



TPL series

TPL12600TFR



Valve Regulated Lead Acid Battery

Maintenance-Free Sealed Lead Acid Battery.

Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99%.

General

Design for Standby Power Applications

【Design Life】

Up to 12 Years in Standby Service at 25°C

Eurobat (20°C) : >12 YEARS VERY LONG LIFE

【Operating Temperature Range】

Nominal Operating Temperature : 25°C(77°F)

Discharge : -15°C ~ 50°C (5°F~122°F)

Charge: -15°C ~ 40°C (5°F~104°F)

Storage: -15°C ~ 40°C (5°F~104°F)

【Float Charging Voltage】

13.5 ~ 13.8 VDC/Unit at 25°C (77°F)

【Equalization Charging Voltage】

14.4 ~ 15.0 VDC/Unit at 25°C (77°F)

【Self Discharge】

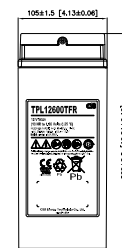
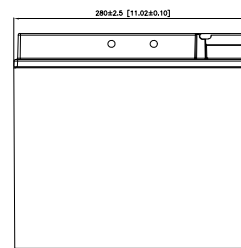
Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F);

Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).

Specification

Design according with IEC 60896-21/22:2004

Nominal Voltage	12V (6 cells per unit)		
Nominal Capacity	60AH @10HR-rate to 1.80V per cell @25°C (77°F)		
Weight	Approx. 21.20 Kg (46.72 lbs)		
Maximum Discharge Current	800A (5sec)		
Internal Resistance	Approx. 6.27 mΩ		
Short Circuit Current	-		
Maximum Charge Current	18A		
Terminal types	I2 thread lead alloy terminal to accept M6 bolt		
Terminal tightening torque	51.7±10.3 Kg·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m		
Container Material	Flame Retardant ABS (UL 94-V0)		
Dimensions	Length (L)	280.0±2.5 mm	11.02±0.09 inch
	Width (W)	105.0±1.5 mm	4.13±0.05 inch
	Overall Height (H)	260.0±2.5 mm	10.23±0.09 inch



Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
1.67V	125	75.8	44.9	32.7	26.0	18.6	14.7	12.1	10.4	8.10	6.69	3.53
1.70V	121	74.6	44.6	32.5	25.8	18.5	14.6	12.0	10.3	8.05	6.65	3.51
1.75V	118	73.6	44.4	32.4	25.7	18.4	14.5	11.9	10.2	8.02	6.63	3.50
1.80V	110	71.2	43.7	32.1	25.5	18.3	14.4	11.8	10.1	7.96	6.58	3.48
1.83V	99.5	67.4	42.3	31.4	25.0	17.9	14.1	11.7	10.0	7.83	6.48	3.43
1.85V	86.1	62.3	39.7	30.0	23.8	17.2	13.6	11.2	9.64	7.56	6.26	3.31

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
1.67V	1366	837	505	375	299	216	172	144	123	95.7	78.8	42.4
1.70V	1319	825	503	373	298	215	171	143	122	95.2	78.5	42.2
1.75V	1287	817	501	372	297	214	170	142	121	95.0	78.3	42.1
1.80V	1211	796	495	370	295	213	169	141	120	94.3	77.8	41.8
1.83V	1106	762	482	363	290	210	167	139	119	93.1	76.9	41.3
1.85V	975	713	456	349	278	202	161	134	115	90.1	74.6	40.0

**Preliminary spec sheet

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TPL Series

TPL121000FR Datasheet

12V Front Terminal VRLA-AGM

Specifications

Voltage (Vdc)	12
Nominal Capacity (1.80 VPC @25°C)	100 Ah @10hr-rate
Ah Capacity (8-Hr 1.75 VPC @ 25°C)	100
Ah Capacity (20-Hr 1.75 VPC @ 25°C)	107
Ah Capacity (8-Hr 1.80 VPC @ 25°C)	96.8
Max Charge Current (A)	30
Max Discharge Current (A)	800
Short Circuit Current (A)	2216
Internal Resistance (mΩ)	Approx. 3.70
Terminal Type	I2 thread lead alloy terminal to accept M6 bolt
Terminal Torque	51.7±10.3 Kgf·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m
Container Material	Flame Retardant ABS (UL 94-V0)
Weight (kg. / lb., Approx.)	38.30 / 84.41
Length (L) (mm / in)	511.6±2.5 / 20.16±0.10
Width (W) (mm / in)	110.0±1.5 / 4.44±0.06
Height (H) (mm / in)	255.5±2.5 / 10.11±0.10
Design Life	Up to 12 Years in Standby Service at 25°C Eurobat (20°C): >12 Years Very Long Life
Operating Temperature	Nominal: 25°C (77°F) Discharge: -15°C - 50°C (5°F-122°F) Charge/Storage: -15°C - 40°C (5°F - 104°F)
Float Charging Voltage	13.5 - 13.8 Vdc/battery 25°C (77°F)
Eq. Charging Voltage	14.4 - 15.0 Vdc/battery 25°C (77°F)
Self-Discharge	Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F); Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).



