

## ▶ AGM Front Terminal Batteries



**Solutions for the toughest requirements**

## ► The Company



Triathlon System GmbH, with its headquarters in Fürth/Bavaria and branches throughout Germany, is your specialist for battery-supported power supply systems.

Our high level of specialist know-how and many years of experience in

battery and charger technology are the best basis for comprehensive and competent advice.

### **Systems for emergencies and peak demand**

Our product range includes batteries of all common technologies, as well as safety lighting systems, UPS systems, DC systems and systems for many other applications.

Our installation and service teams ensure the installation and smooth functioning of our products. The range of services is supported exclusively by renowned and reliable partners.

The changing, harsh conditions in which our batteries and power supply systems are used are met with **ENDURANCE**, **full COMMITMENT** and **maximum PERFORMANCE**.

# Endurance. Commitment.

## ▶ AGM FT

The Triathlon FT series in AGM technology stands for the highest demands.

Areas of application include uninterruptible power supplies (UPS), telecommunications, information technology and emergency lighting.

The high quality standard is maintained by:

- ✓ ISO 9001 and ISO 14001 certification
- ✓ IEC 60896 Parts 21 & 22 and BS 6290 Part 4
- ✓ Extensive final testing of the products before delivery

### BATTERY CHARACTERISTICS

- ▶ Sealed batteries VLRA (Valve Regulated Lead Acid) - the electrolyte is fixed in a glass fleece
- ▶ Excellent high current capability due to low internal resistance
- ▶ High power density, low space requirement
- ▶ Especially suitable for rack mounting
- ▶ Maintenance-free
- ▶ Safety valve protects against excessive overpressure
- ▶ Low self-discharge rate:  
Can be stored for up to 9 months under normal conditions at +20 °C
- ▶ Service life according to EUROBAT „Very Long Life“ 12+ years in stand-by parallel operation
- ▶ No transport restrictions (according to IATA, DGR, set A67)

### ▶ Applications:

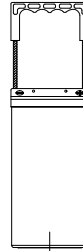
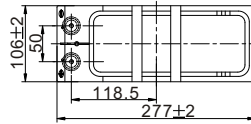
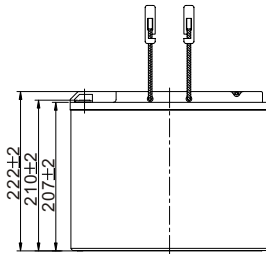
- UPS systems
- Stationary backup power systems in power stations and substations
- Telecommunications and electrical equipment
- Switchgear
- Automation technology, robot systems
- Monitoring systems
- Radio and radio systems
- Telemetry systems
- Signalling systems



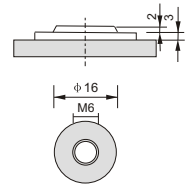
# Maximum Performance

# AGM FT: Technical Drawings

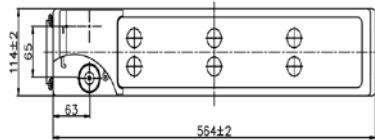
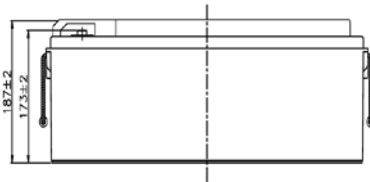
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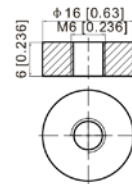
Anschluss T6



