



RANGE OF BATTERIES

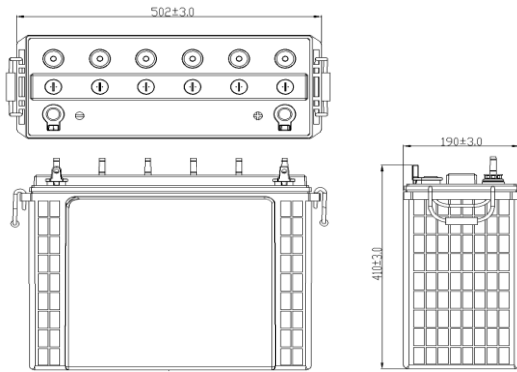
[TTC/TTMF/T GEL/STMF]



 www.eaplworld.com

 sales@eastmanglobal.com

TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery



Product Features :-

1. Robust Tubular with High Pressure diecasted spine- resulting low rate of spine corrosion.
2. Spill Proof Vent plug – resulting in no spillage on top and low controlled acid fumes.
3. Optimized Negative paste receipt for fast charge acceptance
4. Consistent backup throughout life
5. Excellent behavior in PSOC condition as compare
6. Low Self Discharge
7. Excellent performance on deep cyclic application as compare to AGM VRLA
8. Very High Design & Service Life
9. Low water loss

Technical Specifications

Model	Nominal Voltage	Rated Capacity 20 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length [± 3 mm]	Width [± 3 mm]	Height [± 3 mm]		
PX150D [12 V 150 AH @ C20]	12	150	505	190	410	55.5	L
PX200D [12 V 200 AH @ C20]	12	200	505	190	410	61.5	L
PX220D [12 V 220 AH @ C20]	12	220	505	190	410	68.83	L

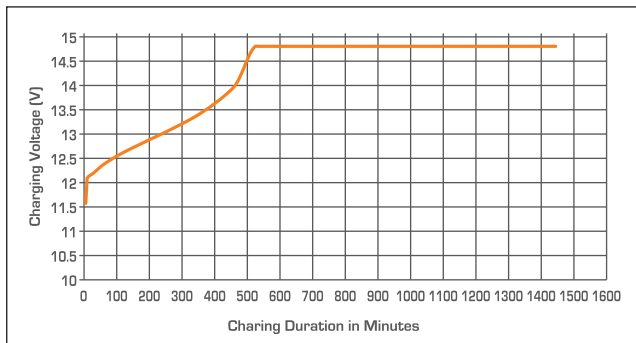
Electrical Parameters & Charging Profile

Battery Specified Capacity Test @ 27 °C						
	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
PX150D [12 V 150 AH @ C20]	150	135	124	112	97	68
PX200D [12 V 200 AH @ C20]	200	180	166	150	129	90
PX220D [12 V 220 AH @ C20]	220	200	184	166	143	100
Ah & Wh Efficiency						
Ah Efficiency	>90%		Wh Efficiency		>75%	

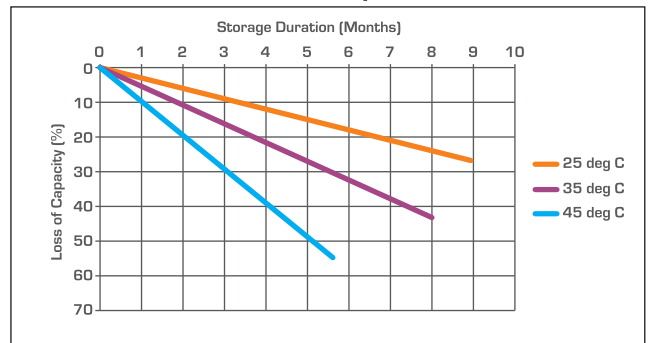
TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery

- Poly Components Material :- Polypropylene Co polymer
- Watering system :- Individual to every cell in Monobloc
- Testing Parameters :- IS 13369:1992 & IEC 60896-11

Charging Profile



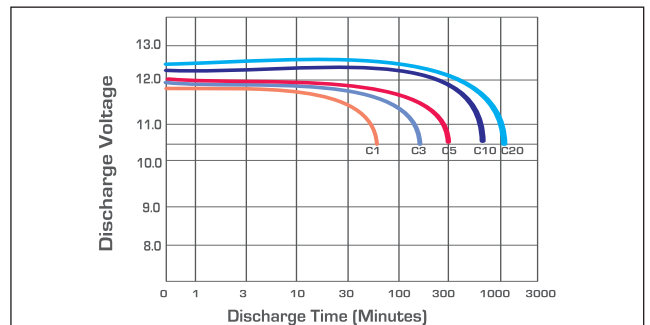
Self Discharge Characteristics @ Different Temperature



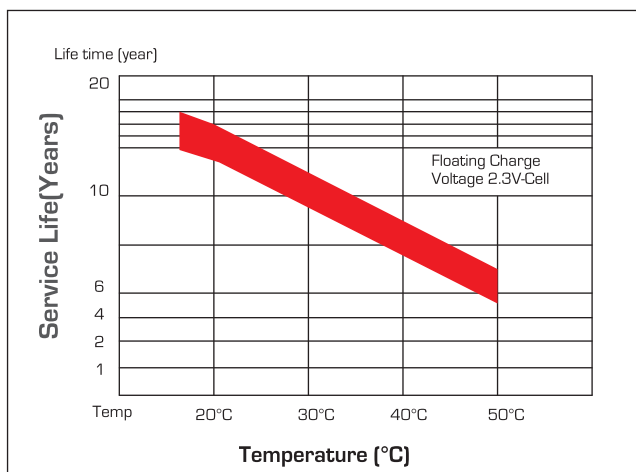
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	1.245-1.275	12.55V-12.70V
75%	≤ 1.225	≤ 12.4V
50%	≤ 1.190	≤ 12.1V
25%	≤ 1.155	≤ 12.0V
0%	1.120	11.8V

