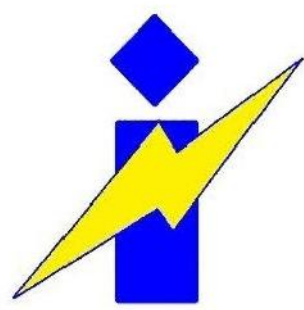
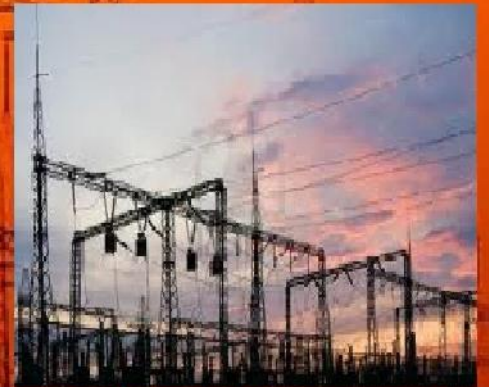
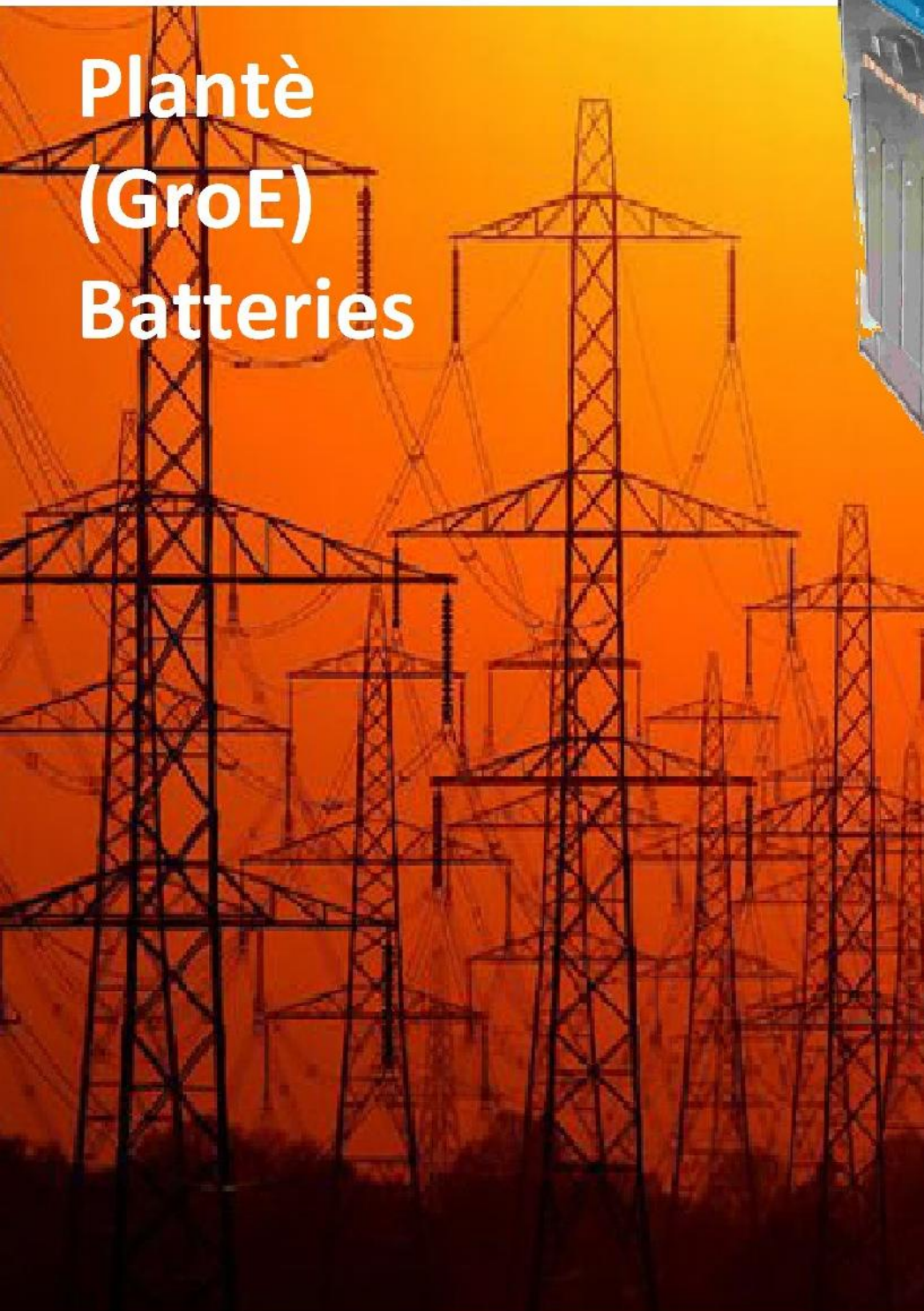