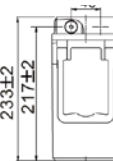
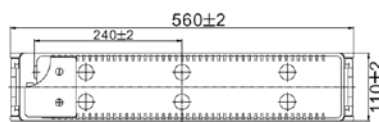
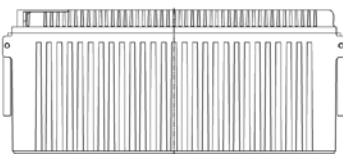
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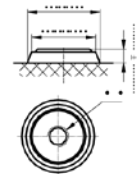
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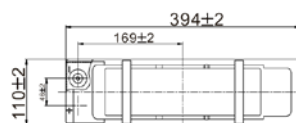
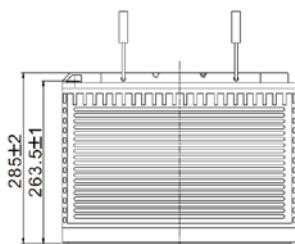
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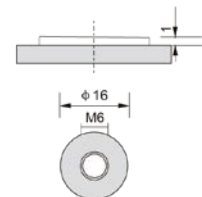
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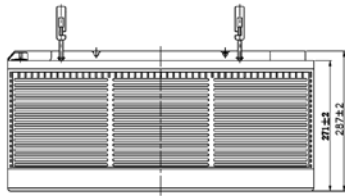
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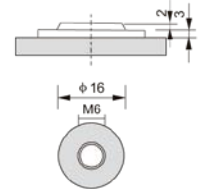
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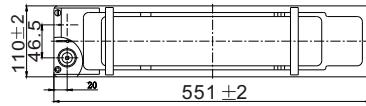
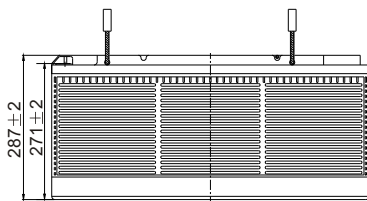
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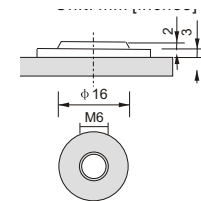
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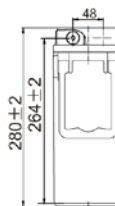
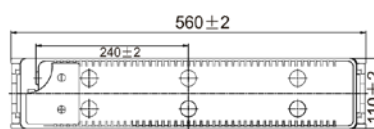
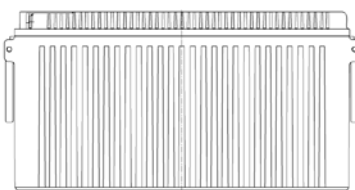
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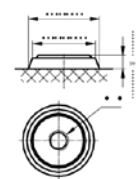
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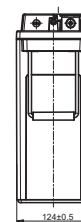
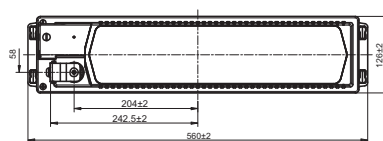
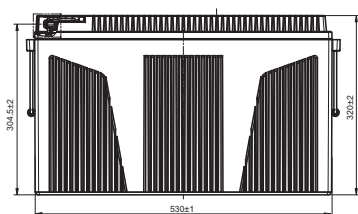
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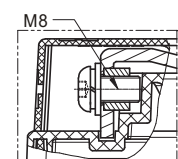
### Anschluss T13