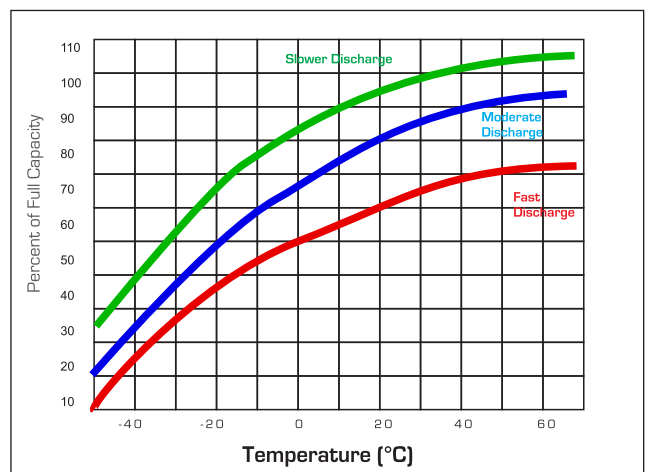
Discharging Characteristics at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



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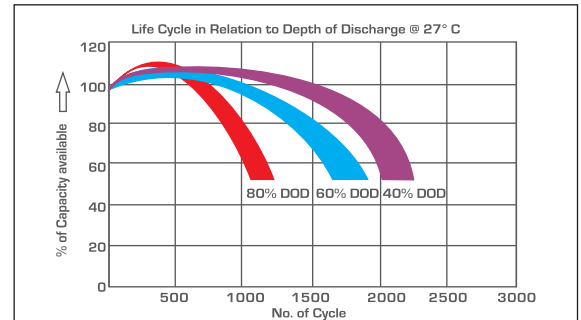


TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery

Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature -4°F to 131°F (-20°C to +55°C) At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	Self Discharge As per discharge Graph

Expected Life



Charging Instructions

Charger Voltage Settings (at 77° F / 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.4	28.8	57.6
Float Voltage	13.6	27.2	54.4
Equalization Voltage	16	32	64
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Comparison in between Praxis TTC & AGM VRLA

S.No	Parameter	Praxis Tall Tubular Conventional	AGM VRLA
1	Plate Technology	Tall Tubular Plate	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution-Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Free Flow Electrolyte	Electrolyte in-between AGM
5	Water Loss	Low	Negligible
6	Water Top up	Low water top up	No water top up throughout Warranty Life
7	Life Extension	Long life with regular water top up	Not Applicable
8	Self Discharge	Low <3.0%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	1100 Cycle	450 Cycle
10	Spillage	Low Spill-proof	Spill-proof
11	Fumes	Low Fumes	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 24 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



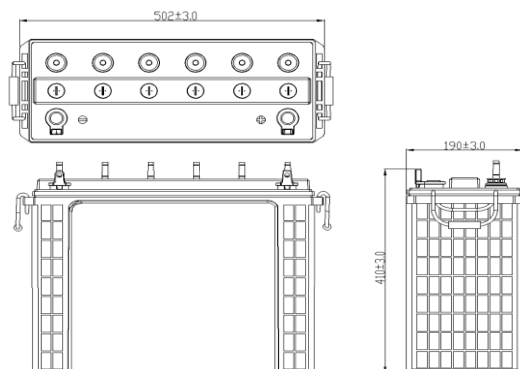
Vent Plug Type :-
M22 coin type



Vent Plug Type :-
M30 Dummy Plug



TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery



Product Features :-

1. Robust Tubular with High Pressure diecasted spine- resulting low rate of spine corrosion.
2. Spill Proof Vent plug – resulting in no spillage on top and low controlled acid fumes.
3. Optimized Negative paste receipt for fast charge acceptance
4. Consistent backup throughout life
5. Excellent behavior in PSOC condition as compare
6. Low Self Discharge
7. Excellent performance on deep cyclic application as compare to AGM VRLA
8. Very High Design & Service Life
9. Low water loss

Technical Specifications

Model	Nominal Voltage	Rated Capacity 20 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length [± 3 mm]	Width [± 3 mm]	Height [± 3 mm]		
PX100 [12 V 100 AH @ C20]	12	100	505	190	410	48	L
PX150 [12 V 150 AH @ C20]	12	150	505	190	410	53.95	L
PX200 [12 V 200 AH @ C20]	12	200	505	190	410	61.11	L

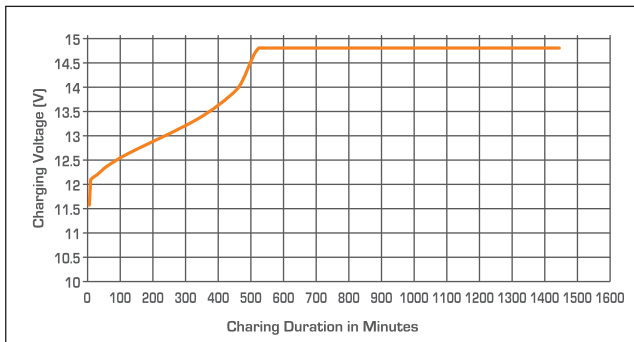
Electrical Parameters & Charging Profile

Battery Specified Capacity Test @ 27 °C						
	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
PX100 [12 V 100 AH @ C20]	100	90	83	75	65	45
PX150 [12 V 150 AH @ C20]	150	135	124	112	97	68
PX200 [12 V 200 AH @ C20]	200	180	166	150	129	90
Ah & Wh Efficiency						
Ah Efficiency	>90%		Wh Efficiency		>75%	

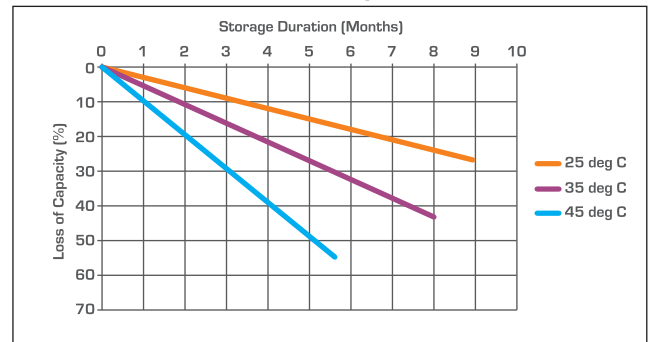
TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery

- Poly Components Material :- Polypropylene Co polymer
- Watering system :- Individual to every cell in Monobloc
- Testing Parameters :- IS 13369:1992 & IEC 60896-11

