Dimension (mm)				Weight (kg)	Dimension (inch)				Weight (lbs)	Terminal
				L	W	H	TH		L	W	H	TH		
TNL12-7.2	12	7.2	7.7	151	65.5	93.5	99.5	2.57	5.94	2.58	3.68	3.92	5.67	T1/T2
TNL12-12	12	12.0	12.8	151	99.5	95.5	101.5	4.05	5.94	3.92	3.76	4.00	8.93	T1/T2
TNL12-18	12	18.0	19.2	182	77	170	170	5.70	7.17	3.03	6.69	6.69	12.57	L1
TNL12-24H	12	24.0	25.6	166	126.5	172.5	172.5	8.45	6.54	4.98	6.79	6.79	18.63	I1
TNL12-24	12	24.0	25.6	166	175	125	125	7.80	6.54	6.89	4.92	4.92	17.20	I1
TNL12-26	12	26.0	27.7	166	175	125	125	8.40	6.54	6.89	4.92	4.92	18.52	L1
TNL12-28H	12	28.0	29.8	166	126.5	172.5	172.5	9.10	6.54	4.98	6.79	6.79	20.06	L2
TNL12-28	12	28.0	29.8	166	175	125	125	8.60	6.54	6.89	4.92	4.92	18.96	L1
TNL12-38	12	38.0	40.6	198.5	166	169.5	169.5	13.20	7.81	6.54	6.67	6.67	29.10	I3
TNL12-45	12	42.0	44.9	198.5	166	169.5	169.5	14.50	7.81	6.54	6.67	6.67	31.97	I3
TNL12-50	12	50.0	53.4	257	133	200	200	15.80	10.12	5.24	7.87	7.87	34.83	I3
TNL12-55	12	55.0	58.7	229	138	210	216	17.70	9.02	5.43	8.27	8.50	39.02	I3
TNL12-60	12	60.0	64.1	260	168	208	214	20.70	10.24	6.61	8.19	8.43	45.64	I3
TNL12-65	12	65.0	69.4	350	167	180	180	21.20	13.78	6.57	7.09	7.09	46.74	I3
TNL12-70	12	70.0	74.8	350	167	180	180	24.00	13.78	6.57	7.09	7.09	52.91	I3
TNL12-75	12	75.0	80.1	260	168	211	213.5	22.80	10.24	6.61	8.31	8.41	50.26	I3
TNL12-90	12	90.0	96.1	306.5	168	208.5	211	27.60	12.07	6.61	8.21	8.31	60.85	I3
TNL12-90L	12	90.0	96.1	330	172	214	221.5	29.00	12.99	6.77	8.43	8.72	63.93	I7
TNL12-100	12	100.0	106.8	330	172	214	221.5	32.00	12.99	6.77	8.43	8.72	70.55	I7
TNL12-100E	12	95.2	100.0	330	172	214	221.5	28.00	12.99	6.77	8.43	8.72	61.73	I7
TNL12-120	12	120.0	128.2	408	177	224	224	37.00	16.06	6.97	8.82	8.82	81.57	I7
TNL12-140	12	140.0	149.5	345	172	274	280	45.50	13.58	6.77	10.79	11.02	100.31	I7
TNL12-150	12	150.0	160.2	480	170	240	240	47.50	18.90	6.69	9.45	9.45	104.72	I7
TNL12-180	12	186.0	198.6	532	207	215	220	57.00	20.94	8.15	8.46	8.66	125.66	I7
TNL12-200	12	200.0	213.6	520	239	220	225	65.50	20.47	9.41	8.66	8.86	144.40	I7
TNL12-250	12	250.0	267.0	522	268	220	226	75.50	20.55	10.55	8.66	8.90	166.45	I7