### FT 12200



### Anschluss T11

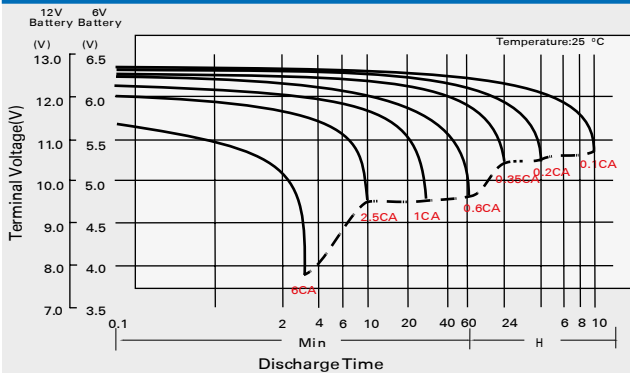


# AGM FT: Technical Data and Curves

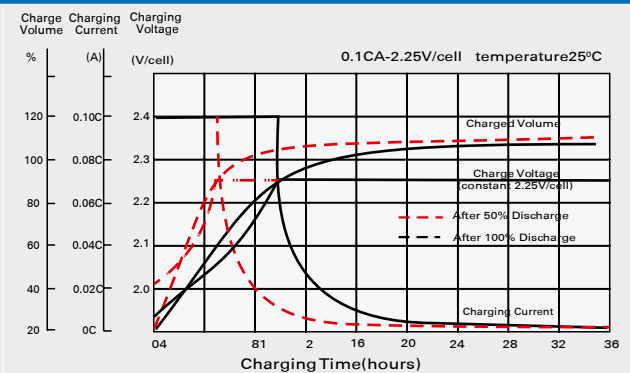
## 10 to 12 YEARS

Battery type	Nominal voltage	Nominal capacity C <sub>10</sub>	Nominal capacity C <sub>20</sub>	Length (L)	Width (B)	Height (H)	Typical weight	Internal resistance	max. discharge current	Connection
	V	Ah	Ah	max. mm	max. mm	max. mm	kg	mOhm	A	
FT 12055	12	57.1	60.4	277	106	222	18.0	6.0	550	T6
FT 12070	12	72.7	76.9	564	114	187	25.5	5.2	700	T6
FT 12100	12	104.0	110.0	508	110	239	35.6	4.3	1000	T13
FT 12100 H	12	104.0	110.0	394	110	285	34.5	4.3	1000	T6
FT 12125	12	130.0	137.4	551	110	287	41.5	3.2	1100	T6
FT 12150	12	150.0	158.8	551	110	287	46.4	3.0	1200	T6
FT 12180	12	180.0	190.6	560	126	280	54.0	5.0	1360	T13
FT 12200	12	200.0	210.0	560	126	320	60.0	2.7	1600	T11

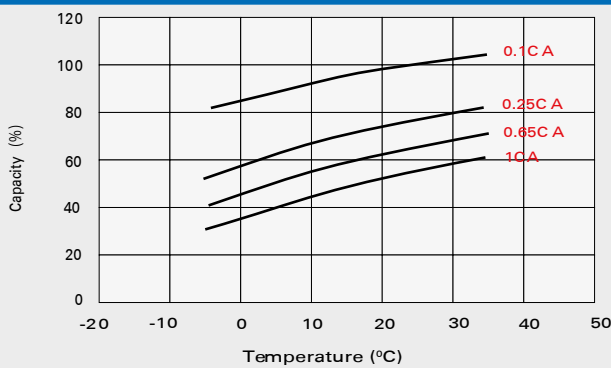
### Discharge behaviour



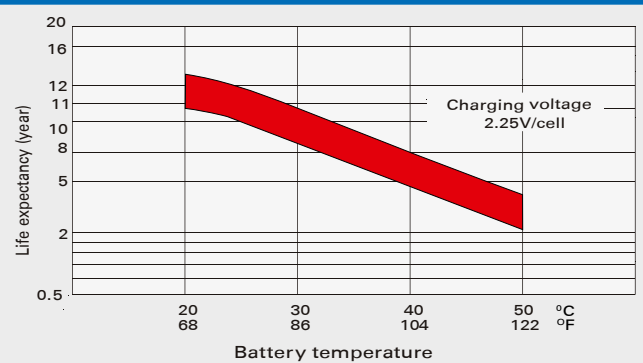
### Charge behaviour



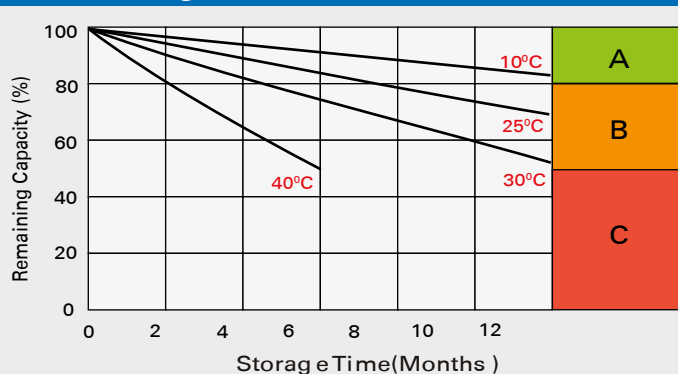
### Battery capacity in relation to temperature



### Temperature



### Self-discharge



- A** No supplementary charge required  
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
  - Charge d for above 3 days at limited current 0.25C A and constant voltage 2.25V/cell .
  - Charge d for above 20 hours at limited current 0.25C A and constant voltage 2.45V/cell
  - Charge d for 8~10 hours at limited current 0.05C A .
- C** Supplementary charge may often fail to recover the capacity.  
The battery should never be left standing till this is reached.