Charging Profile



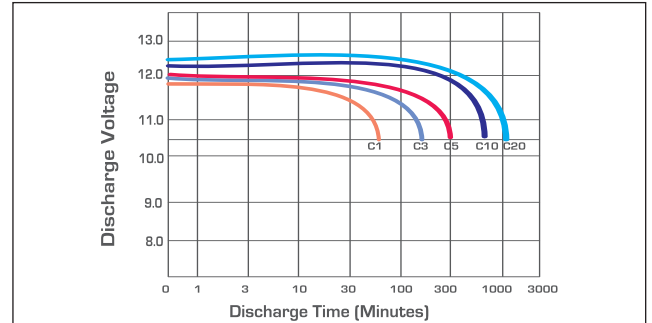
Self Discharge Characteristics @ Different Temperature



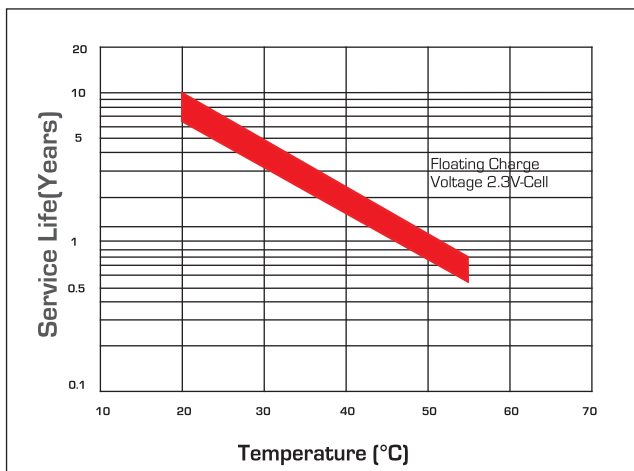
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	1.245-1.275	12.55V-12.70V
75%	≤ 1.225	≤ 12.4V
50%	≤ 1.190	≤ 12.1V
25%	≤ 1.155	≤ 12.0V
0%	1.120	11.8V

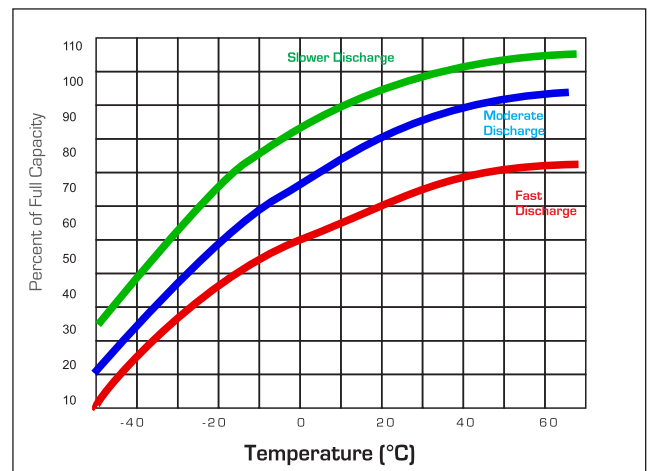
Discharging Characteristics at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



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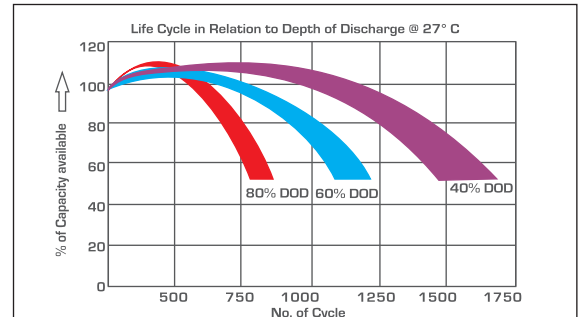


TECHNICAL SPECIFICATION- Tall Tubular Conventional Battery

Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C	0.005 volt per cell for every 1°C above 25°C or
	0.0028 volt per cell for every 1°F below 77°F	0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature	Self Discharge
	-4°F to 131°F (-20°C to +55°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	As per discharge Graph

Expected Life



Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.4	28.8	57.6
Float Voltage	13.6	27.2	54.4
Equalization Voltage	16	32	64
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Comparison in between Praxis TTC & AGM VRLA

S.No	Parameter	Praxis Tall Tubular Conventional	AGM VRLA
1	Plate Technology	Tall Tubular Plate	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution - Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Free Flow Electrolyte	Electrolyte in-between AGM
5	Water Loss	Low	Negligible
6	Water Top up	Low water top up	No water top up throughout Warranty Life
7	Life Extension	Long life with regular water top up	
8	Self Discharge	Low <3.0%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	900 Cycle	450 Cycle
10	Spillage	Low Spill-proof	Spill-proof
11	Fumes	Low Fumes	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 24 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



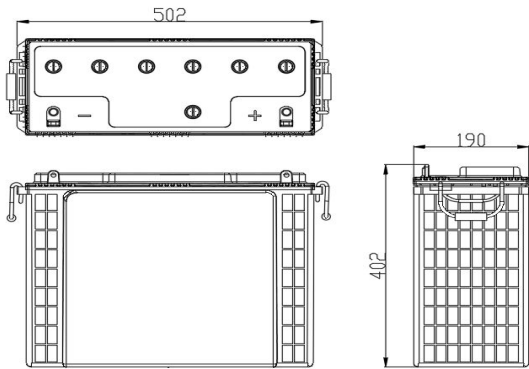
Vent Plug Type :-
M22 coin type



Vent Plug Type :-
M30 Dummy Plug



TECHNICAL SPECIFICATION- Tall Tubular Maintenance Free Battery



Product Features :-

1. Special alloy with High pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Ceramic Vent Plugs - Special ceramic vent plugs for controlled acid fumes.
3. Special Negative grid alloy to have MF characteristics.
4. Consistent Backup throughout life.
5. Spill proof vent plug for zero spillage
6. Low self Discharge equivalent to AGM VRLA.
7. Good for deep cyclic application as compare to AGM VRLA.
8. Maintenance free character for 1 year @ 27°C
9. Very High Design & service life as compare to than AGM VRLA.