Valve Regulated Lead Acid (VRLA) Battery

Maintenance-Free, Absorbent Glass Mat (AGM) Technology for Efficient Gas Recombination of up to 99%

Pure Lead Construction and Proprietary Elements

Designed for Float Service Standby Power Applications

Built in Accordance with IEC 60896-21/22:2004 and UL1989 Recognized (MH14533)





TPL Series

TPL121000FR Datasheet

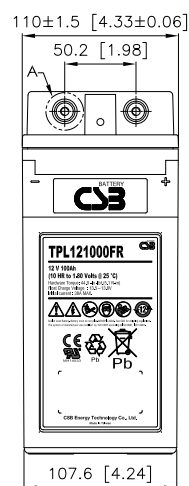
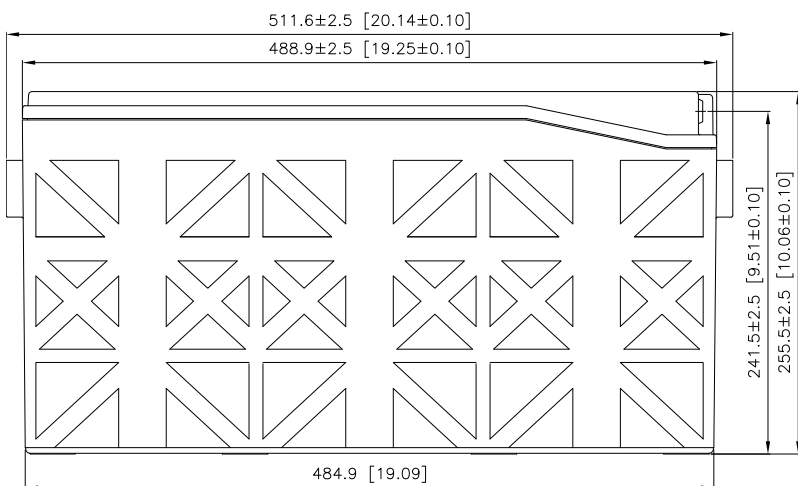
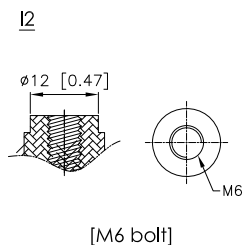
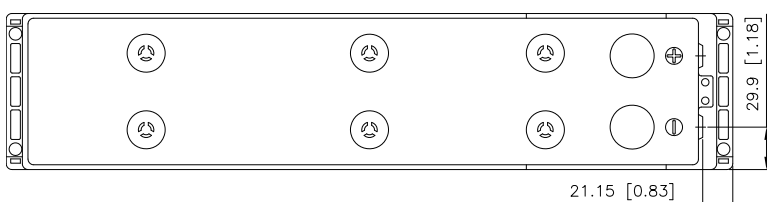
12V Front Terminal VRLA-AGM

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	186	118	69.1	50.2	40.1	29.6	23.8	19.8	16.9	13.0	10.6	5.56
10.50V (1.75 VPC)	157	106	64.0	47.3	38.0	28.4	22.8	18.8	16.0	12.5	10.3	5.38
10.80V (1.80 VPC)	139	98.0	60.3	44.7	36.3	27.0	21.8	18.1	15.6	12.1	10.0	5.25

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	1969	1272	757	554	446	331	268	223	191	147	120	63.1
10.50V (1.75 VPC)	1716	1161	723	534	428	322	261	216	185	144	118	62.3
10.80V (1.80 VPC)	1549	1075	691	511	414	313	254	212	183	141	116	61.6