## ▶ AGM FT: Discharge data in Amperes

### 1.85 V/Z - discharge in amperes at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	107.3	95.7	79.7	68.4	53.7	41.6	33.8	20.2	14.5	11.7	9.66	8.40	6.54	5.46	2.89
FT 12070	136.6	121.7	101.5	87.1	68.3	53.0	43.1	25.7	18.5	14.8	12.3	10.7	8.33	6.95	3.68
FT 12100	195.1	173.9	145.0	124.4	97.6	75.7	61.5	36.7	26.4	21.2	17.6	15.3	11.9	9.92	5.26
FT 12100 H	195.1	173.9	145.0	124.4	97.6	75.7	61.5	36.7	26.4	21.2	17.6	15.3	11.9	9.92	5.26
FT 12125	243.9	217.4	181.2	155.5	122.0	94.6	76.9	45.9	33.0	26.5	21.9	19.1	14.9	12.4	6.57
FT 12150	281.9	251.3	209.5	179.8	141.0	109.3	88.9	53.0	38.2	30.6	25.4	22.1	17.2	14.3	7.60
FT 12180	338.4	301.6	251.4	215.7	169.2	131.2	106.7	63.6	45.8	36.8	30.4	26.5	20.6	17.2	9.12
FT 12200	350.7	287.5	252.9	226.7	185.7	143.2	115.7	67.5	49.4	39.6	33.2	28.7	22.8	19.0	10.1

### 1.80 V/Z - discharge in amperes at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	124.9	108.4	88.9	75.7	58.7	44.8	36.1	21.3	15.5	12.3	10.2	8.83	6.88	5.71	3.02
FT 12070	158.9	138.0	113.1	96.4	74.7	57.0	46.0	27.1	19.7	15.6	12.9	11.2	8.75	7.27	3.85
FT 12100	227.0	197.2	161.6	137.7	106.8	81.4	65.7	38.7	28.1	22.3	18.5	16.1	12.5	10.4	5.50
FT 12100 H	227.0	197.2	161.6	137.7	106.8	81.4	65.7	38.7	28.1	22.3	18.5	16.1	12.5	10.4	5.50
FT 12125	283.8	246.5	202.0	172.1	133.5	101.8	82.1	48.4	35.1	27.9	23.1	20.1	15.6	13.0	6.87
FT 12150	328.0	284.9	233.5	199.0	154.3	117.6	94.9	55.9	40.6	32.2	26.7	23.2	18.1	15.0	7.94
FT 12180	393.5	341.9	280.2	238.8	185.2	141.2	113.9	67.1	48.7	38.7	32.0	27.8	21.7	18.0	9.53
FT 12200	407.5	334.0	291.9	252.9	199.6	151.4	121.1	69.9	51.2	40.8	34.2	29.5	23.6	20.0	10.5

### 1.75 V/Z - discharge in amperes at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	141.9	119.0	96.2	80.8	61.7	46.5	37.4	21.7	15.7	12.6	10.4	8.97	6.96	5.78	3.07
FT 12070	180.6	151.5	122.4	102.9	78.5	59.2	47.6	27.6	20.0	16.0	13.2	11.4	8.86	7.35	3.91
FT 12100	258.0	216.4	174.9	146.9	112.2	84.5	68.0	39.4	28.6	22.9	18.9	16.3	12.7	10.5	5.58
FT 12100 H	258.0	216.4	174.9	146.9	112.2	84.5	68.0	39.4	28.6	22.9	18.9	16.3	12.7	10.5	5.58
FT 12125	322.5	270.5	218.6	183.7	140.3	105.7	85.0	49.3	35.7	28.6	23.6	20.4	15.8	13.1	6.98
FT 12150	372.8	312.7	252.7	212.3	162.1	122.1	98.2	57.0	41.3	33.1	27.3	23.6	18.3	15.2	8.06
FT 12180	447.2	375.2	303.2	254.8	194.6	146.6	117.9	68.4	49.5	39.7	32.8	28.3	21.9	18.2	9.68
FT 12200	449.7	368.6	314.2	269.6	207.6	156.1	124.7	71.5	52.0	41.3	34.6	29.9	24.0	20.1	10.6