Technical Specifications

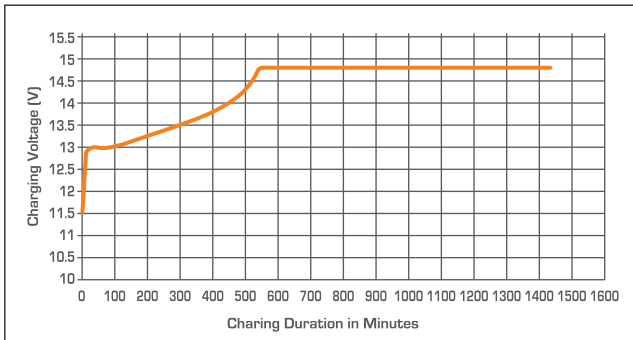
Model	Nominal Voltage	Rated Capacity 20 Hr @ 27°C [Ah]	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length (± 3 mm)	Width (± 3 mm)	Height (± 3 mm)		
PX150TTMF [12 V 150 AH @ C20]	12	150	505	190	402	53.95	L
PX200TTMF [12 V 200 AH @ C20]	12	200	505	190	402	62.45	L

Electrical Parameters & Charging Profile

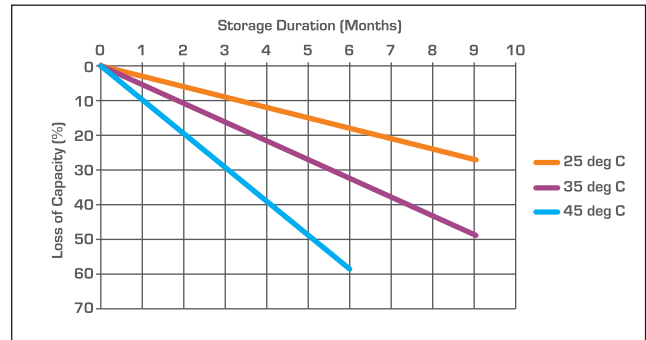
Battery Specified Capacity Test @ 27 °C						
	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
PX150TTMF [12 V 150 AH @ C20]	150	135	124	112	97	68
PX200TTMF [12 V 200 AH @ C20]	200	180	166	150	129	90
Ah & Wh Efficiency						
Ah Efficiency	>90%		Wh Efficiency		>75%	

TECHNICAL SPECIFICATION- Tall Tubular Maintenance Free Battery

Charging Profile



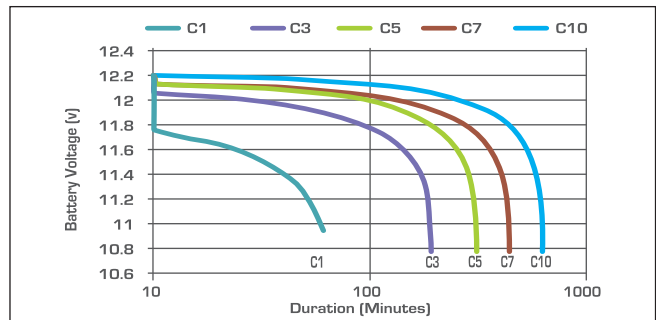
Self Discharge Characteristics @ Different Temperature



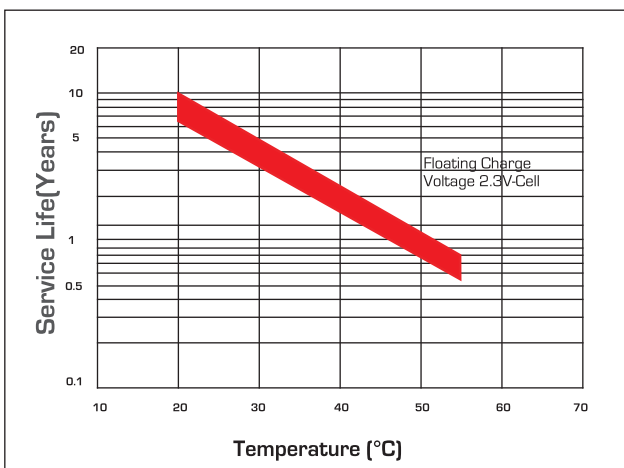
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	1.245-1.275	12.55V-12.70V
75%	≤ 1.225	≤ 12.4V
50%	≤ 1.190	≤ 12.1V
25%	≤ 1.155	≤ 12.0V
0%	1.120	11.8V

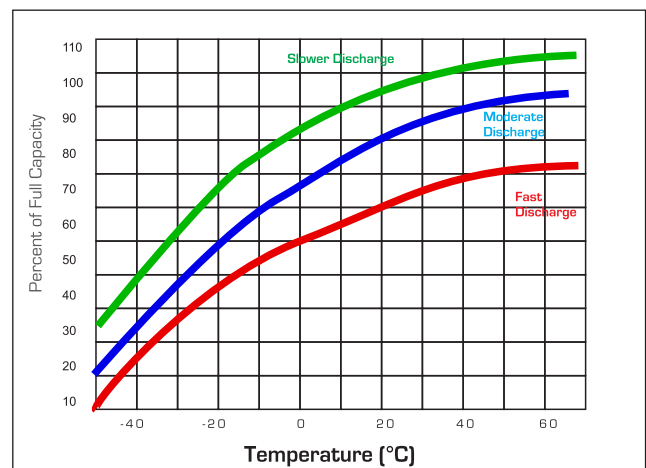
Discharging Characteristics at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



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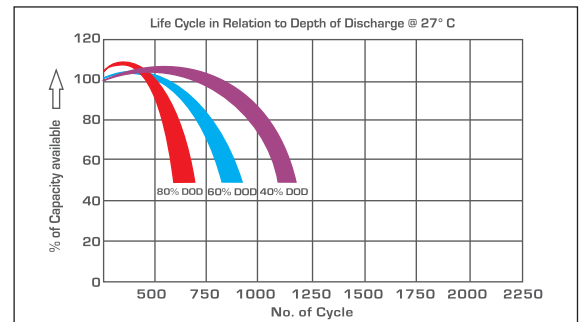


TECHNICAL SPECIFICATION- Tall Tubular Maintenance Free Battery

Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature -4°F to 131°F (-20°C to +55°C) At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	Self Discharge As per discharge Graph

Expected Life



Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.4	28.8	57.6
Float Voltage	13.6	27.2	54.4
Equalization Voltage	16	32	64
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Comparison in between Praxis TTMF & AGM VRLA