TPL Series

TPL121000TFR Datasheet

12V Front Terminal VRLA-AGM

Specifications

Voltage (Vdc)	12
Nominal Capacity (1.80 VPC @25°C)	100 Ah @10hr-rate
Ah Capacity (8-Hr 1.75 VPC @ 25°C)	102
Ah Capacity (20-Hr 1.75 VPC @ 25°C)	110
Ah Capacity (8-Hr 1.80 VPC @ 25°C)	100
Max Charge Current (A)	30.0
Max Discharge Current (A)	800
Short Circuit Current (A)	2132
Internal Resistance (mΩ)	Approx. 4.00
Terminal Type	I2 thread lead alloy terminal to accept M6 bolt
Terminal Torque	51.7±10.3 Kg·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m
Container Material	Flame Retardant ABS (UL 94-V0)
Weight (kg. / lb., Approx.)	34.80 / 76.70
Length (L) (mm / in)	390.0±2.5 / 15.35±0.10
Width (W) (mm / in)	105.0±1.5 / 4.13±0.06
Height (H) (mm / in)	280.0±2.5 / 11.02±0.10
Design Life	Up to 12 Years in Standby Service at 25°C Eurobat (20°C): >12 Years Very Long Life
Operating Temperature	Nominal: 25°C (77°F) Discharge: -15°C - 50°C (5°F-122°F) Charge/Storage: -15°C - 40°C (5°F - 104°F)
Float Charging Voltage	13.5 - 13.8 Vdc/battery 25°C (77°F)
Eq. Charging Voltage	14.4 - 15.0 Vdc/battery 25°C (77°F)
Self-Discharge	Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F); Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).



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Maintenance-Free, Absorbent Glass Mat (AGM) Technology for Efficient Gas Recombination of up to 99%

Pure Lead Construction and Proprietary Elements

Designed for Float Service Standby Power Applications

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TPL Series

TPL121000TFR Datasheet

12V Front Terminal VRLA-AGM

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

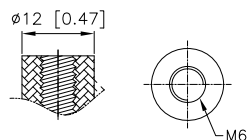
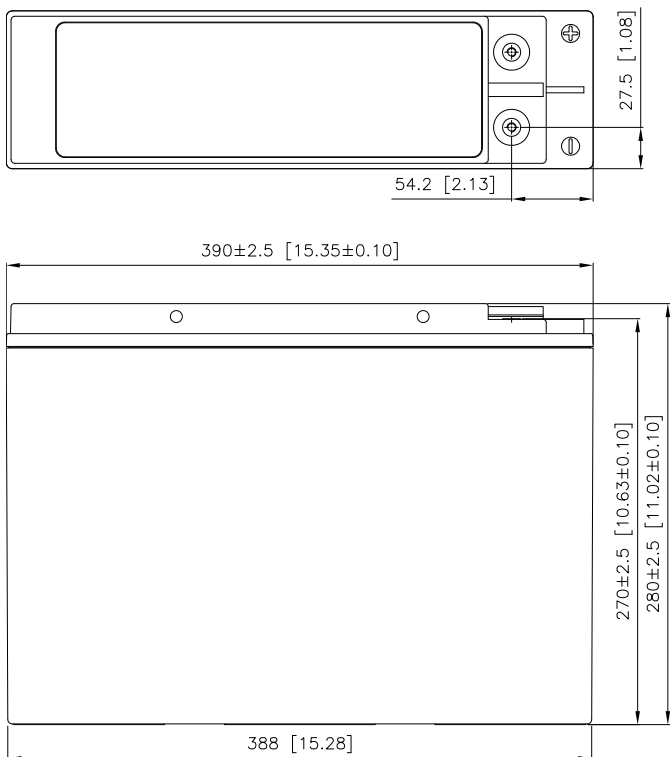
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	203	123	72.6	52.9	41.9	29.8	23.4	19.4	16.6	12.9	10.7	5.55
10.50V (1.75 VPC)	184	117	71.1	52.0	41.2	29.4	23.1	19.2	16.4	12.7	10.5	5.47
10.80V (1.80 VPC)	164	111	68.7	50.8	40.2	28.7	22.6	18.8	16.0	12.5	10.4	5.37