### 1.70 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	155.5	127.3	101.3	84.1	63.5	47.6	37.9	22.0	15.9	12.7	10.5	9.08	7.06	5.83	3.09
FT 12070	197.9	162.0	128.9	107.0	80.8	60.5	48.2	28.0	20.2	16.1	13.3	11.6	8.98	7.42	3.93
FT 12100	282.7	231.5	184.2	152.9	115.5	86.5	68.9	40.0	28.8	23.0	19.0	16.5	12.8	10.6	5.62
FT 12100 H	282.7	231.5	184.2	152.9	115.5	86.5	68.9	40.0	28.8	23.0	19.0	16.5	12.8	10.6	5.62
FT 12125	353.4	289.3	230.2	191.1	144.4	108.1	86.1	50.0	36.1	28.8	23.8	20.6	16.0	13.3	7.03
FT 12150	408.5	334.5	266.1	220.9	166.9	124.9	99.6	57.8	41.7	33.3	27.5	23.8	18.5	15.3	8.12
FT 12180	490.1	401.4	319.4	265.1	200.3	149.9	119.5	69.3	50.0	39.9	32.9	28.6	22.3	18.4	9.75
FT 12200	478.9	392.5	329.3	280.4	214.7	159.1	126.7	72.5	52.7	41.9	34.9	30.3	24.3	20.3	10.7

## ▶ AGM FT: Discharge data in Amperes

### 1.67 V/Z - discharge in amperes at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	164.3	131.7	103.8	85.8	64.3	47.7	38.1	22.1	16.0	12.8	10.6	9.19	7.15	5.89	3.11
FT 12070	209.2	167.7	132.1	109.2	81.9	60.7	48.4	28.1	20.3	16.2	13.4	11.7	9.10	7.49	3.96
FT 12100	298.8	239.5	188.8	156.0	117.0	86.8	69.2	40.1	28.9	23.1	19.1	16.6	12.9	10.7	5.65
FT 12100 H	298.8	239.5	188.8	156.0	117.0	86.8	69.2	40.1	28.9	23.1	19.1	16.6	12.9	10.7	5.65
FT 12125	373.5	299.4	236.0	195.0	146.2	108.5	86.5	50.1	36.3	29.0	24.0	20.9	16.3	13.4	7.06
FT 12150	431.8	346.1	272.8	225.5	169.0	125.4	100.0	58.0	41.9	33.5	27.7	24.1	18.8	15.5	8.16
FT 12180	517.8	415.3	327.3	270.6	202.8	150.5	120.0	69.6	50.3	40.2	33.3	29.0	22.5	18.5	9.80
FT 12200	500.7	410.4	340.4	286.3	219.1	162.5	129.2	73.5	53.1	42.3	35.4	30.6	24.5	20.5	10.8

### 1.60 V/Z - discharge in amperes at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	175.5	138.5	107.8	89.7	65.9	49.0	39.1	22.4	16.3	13.0	10.8	9.35	7.32	6.00	3.12
FT 12070	223.4	176.2	137.2	114.1	83.9	62.4	49.7	28.6	20.7	16.6	13.8	11.9	9.31	7.63	3.98
FT 12100	319.1	251.8	196.0	163.0	119.9	89.1	71.0	40.8	29.3	23.4	19.3	16.7	13.0	10.8	5.68
FT 12100 H	319.1	251.8	196.0	163.0	119.9	89.1	71.0	40.8	29.3	23.4	19.3	16.7	13.0	10.8	5.68
FT 12125	398.9	314.7	245.0	203.8	149.9	111.4	88.8	51.0	37.0	29.6	24.6	21.3	16.6	13.6	7.10
FT 12150	461.1	363.8	283.2	235.5	173.3	128.7	102.6	59.0	42.8	34.2	28.5	24.6	19.2	15.8	8.21
FT 12180	553.1	436.6	339.9	282.7	207.9	154.5	123.1	70.8	51.3	41.1	34.2	29.5	23.1	18.9	9.85
FT 12200	522.5	428.3	349.9	294.7	223.5	164.9	131.2	74.4	53.8	42.7	35.7	30.9	24.8	20.7	10.8