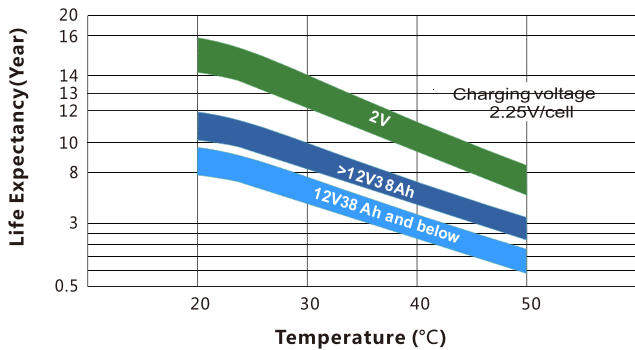
Model	Nominal Voltage (V)	Nominal capacity C <sub>10</sub> (Ah) 1.80Vpc/25°C	Nominal capacity C <sub>20</sub> (Ah) 1.80Vpc/25°C	Dimension (mm)				Weight (kg)	Dimension (inch)				Weight (lbs)	Terminal
				L	W	H	TH		L	W	H	TH		
TNL6-100	6	100.0	106.8	195	170	206.5	212.5	16.50	7.68	6.69	8.13	8.37	36.38	I4
TNL6-200	6	200.0	213.6	322	178	226	231	35.00	12.68	7.01	8.90	9.09	77.16	I7
TNL2-200	2	200	214	170	106	330	341.5	13.70	6.69	4.17	12.99	13.44	30.20	I7
TNL2-250	2	250	268	170	106	330	341.5	14.50	6.69	4.17	12.99	13.44	31.97	I7
TNL2-300	2	300	321	170	150	330	341.5	18.80	6.69	5.91	12.99	13.44	41.45	I7
TNL2-400	2	400	428	170	150	330	341.5	26.40	6.69	5.91	12.99	13.44	58.20	I7
TNL2-450	2	450	482	196	171	330	341.5	27.00	7.72	6.73	12.99	13.44	59.52	I7
TNL2-500	2	500	535	240	170	330	341.5	30.50	9.45	6.69	12.99	13.44	67.24	I7
TNL2-600	2	600	642	285	170	330	341.5	36.60	11.22	6.69	12.99	13.44	80.69	I7
TNL2-800	2	800	856	382	170	330	341.5	50.40	15.04	6.69	12.99	13.44	111.11	I7
TNL2-1000	2	1000	1070	470	170	330	341.5	60.00	18.50	6.69	12.99	13.44	132.28	I7
TNL2-1200	2	1200	1284	470	170	330	341.5	66.40	18.50	6.69	12.99	13.44	146.39	I7
TNL2-1500	2	1500	1605	403	354	339	349	98.00	15.87	13.94	13.35	13.74	216.05	I7
TNL2-2000	2	2000	2140	490	350	339	349	121.00	19.29	13.78	13.35	13.74	266.76	I7
TNL2-2500	2	2500	2675	490	350	339	349	133.60	19.29	13.78	13.35	13.74	294.53	I7
TNL2-3000	2	3000	3210	709	350	337	347	180.00	27.91	13.78	13.27	13.66	396.83	I7

## Product Specification

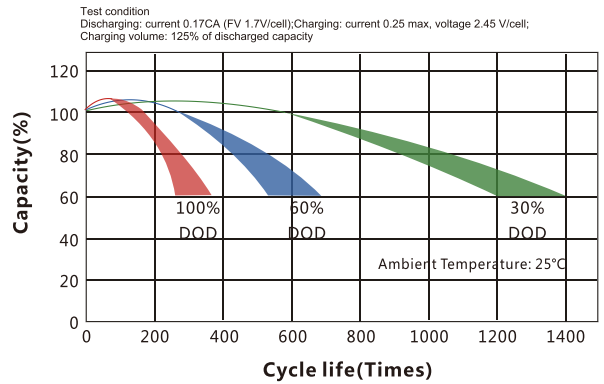
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				L	W	H	TH		L	W	H	TH		
TNL2-300H	2	300	321	126	187	361.5	375	19.00	4.96	7.36	14.23	14.76	41.88	17
TNL2-350H	2	350	375	126	187	361.5	375	22.00	4.96	7.36	14.23	14.76	48.49	17
TNL2-400H	2	400	428	166	184.5	361	375	25.00	6.54	7.26	14.21	14.76	55.11	17
TNL2-450H	2	450	482	166	184.5	361	375	27.00	6.54	7.26	14.21	14.76	59.51	17
TNL2-500H	2	500	535	197.5	187	361.5	375	30.00	7.78	7.36	14.23	14.76	66.13	17
TNL2-600H	2	600	642	223	184.5	361.5	375	35.50	8.78	7.26	14.23	14.76	78.25	17
TNL2-800H	2	800	856	154	229	555	566	52.00	6.06	9.02	21.85	22.28	114.62	17
TNL2-1000H	2	1000	1070	186	229	555	566	62.00	7.32	9.02	21.85	22.28	136.66	17
TNL2-1200H	2	1200	1284	225	229	555	566	75.00	8.86	9.02	21.85	22.28	165.32	17
TNL2-1500H	2	1500	1605	265.5	229	555	566	92.00	10.45	9.02	21.85	22.28	202.79	17
TNL2-2000H	2	2000	2140	349	233	555	566	121.00	13.74	9.17	21.85	22.28	266.71	17
TNL2-3000H	2	3000	3210	496	363	362	374	175.00	19.53	14.29	14.25	14.72	385.74	17

## Performance Curve

Float Life with Different Temperature



Cycle Life with Different DOD



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