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

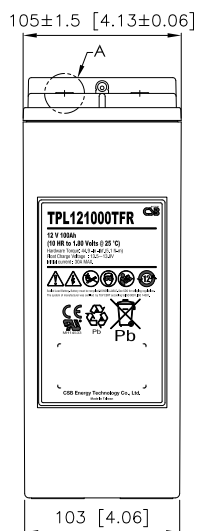
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	2117	1370	843	619	488	344	270	223	192	152	127	66.6
10.50V (1.75 VPC)	1944	1327	828	611	482	341	265	221	189	148	123	65.3
10.80V (1.80 VPC)	1753	1261	798	598	472	334	262	217	187	147	122	65.0

Detail A Drawing(4:1)

I2



[M6 bolt]





TPL Series

TPL121600FR Datasheet

12V Front Terminal VRLA-AGM

Specifications

Voltage (Vdc)	12
Nominal Capacity (1.80 VPC @25°C)	160 Ah @10hr-rate
Ah Capacity (8-Hr 1.75 VPC @ 25°C)	159
Ah Capacity (20-Hr 1.75 VPC @ 25°C)	173
Ah Capacity (8-Hr 1.80 VPC @ 25°C)	156
Max Charge Current (A)	48
Max Discharge Current (A)	800
Short Circuit Current (A)	2593
Internal Resistance (mΩ)	Approx. 3.70
Terminal Type	I2 thread lead alloy terminal to accept M6 bolt
Terminal Torque	51.7±10.3 Kg·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m
Container Material	Flame Retardant ABS (UL 94-V0)
Weight (kg. / lb., Approx.)	54.80 / 120.78
Length (L) (mm / in)	547.0±2.5 / 21.54±0.10
Width (W) (mm / in)	124.8±1.5 / 4.94±0.06
Height (H) (mm / in)	320.3±2.5 / 12.72±0.10
Design Life	Up to 12 Years in Standby Service at 25°C Eurobat (20°C): >12 Years Very Long Life
Operating Temperature	Nominal: 25°C (77°F) Discharge: -15°C - 50°C (5°F-122°F) Charge/Storage: -15°C - 40°C (5°F - 104°F)
Float Charging Voltage	13.5 - 13.8 Vdc/battery 25°C (77°F)
Eq. Charging Voltage	14.4 - 15.0 Vdc/battery 25°C (77°F)
Self-Discharge	Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F); Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).



Valve Regulated Lead Acid (VRLA) Battery

Maintenance-Free, Absorbent Glass Mat (AGM) Technology for Efficient Gas Recombination of up to 99%

Pure Lead Construction and Proprietary Elements

Designed for Float Service Standby Power Applications

Built in Accordance with IEC 60896-21/22:2004 and UL1989 Recognized (MH14533)





TPL Series

TPL121600FR Datasheet

12V Front Terminal VRLA-AGM

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

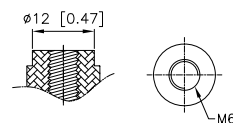
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	264	174	106	77.6	62.2	45.2	36.3	30.7	26.2	20.1	16.5	8.77
10.50V (1.75 VPC)	223	162	101	74.5	60.0	44.3	35.5	30.1	25.8	19.9	16.3	8.67
10.80V (1.80 VPC)	194	152	94.7	70.7	57.4	42.6	34.7	29.4	25.1	19.5	16.1	8.50

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

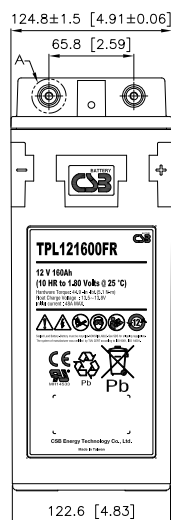
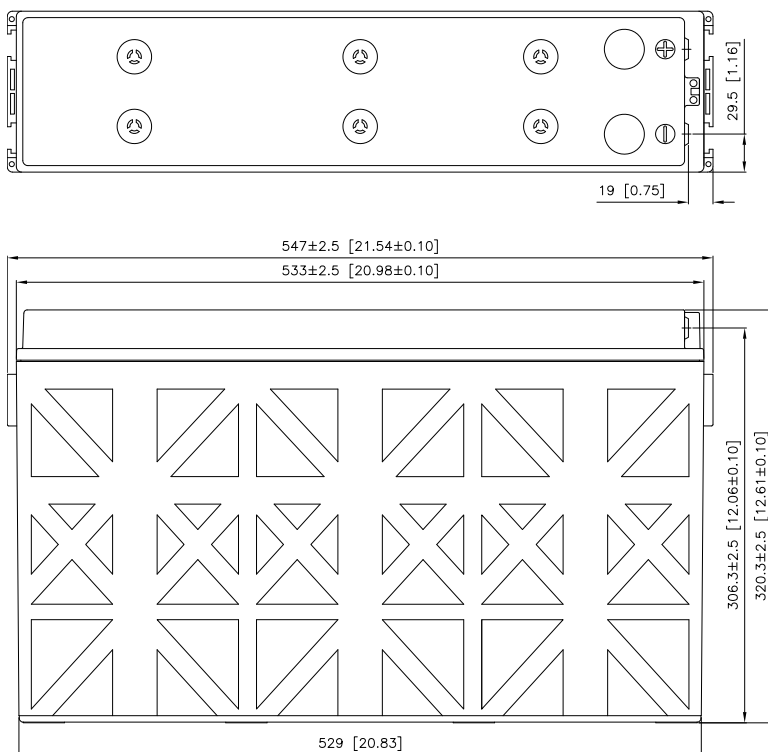
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	2672	1930	1223	897	720	529	425	358	305	237	195	104
10.50V (1.75 VPC)	2354	1835	1154	856	692	517	417	356	302	234	191	102
10.80V (1.80 VPC)	2113	1760	1092	821	670	505	410	353	301	233	190	101

