

UP-TF110-12



ISO 9001, ISO 14001, OHSAS 18001, AQAP 2110

Specifications

Nominal Voltage	12V
Terminal type	Front
Grid alloy	Lead-Calcium-Tin lead alloy
Plates	Flat Pasted
Separators	AGM
Active material	Very high purity lead
Case and cover	ABS F.R. class V0
Carrying Handles	Yes
Terminal torque	8 Nm
Electrolyte	Sulphuric acid, Analytical grade purity
Venting Valve	One way, self resealing, - Resealing pressure 120 mBar - Resealing pressure 105 mBar
Central degassing system	Available
Terminal sealing	Mechanical + epoxy double sealing
Connectors	Supplied as standard
Shelf life	Up to 1 year

Product design features

- EUROBAT specification Long Life 12+ years
- Extremely high float life performance
- Low self discharge rates
- Low internal resistance
- Wide range of operating temperature -20°C to +55°C
- Compact design with high energy density
- ETSI Rack integration
- One-way valve regulated system with flame-arrestor
- Internal gas recombination efficiency 98% - 99%
- Low installation cost, maintenance free product
- Delivered ready for use
- Shock resistant ABS flame retardant container and lid
- Sealed for leak-free operation, inline automatic tested
- Female M8 brass terminals with no need for retightening
- Non-hazardous cargo for ground, sea and air transport
- Fully recyclable product

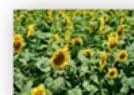
Performance characteristics

Charging voltage	Float 2.27 - 2.29 Vpc at 20°C Boost charge 2.40 Vpc at 20°C
Temperature compensation	±3mVpc/°C
Short Circuit Current	2145 A (IEC 60 896 -21/22)
Internal resistance	5.84 mOhms (IEC 60 896 -21/22)
Self discharge	Less than 2.5% per month at 20°C
Storability without recharging	Up to 6 months at 20°C
Recommended End of Discharge voltage	From 5 min to 1 hour: 1.65 Vpc From 1 to 5 hours: 1.70 Vpc From 5 to 8 hours: 1.75 Vpc From 8 to 12 hours: 1.80 Vpc From 12 to 20 hours: 1.85 Vpc

Mechanical Characteristics

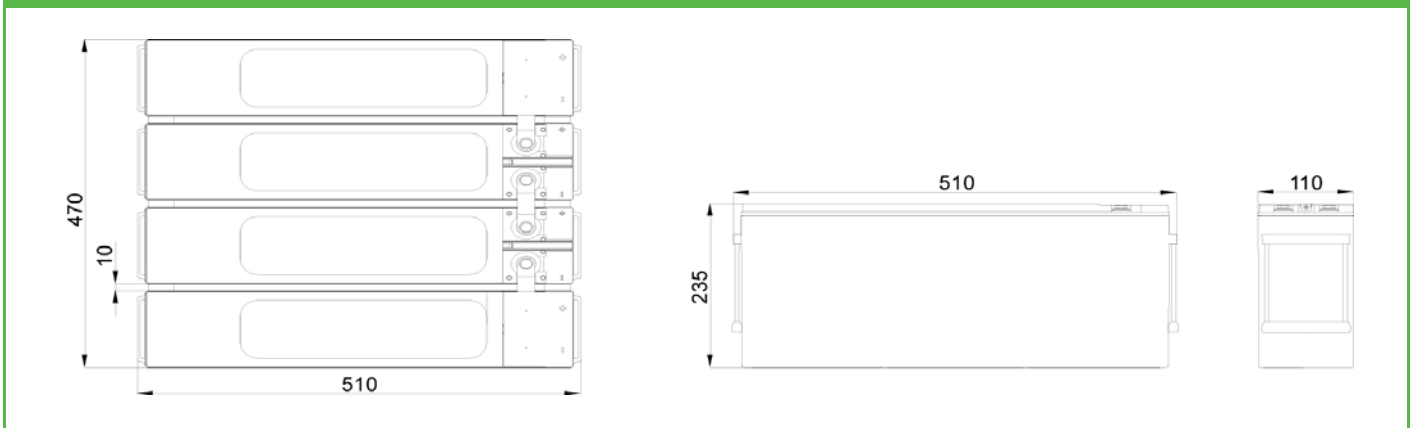
	SI Units	US Units
Length	510 mm	20.1 inches
Width	110 mm	4.3 inches
Height	235 mm	9.3 inches
Typical Weight	33.0 kg	72.75 lbs
Terminal Torque	8.0 Nm	70.8 in.lbs

All batteries are fully compliant with IEC 60 896 - 21/22, EN 60 896 - part 2, BS 6290 - part 4



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Drawings



Performance and characteristics at different temperatures (capacity correction)

Discharge time	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C
From 5 to 59 minutes	0.77	0.83	0.87	0.92	0.96	1	1.02	1.05	1.06
From 1 to 24 hours	0.83	0.87	0.91	0.94	0.97	1	1.02	1.03	1.04

Battery capacity at constant current discharge (Ah) for battery at 25°C

Uf, Vpc	5min	15min	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	25.7	46.2	57.8	69.2	82.4	89.0	94.3	97.8	101.0	106.4	108.4	112.5
1.65	24.7	44.8	56.7	67.3	80.9	87.5	92.9	96.8	100.3	105.6	107.4	111.5
1.70	22.9	43.1	54.6	65.6	79.3	86.1	91.8	95.3	99.0	104.7	106.7	110.5
1.75	20.3	40.6	51.5	64.1	77.4	84.6	90.0	93.6	97.7	103.7	106.2	109.4
1.80	17.6	37.8	47.3	62.0	75.6	83.0	88.7	92.4	96.1	102.4	105.0	108.5
1.85	15.5	33.3	44.5	59.8	74.6	81.7	87.3	91.0	94.5	100.8	103.8	107.6

Discharge performance at constant current discharge (A) for battery at 25°C

Uf, Vpc	5min	15min	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	308.5	184.8	115.5	69.2	41.2	29.7	23.6	19.6	16.8	13.3	10.8	5.6
1.65	296.2	179.3	113.4	67.3	40.4	29.2	23.2	19.4	16.7	13.2	10.7	5.6
1.70	274.3	172.2	109.2	65.6	39.6	28.7	22.9	19.1	16.5	13.1	10.7	5.5
1.75	243.8	162.5	102.9	64.1	38.7	28.2	22.5	18.7	16.3	13.0	10.6	5.5
1.80	210.7	151.2	94.5	62.0	37.8	27.7	22.2	18.5	16.0	12.8	10.5	5.4
1.85	185.5	133.1	89.0	59.8	37.3	27.2	21.8	18.2	15.8	12.6	10.4	5.4

Discharge performance at constant power discharge (W per cell) for battery at 25°C

Uf, Vpc	5min	15min	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	551.6	347.3	221.2	134.2	81.3	59.0	47.1	39.3	33.7	26.8	21.8	11.4
1.65	527.8	336.1	216.9	130.6	79.6	58.0	46.3	38.8	33.5	26.6	21.6	11.3
1.70	485.7	321.7	208.2	127.0	78.0	56.9	45.6	38.2	33.1	26.4	21.59	11.13
1.75	427.3	302.0	195.2	123.9	76.0	55.8	44.8	37.3	32.7	26.2	21.4	11.12
1.80	364.8	279.4	178.0	119.5	74.1	54.7	44.1	36.9	32.0	25.7	21.2	10.9
1.85	317.7	243.3	166.7	114.9	73.0	53.7	43.3	36.2	31.6	25.3	21.0	10.9