S.No	Parameter	Praxis Tall Tubular Maintenance Free	AGM VRLA
1	Plate Technology	Tall Tubular	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution - Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Free Flow Electrolyte	Electrolyte in-between AGM
5	Water Loss	Very Low	Negligible
6	Water Top up	No water top up throughout Warranty Life	No water top up throughout Warranty Life
7	Life Extension	Life can be extended via top-up	Not Applicable
8	Self Discharge	Low <2.5%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	600 Cycle	450 Cycle
10	Spillage	Low Spill-proof	Spill-proof
11	Fumes	Low Fumes	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

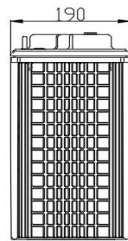
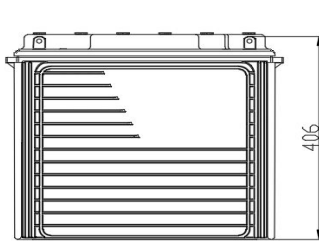
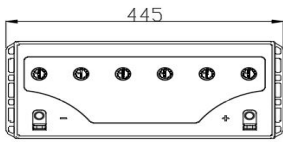
Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 21 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



Vent Plug Type :-
M22 coin type



TECHNICAL SPECIFICATION- Tubular Gel Battery



Product Features :-

1. Robust Tubular with High pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Gelled electrolyte - no stratification and no failure due to PSOC
3. Valve regulated - no water top up during service life
4. Antimony free alloy - longer shelf life because of very low self discharge
5. Very High Design & service life as compare to than AGM VRLA
6. Good for Cyclic & Float Applications
7. Wide operating Temperature Range.

Technical Specifications

Model	Nominal Voltage	Rated Capacity 10 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length [± 3 mm]	Width [± 3 mm]	Height [± 3 mm]		
PX150GG [12 V 150 AH @ C20]	12	135	445	190	406	47.6	L
PX200GG [12 V 200 AH @ C20]	12	180	445	190	406	60.05	L

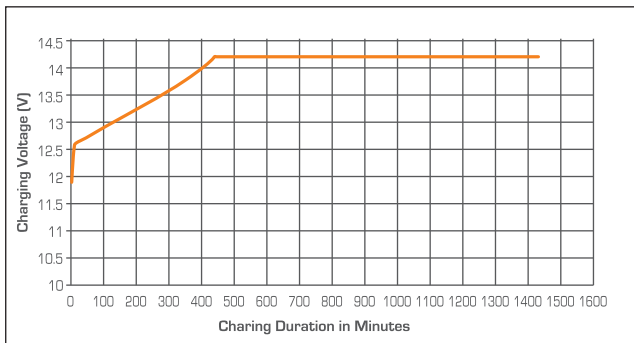
Electrical Parameters & Charging Profile

Battery Specified Capacity Test @ 27 °C						
	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
PX150GG [12 V 150 AH @ C20]	150	135	124	112	97	68
PX200GG [12 V 200 AH @ C20]	200	180	166	150	129	90
Ah & Wh Efficiency						
Ah Efficiency	>96%		Wh Efficiency		>84%	

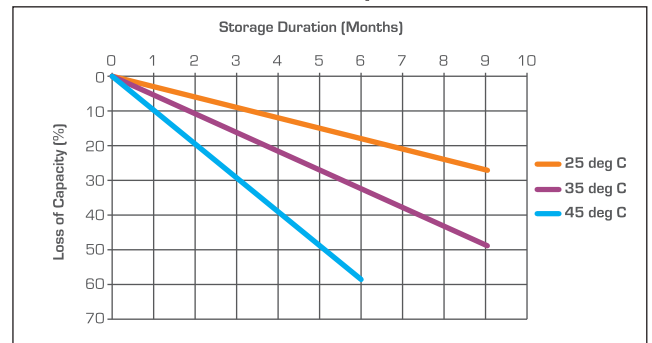
TECHNICAL SPECIFICATION- Tubular Gel Battery

- Poly Components Material :- Polypropylene Co polymer
- Color :- Blue
- Testing Parameters :- IS 13369:1992, IEC 60896-21 & IEC 61427-1

Charging Profile



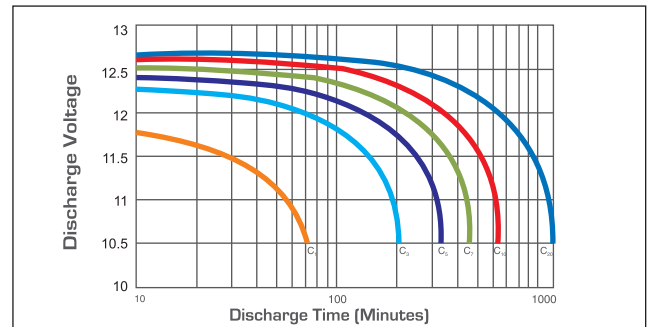
Self Discharge Characteristics @ Different Temperature



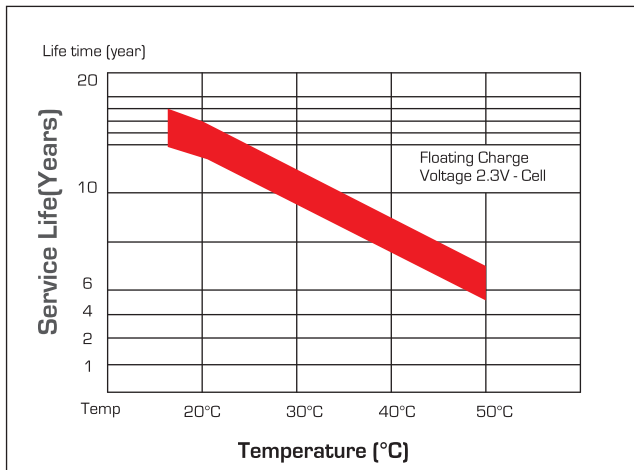
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	NA	12.90-13.10V
75%	NA	≤ 12.75V
50%	NA	≤ 12.45V
25%	NA	≤ 12.1V
0%	NA	11.9V