interberg



Plantè (GroE) Batteries



catalogue

ed 04/20180319



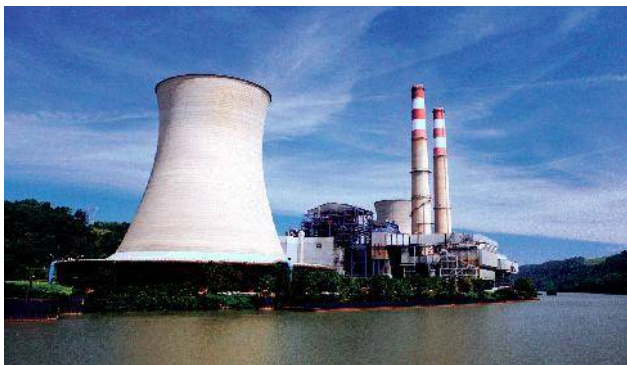
ISO 9001:08 -- ISO 14001:04
OHSAS 18001:07
Certificate No.: 09-QEO-01427-TIC

Reliable Technology

Interberg Plantè Batteries are precision engineered to reach a life expectancy of 20 years and more. Its lamellar construction results in a quite effective active surface area resulting in an extraordinarily high charge acceptance. Rigid and electrolyte resistant PVC separators insulate the plates from each other. No external paste or oxide is on the positive plates and a part of the grid metal is electrochemically converted into active material throughout the battery's life.

Highest Material Quality

The positive plates of the Interberg Plantè batteries are made of pure (99.99%) lead and a low antimony lead alloy is used for the negative plates, to ensure a very long life expectancy but also a real ruggedness under extreme operations and environmental conditions. Interberg Plantè batteries offer excellent discharge capabilities, they can be operated within a narrow charge – discharge voltage. Operation temperature ranges from -10°C to +50°C. Their unique feature of no degradation in capacity throughout its entire life, make it possible for these batteries to last for 20 years and more in stand-by float application at 25°C.



Outstanding Product Features

- Excellent High Discharge Performance
- Transparent Containers for easy maintenance
- No aging margin required as per IEEE 485:1997
- Topping-up frequency: once in 12 to 18 months
- Rapid recharging capability
- Superior all-round voltage profile and energy (Wh) output
- Energy output is much higher than a similar/equivalent capacity tubular battery
- Higher Ah and Wh efficiencies

Easy Maintenance

Checking of the electrolyte levels in the cells, as well as the visual inspection of both the plates and separators is easy and quick thanks to the transparent containers. The cell vent construction enables an easy and comfortable measurement of physical parameters like electrolyte's specific gravity. Except in the case of extremely high ambient temperatures, topping-up in up to 2 years intervals will be more than sufficient.

Application Examples

- Power Plants
- Substations
- Process Industries
- UPS Systems
- C&I
- Emergency Lighting
- Telecommunications

Compliant Standards

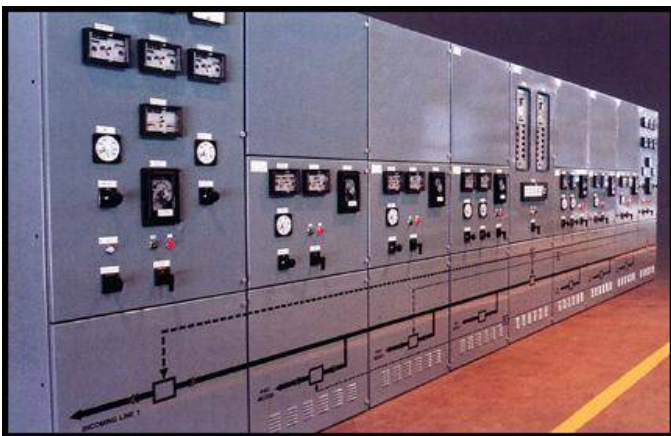
Interberg high discharge performance easy maintenance Plantè Batteries are conform with the performance and operation requirements of BS-6290:Part 2 and IEC-EN-60896-1.