Detail A Drawing(4:1)

I2



[M6 bolt]





TPL Series

TPL121800FR Datasheet

12V Front Terminal VRLA-AGM

Specifications

Voltage (Vdc)	12
Nominal Capacity (1.80 VPC @25°C)	180 Ah @10hr-rate
Ah Capacity (8-Hr 1.75 VPC @ 25°C)	175
Ah Capacity (20-Hr 1.75 VPC @ 25°C)	192
Ah Capacity (8-Hr 1.80 VPC @ 25°C)	172
Max Charge Current (A)	54
Max Discharge Current (A)	800
Short Circuit Current (A)	2575
Internal Resistance (mΩ)	Approx. 3.90
Terminal Type	I2 thread lead alloy terminal to accept M6 bolt
Terminal Torque	51.7±10.3 Kgf·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m
Container Material	Flame Retardant ABS (UL 94-V0)
Weight (kg. / lb., Approx.)	55.1 / 121.44
Length (L) (mm / in)	547.0±2.5 / 21.54±0.10
Width (W) (mm / in)	124.8±1.5 / 4.94±0.06
Height (H) (mm / in)	320.3±2.5 / 12.72±0.10
Design Life	Up to 12 Years in Standby Service at 25°C Eurobat (20°C): >12 Years Very Long Life
Operating Temperature	Nominal: 25°C (77°F) Discharge: -15°C - 50°C (5°F-122°F) Charge/Storage: -15°C - 40°C (5°F - 104°F)
Float Charging Voltage	13.5 - 13.8 Vdc/battery 25°C (77°F)
Eq. Charging Voltage	14.4 - 15.0 Vdc/battery 25°C (77°F)
Self-Discharge	Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F); Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).



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Pure Lead Construction and Proprietary Elements

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TPL Series

TPL121800FR Datasheet

12V Front Terminal VRLA-AGM

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

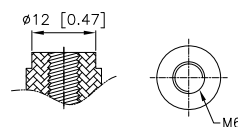
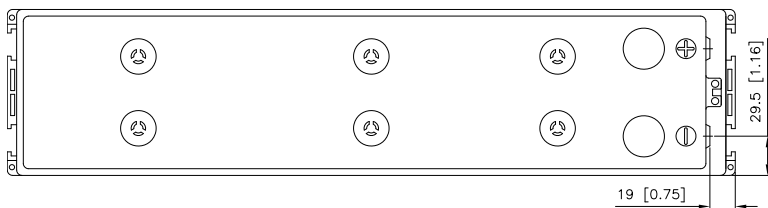
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	307	205	124	90.1	71.1	51.1	39.8	32.7	28.0	22.0	18.2	9.70
10.50V (1.75 VPC)	266	190	119	87.7	69.7	50.4	39.2	32.3	27.7	21.8	18.0	9.59
10.80V (1.80 VPC)	238	177	114	84.6	67.6	49.2	38.4	31.7	27.2	21.4	18.0	9.44