## ▶ AGM FT: Discharge data in Watts / cell

### 1.85 V/Z - discharge in watts per cell at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	199.4	178.6	150.4	130.4	103.4	80.8	65.9	39.6	28.6	23.0	19.1	16.7	13.1	10.9	5.79
FT 12070	253.7	227.3	191.4	165.9	131.6	102.9	83.9	50.4	36.4	29.3	24.3	21.2	16.6	13.9	7.37
FT 12100	362.5	324.8	273.4	237.0	187.9	147.0	119.9	72.0	52.0	41.9	34.8	30.3	23.7	19.8	10.5
FT 12100 H	362.5	324.8	273.4	237.0	187.9	147.0	119.9	72.0	52.0	41.9	34.8	30.3	23.7	19.8	10.5
FT 12125	453.1	405.9	341.8	296.3	234.9	183.7	149.9	90.0	65.0	52.4	43.5	37.9	29.7	24.8	13.2
FT 12150	523.8	469.3	395.1	342.5	271.6	212.4	173.2	104.0	75.1	60.5	50.2	43.8	34.3	28.7	15.2
FT 12180	628.5	563.2	474.2	411.0	325.9	254.8	207.9	124.8	90.2	72.7	60.3	52.6	41.1	34.4	18.2
FT 12200	654.9	536.8	477.0	431.8	357.7	278.0	225.5	132.4	97.2	78.2	65.8	57.1	45.5	38.0	20.2

### 1.80 V/Z - discharge in watts per cell at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	228.2	200.1	165.4	142.2	111.4	86.3	70.0	41.5	30.3	24.1	20.0	17.5	13.7	11.4	6.04
FT 12070	290.5	254.7	210.5	181.0	141.8	109.8	89.1	52.8	38.5	30.7	25.5	22.2	17.4	14.5	7.69
FT 12100	415.0	363.9	300.7	258.5	202.5	156.9	127.3	75.4	55.0	43.8	36.4	31.7	24.9	20.7	11.0
FT 12100 H	415.0	363.9	300.7	258.5	202.5	156.9	127.3	75.4	55.0	43.8	36.4	31.7	24.9	20.7	11.0
FT 12125	518.7	454.8	375.8	323.1	253.2	196.1	159.1	94.3	68.8	54.8	45.5	39.7	31.1	25.9	13.7
FT 12150	599.6	525.8	434.5	373.6	292.7	226.7	183.9	109.0	79.5	63.3	52.6	45.9	35.9	29.9	15.9
FT 12180	719.3	631.0	521.4	448.3	351.2	272.0	220.7	130.8	95.4	76.0	63.1	55.1	43.1	35.7	19.0
FT 12200	752.1	616.5	543.2	474.8	378.7	291.7	234.7	136.2	100.2	80.2	67.3	58.3	47.0	39.7	21.0

### 1.75 V/Z - discharge in watts per cell at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	254.4	216.1	176.8	150.3	116.1	88.7	72.2	42.1	30.6	24.6	20.4	17.7	13.8	11.5	6.12
FT 12070	323.8	275.1	225.0	191.3	147.8	112.9	91.8	53.6	39.0	31.4	26.0	22.5	17.6	14.7	7.80
FT 12100	462.6	393.0	321.4	273.3	211.1	161.4	131.2	76.6	55.7	44.8	37.1	32.1	25.2	20.9	11.1
FT 12100 H	462.6	393.0	321.4	273.3	211.1	161.4	131.2	76.6	55.7	44.8	37.1	32.1	25.2	20.9	11.1
FT 12125	578.2	491.2	401.8	341.6	263.9	201.7	164.0	95.7	69.6	56.0	46.4	40.2	31.4	26.2	13.9
FT 12150	668.4	567.9	464.5	394.9	305.0	233.2	189.6	110.6	80.5	64.7	53.6	46.5	36.3	30.2	16.1
FT 12180	802.5	681.5	557.4	473.8	366.1	279.8	227.5	132.8	96.6	77.7	64.4	55.7	43.5	36.3	19.3
FT 12200	816.8	669.5	577.5	501.3	390.5	298.1	240.6	138.8	101.4	80.9	68.0	59.0	47.6	40.1	21.2