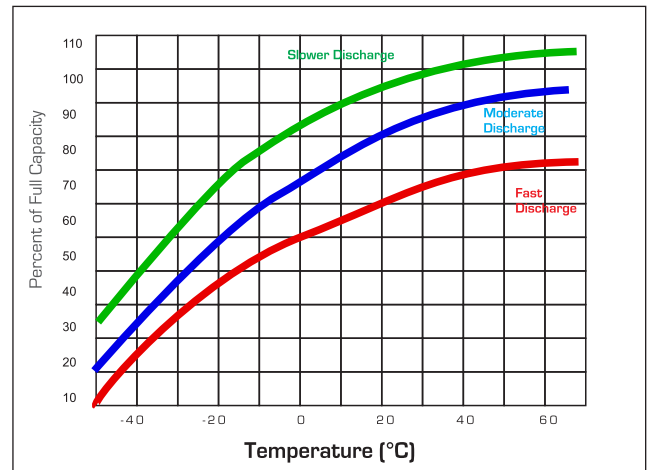
Discharging Characteristics at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



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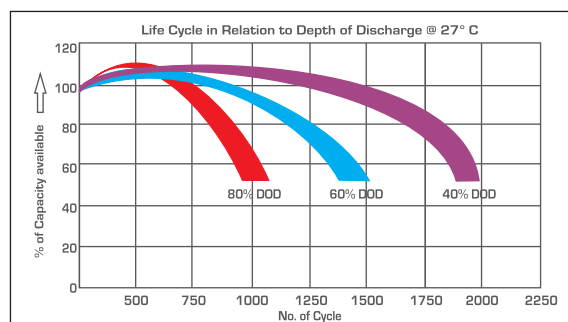


TECHNICAL SPECIFICATION- Tubular Gel Battery

Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature -4°F to 131°F (-20°C to +55°C) At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	Self Discharge As per discharge Graph

Expected Life



Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.2	28.4	56.8
Float Voltage	13.8	27.6	55.2
Equalization Voltage	14.8	29.6	59.2
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Eastman Gel battery testing procedure adhere IEC , CE & UL 94 test standards

Comparison in between Praxis Tubular Gel & AGM Gel VRLA

S.No	Parameter	Praxis Tubular Gel	AGM VRLA
1	Plate Technology	Tall Tubular Plate	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution-Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Electrolyte in-Between Gel	Electrolyte in-between AGM
5	Water Loss	Negligible	Negligible
6	Water Top up	No water top up throughout Warranty Life	No water top up throughout Warranty Life
7	Life Extension	Not Applicable	Not Applicable
8	Self Discharge	Very Low < 2.0%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	1000 Cycle	450 Cycle
10	Spillage	Spill-proof	Spill-proof
11	Fumes	No	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

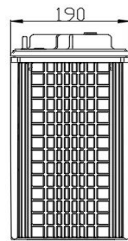
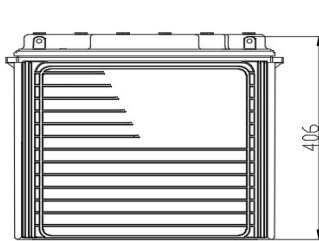
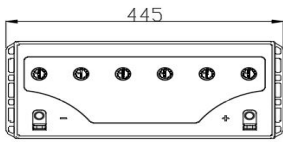
Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 25 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



Vent Plug Type :-
M18 with vent valve & flame arrestor assembly



TECHNICAL SPECIFICATION- Tubular Gel Battery



Product Features :-

1. Robust Tubular with High pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Gelled electrolyte - no stratification and no failure due to PSOC
3. Valve regulated - no water top up during service life
4. Antimony free alloy - longer shelf life because of very low self discharge
5. Very High Design & service life as compare to than AGM VRLA
6. Good for Cyclic & Float Applications
7. Wide operating Temperature Range.

Technical Specifications

Model	Nominal Voltage	Rated Capacity 10 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length [± 3 mm]	Width [± 3 mm]	Height [± 3 mm]		
PX150PT [12 V 150 AH @ C20]	12	135	445	190	406	56.2	L
PX200PT [12 V 200 AH @ C20]	12	180	445	190	406	61.8	L

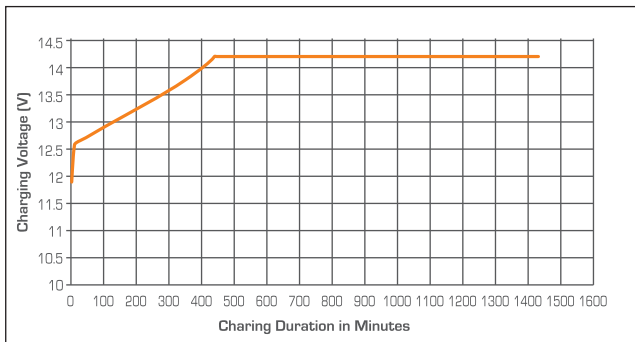
Electrical Parameters & Charging Profile

Battery Specified Capacity Test @ 27 °C						
	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
PX150PT [12 V 150 AH @ C20]	150	135	124	112	97	68
PX200PT [12 V 200 AH @ C20]	200	180	166	150	129	90
Ah & Wh Efficiency						
Ah Efficiency	>96%		Wh Efficiency		>84%	

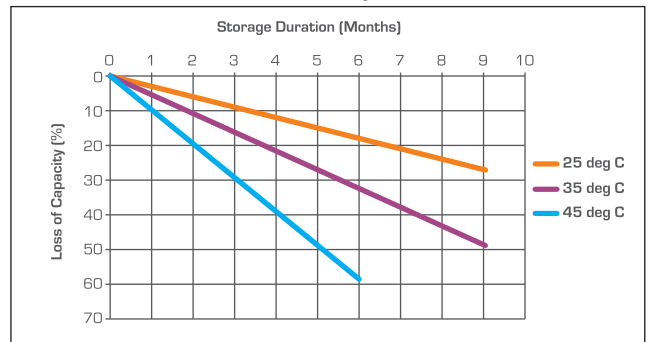
TECHNICAL SPECIFICATION- Tubular Gel Battery

- Poly Components Material :- Polypropylene Co polymer
- Color :- Blue
- Testing Parameters :- IS 13369:1992, IEC 60896-21 & IEC 61427-1

Charging Profile



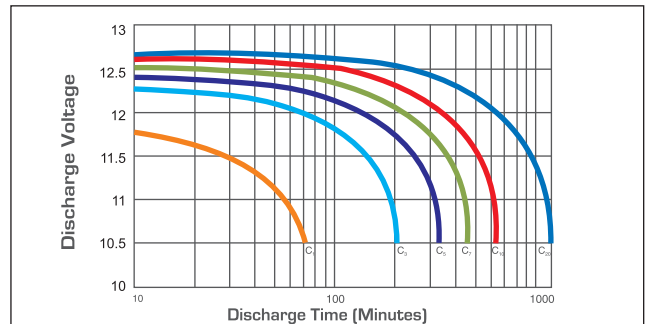
Self Discharge Characteristics @ Different Temperature