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

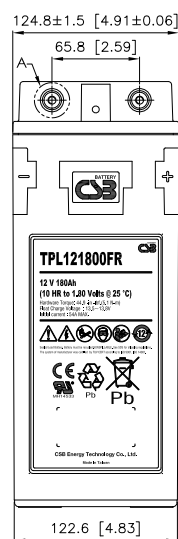
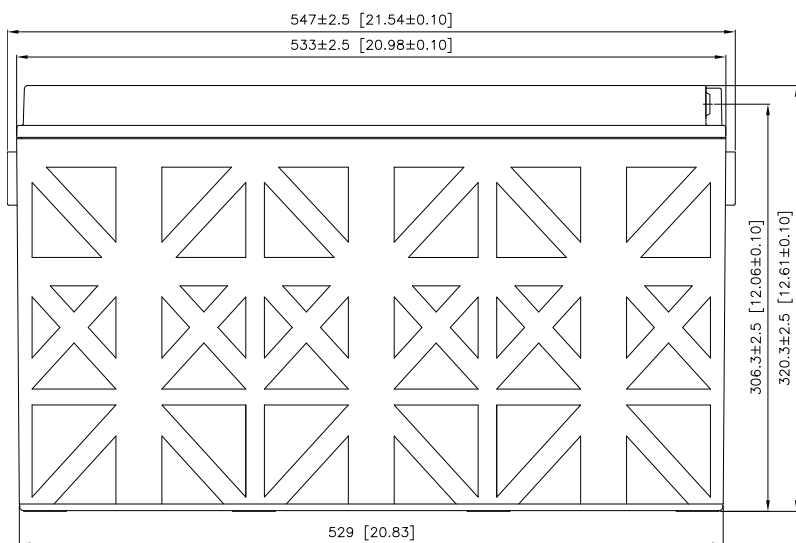
F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	3208	2217	1386	1023	816	589	466	387	333	261	217	116
10.50V (1.75 VPC)	2879	2106	1354	1004	803	583	462	383	330	259	215	114
10.80V (1.80 VPC)	2624	1968	1302	975	782	569	454	377	324	255	211	113

Detail A Drawing(4:1)

I2



[M6 bolt]





TPL Series

TPL122000FR Datasheet

12V Front Terminal VRLA-AGM

Specifications

Voltage (Vdc)	12
Nominal Capacity (1.80 VPC @25°C)	200 Ah @10hr-rate
Ah Capacity (8-Hr 1.75 VPC @ 25°C)	198
Ah Capacity (20-Hr 1.75 VPC @ 25°C)	214
Ah Capacity (8-Hr 1.80 VPC @ 25°C)	194
Max Charge Current (A)	60.0
Max Discharge Current (A)	1150
Short Circuit Current (A)	3093
Internal Resistance (mΩ)	Approx. 3.60
Terminal Type	I2 thread lead alloy terminal to accept M6 bolt
Terminal Torque	51.7±10.3 Kg·cm / 44.9±9.0 Lbf·in / 5.1±1.0 N·m
Container Material	Flame Retardant ABS (UL 94-V0)
Weight (kg. / lb., Approx.)	59.70 / 131.58
Length (L) (mm / in)	560.0±2.5 / 22.05±0.10
Width (W) (mm / in)	124.0±1.5 / 4.88±0.06
Height (H) (mm / in)	323.0±2.5 / 12.72±0.10
Design Life	Up to 12 Years in Standby Service at 25°C Eurobat (20°C): >12 Years Very Long Life
Operating Temperature	Nominal: 25°C (77°F) Discharge: -15°C - 50°C (5°F-122°F) Charge/Storage: -15°C - 40°C (5°F - 104°F)
Float Charging Voltage	13.5 - 13.8 Vdc/battery 25°C (77°F)
Eq. Charging Voltage	14.4 - 15.0 Vdc/battery 25°C (77°F)
Self-Discharge	Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F); Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).



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TPL122000FR Datasheet

12V Front Terminal VRLA-AGM

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	351	235	142	102.1	80.3	57.1	44.8	37.2	31.9	25.0	20.8	10.9
10.50V (1.75 VPC)	308	217	136	100.4	79.1	56.3	44.2	36.7	31.5	24.7	20.5	10.7
10.80V (1.80 VPC)	275	201	130	97.9	77.0	55.0	43.3	35.9	30.9	24.3	20.2	10.6

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
10.02V (1.67 VPC)	3638	2535	1582	1178	930	665	525	437	376	296	247	126
10.50V (1.75 VPC)	3352	2386	1533	1159	915	656	518	431	371	293	244	124
10.80V (1.80 VPC)	3062	2215	1470	1124	890	641	508	424	365	289	242	123