### 1.70 V/Z - discharge in watts per cell at 25 °C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	270.9	226.0	183.7	155.2	118.8	90.4	72.9	42.6	30.9	24.8	20.5	17.9	14.0	11.6	6.16
FT 12070	344.7	287.7	233.7	197.5	151.3	115.1	92.8	54.2	39.3	31.5	26.1	22.7	17.8	14.8	7.85
FT 12100	492.5	411.0	333.9	282.2	216.1	162.5	132.5	77.5	56.1	45.0	37.2	32.5	25.4	21.0	11.2
FT 12100 H	492.5	411.0	333.9	282.2	216.1	164.5	132.5	77.5	56.2	45.0	37.2	32.5	25.4	21.0	11.2
FT 12125	615.6	513.7	417.4	352.7	270.1	205.6	165.7	96.9	70.2	56.3	46.5	40.6	31.8	26.4	14.0
FT 12150	711.6	593.9	482.5	407.7	312.2	237.6	191.5	112.0	81.2	65.0	53.8	46.9	36.7	30.5	16.2
FT 12180	853.8	712.7	579.0	489.3	374.7	285.2	229.8	134.4	97.4	78.1	64.5	56.3	44.1	36.6	19.4
FT 12200	850.2	696.9	597.0	517.4	401.8	302.5	243.6	140.4	102.6	81.9	68.4	59.7	48.1	40.5	21.3

## ▶ AGM FT: Discharge data in Watts / cell

### 1.67 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	283.5	233.0	187.4	157.8	120.1	90.5	73.0	42.7	31.0	24.9	20.7	18.0	14.2	11.7	6.19
FT 12070	360.8	296.5	238.6	200.8	152.9	115.2	93.0	54.3	39.4	31.7	26.3	22.9	18.0	14.9	7.88
FT 12100	515.4	423.6	340.8	286.8	218.4	164.5	132.8	77.6	56.2	45.1	37.3	32.6	25.5	21.2	11.3
FT 12100 H	515.4	423.6	340.8	286.8	218.4	164.5	132.8	77.6	56.1	45.1	37.3	32.6	25.5	21.2	11.3
FT 12125	644.3	529.5	426.0	358.5	273.0	205.6	166.0	97.0	70.4	56.6	47.0	41.0	32.2	26.6	14.1
FT 12150	744.8	612.1	492.5	414.5	315.5	237.7	191.9	112.2	81.4	65.5	54.3	47.4	37.2	30.8	16.3
FT 12180	893.8	734.6	591.0	497.4	378.7	285.3	230.3	134.6	97.7	78.6	65.2	56.8	44.6	36.9	19.5
FT 12200	885.5	725.8	614.6	526.3	409.1	308.1	248.0	142.2	103.2	82.6	69.3	60.1	48.5	40.8	21.4

### 1.60 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	291.7	238.2	190.8	162.5	121.5	91.9	74.2	43.0	31.4	25.3	21.1	18.3	14.4	11.9	6.21
FT 12070	371.2	303.1	242.8	206.8	154.7	116.9	94.4	54.8	40.0	32.2	26.9	23.3	18.4	15.2	7.91
FT 12100	530.3	433.0	346.9	295.4	221.0	167.0	134.9	78.2	56.5	45.4	37.6	32.7	25.6	21.4	11.3
FT 12100 H	530.3	433.0	346.9	295.4	221.0	167.0	134.9	78.2	56.5	45.4	37.6	32.7	25.6	21.4	11.3
FT 12125	662.9	541.3	433.6	369.3	276.2	208.8	168.6	97.8	71.4	57.5	48.0	41.6	32.8	27.1	14.1
FT 12150	766.3	625.7	501.2	426.9	319.3	241.4	194.9	113.0	82.5	66.5	55.5	48.1	37.9	31.3	16.3
FT 12180	919.6	750.9	601.5	512.3	383.2	289.6	233.9	135.7	99.1	79.8	66.6	57.7	45.5	37.5	19.6
FT 12200	898.6	736.6	619.3	534.0	411.9	309.2	249.3	142.6	103.8	82.9	69.6	60.4	48.9	41.1	21.5





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