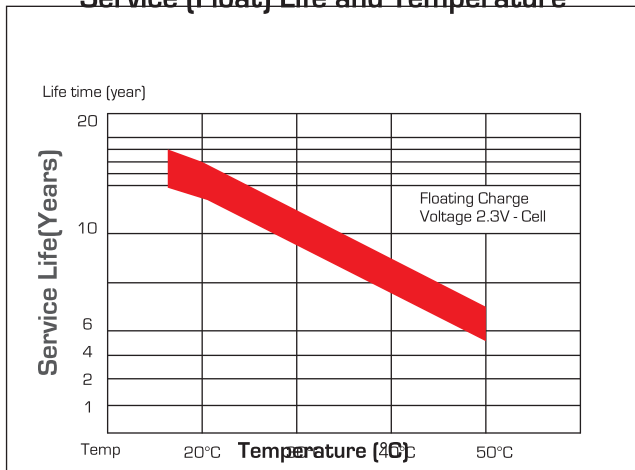
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	NA	12.90-13.10V
75%	NA	≤ 12.75V
50%	NA	≤ 12.45V
25%	NA	≤ 12.1V
0%	NA	11.9V

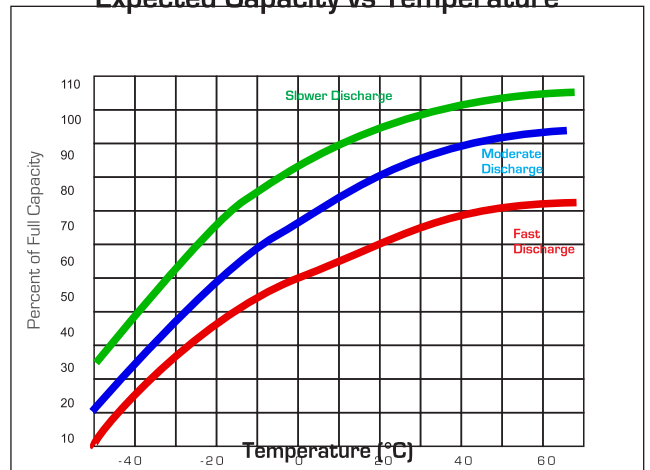
Discharging Characteristics at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



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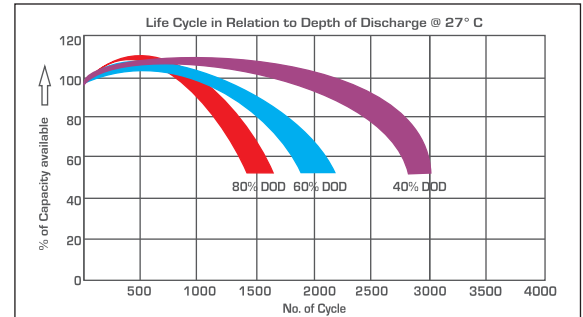


TECHNICAL SPECIFICATION- Tubular Gel Battery

Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature	Self Discharge
	-4°F to 131°F (-20°C to +55°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	As per discharge Graph

Expected Life



Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.2	28.4	56.8
Float Voltage	13.8	27.6	55.2
Equalization Voltage	14.8	29.6	59.2
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Eastman Gel battery testing procedure adhere IEC , CE & UL 94 test standards

Comparison in between Praxis Tubular Gel & AGM Gel VRLA

S.No	Parameter	Praxis Tubular Gel	AGM VRLA
1	Plate Technology	Tall Tubular Plate	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution-Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Electrolyte in- Between Gel	Electrolyte in- between AGM
5	Water Loss	Negligible	Negligible
6	Water Top up	No water top up throughout Warranty Life	No water top up throughout Warranty Life
7	Life Extension	Not Applicable	Not Applicable
8	Self Discharge	Very Low < 2.0%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	1500 Cycle	450 Cycle
10	Spillage	Spill-proof	Spill-proof
11	Fumes	No	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 25 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



Vent Plug Type :-
M18 with vent valve & flame arrestor assembly



TECHNICAL SPECIFICATION

Short Tubular Maintenance Free Battery

Product Features :

1. Special alloy with High pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Ceramic Vent Plugs - Special ceramic vent plugs for controlled acid fumes.
3. Special Negative grid alloy to have MF characteristics.
4. Consistent backup throughout life
5. Spill proof vent plug for zero spillage
6. Low self Discharge equivalent to AGM VRLA.
7. Good for deep cyclic application as compare to AGM VRLA.
8. Maintenance free character for 1 year @ 27°C
9. Very High Design & service life as compare to than AGM VRLA.



Technical Specifications

Model	Nominal Voltage	Rated Capacity 20 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length (± 3 mm)	Width (± 3 mm)	Height (± 3 mm)		
PX150SMF [12 V 150 AH @ C20]	12	150	512	212	273	49.05	L
PX200SMF [12 V 200 AH @ C20]	12	200	517	274	275	62.5	L

Electrical Parameters & Charging Profile

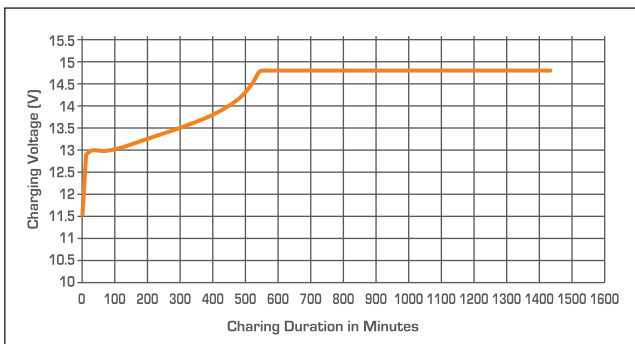
Battery Specified Capacity Test @ 27 °C					
	C20 @10.5 V	C10 @10.8 V	C3 @10.8 V	C1 @10.5 V	Energy Kwh (10Hr)
PX150SMF [12 V 150 AH @ C20]	150	135	97	68	1.62
PX200SMF [12 V 200 AH @ C20]	200	180	129	90	2.16
Ah & Wh Efficiency					
Ah Efficiency	>90%		Wh Efficiency		>75%

TECHNICAL SPECIFICATION

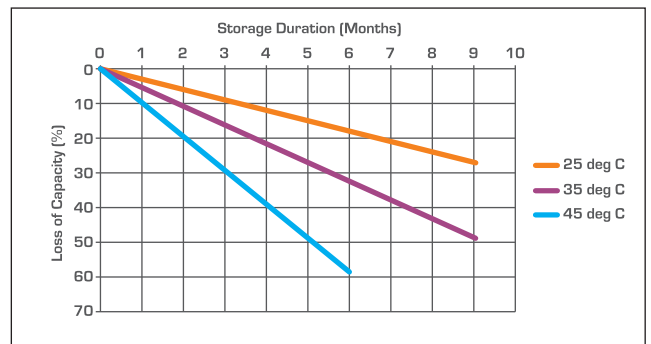
Short Tubular Maintenance Free Battery

- Poly Components Material:- Polypropylene Co polymer.
- Color :- Black
- Testing Parameters :- IS 13369:1992 & IEC 60896:11

Charging Profile



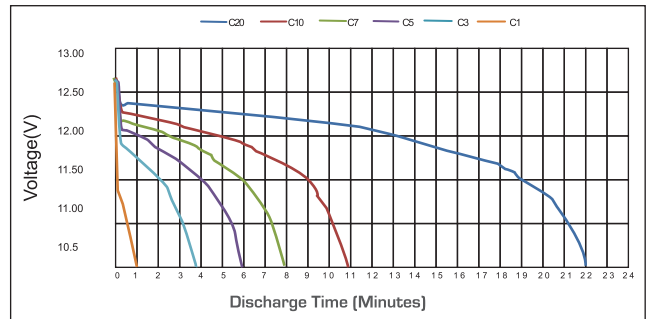
Self Discharge Characteristics @ Different Temperature



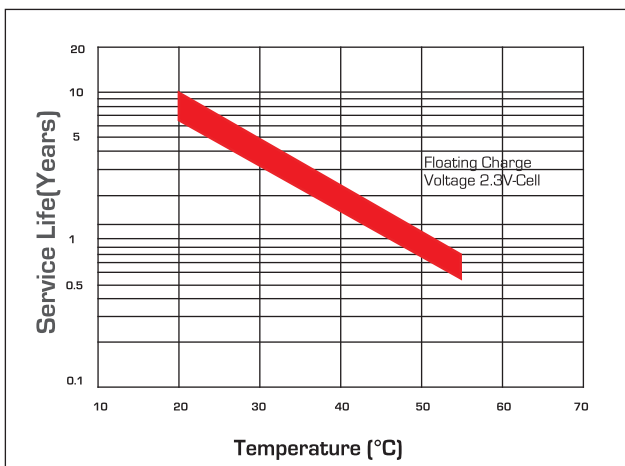
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	1.245-1.275	12.55V-12.70V
75%	≤ 1.225	≤ 12.4V
50%	≤ 1.190	≤ 12.1V
25%	≤ 1.155	≤ 12.0V
0%	1.120	11.8V

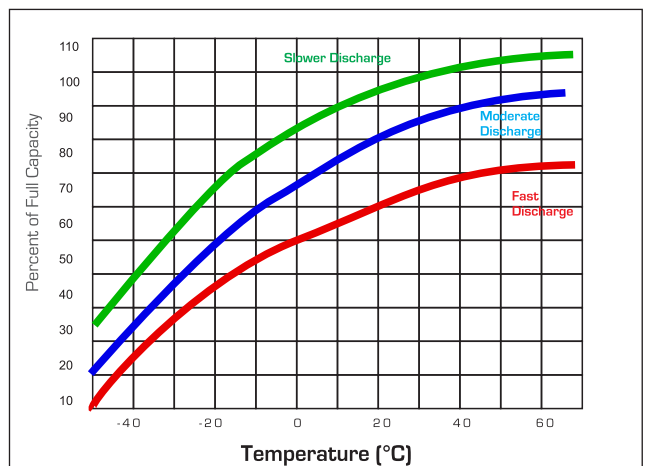
DISCHARGING CHARACTERISTICS at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



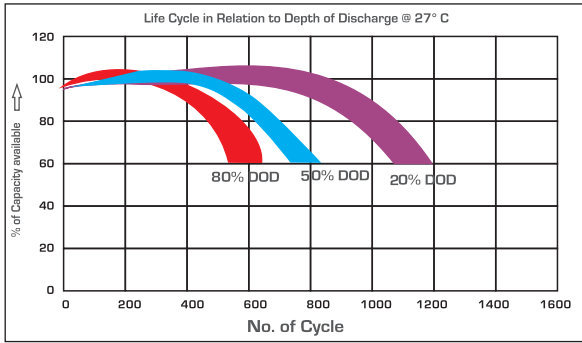
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TECHNICAL SPECIFICATION

Short Tubular Maintenance Free Battery

Expected Life



Specific Gravity & Self Discharge w.r.t. Temperature

	Add	Subtract
CHARGING TEMPERATURE COMPENSATION	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature -4°F to 131°F (-20°C to +55°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	Self Discharge As per discharge Graph

Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.4	28.8	57.6
Float Voltage	13.6	27.2	54.4
Equalization Voltage	16	32	64
Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Comparison in between Praxis Short Tubular Maintenance Free & AGM Gel VRLA

S.No	Parameter	Praxis Short Tubular Maintenance Free	AGM VRLA
1	Plate Technology	Short Tubular	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution-Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Free Flow Electrolyte	Electrolyte in- between AGM
5	Water Loss	Very Low	Negligible
6	Water Top up	No water top up throughout Warranty Life	No water top up throughout Warranty Life
7	Life Extension	Life can be extended via top-up	Not Applicable
8	Self Discharge	Low < 2.5%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	600 Cycle	450 Cycle
10	Spillage	Low Spill Proof	Spill-proof
11	Fumes	Low Fumes	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 21 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8



Vent Plug Type :-
M22 coin type





Eastman Auto & Power Ltd.

572, Udyog Vihar, Phase-V, Gurgaon-122016,
Haryana, India. E-mail- info@eastmanglobal.com,
Tel. : +91- 0124 - 4627900
www.eaplworld.com