Product Characteristics

- As indicated in Appendix B of BS-6290:Part 2 : "the discharge-charge characteristics do not vary throughout life and the voltage characteristics discharge, float or recharge are stable and reproducible. While there is no reliable test to confirm the service endurance of the product, experience has shown the under well maintained float conditions a product life of up to 25 year can be expected".
- Positive Plates : Unique lamellar construction from ultra-pure lead (99.99 % purity) to ensure least open circuit loss and no fall-off in capacity throughout the entire long life of the battery.
- Negative Plates : Made of pasted grid construction. Designed for balanced performance and life.

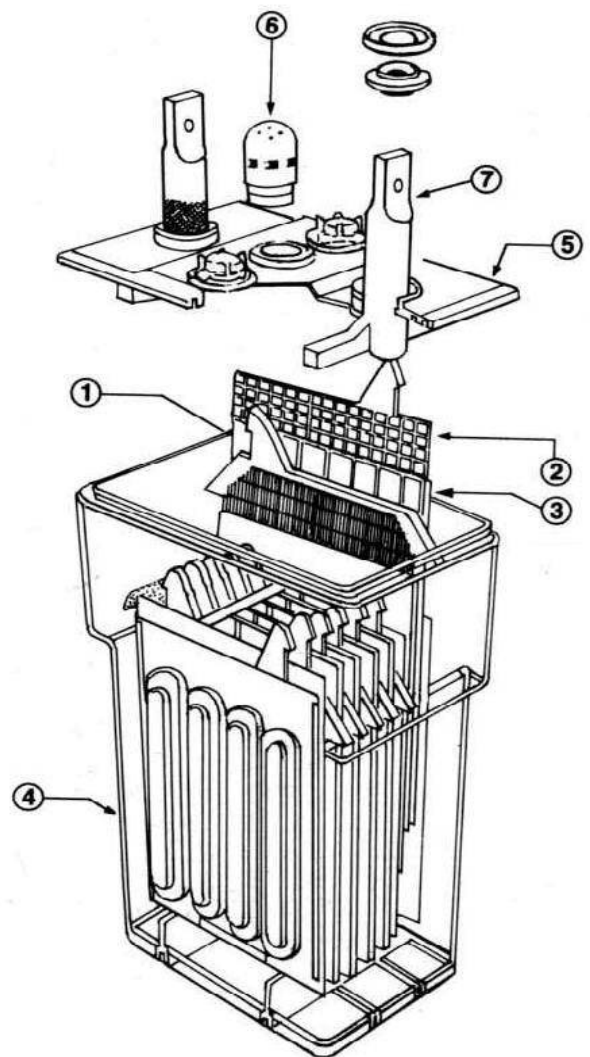
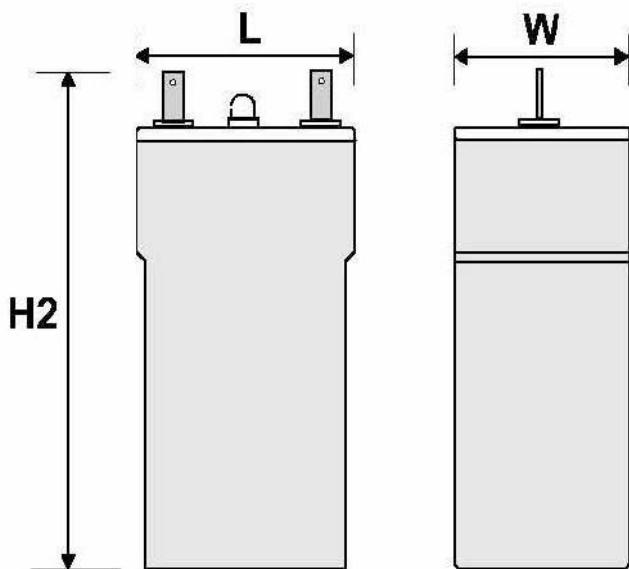


- Separators : the combined use of porous rubber and porous PVC, the separators offer a high porosity and an excellent corrosion resistance. This enables them to absorb more acid, what leads to a highly efficient internal short-circuit prevention, under a fast electrolyte diffusion, thus largely reducing the cell's resistance.
- Cell cases : cell jars are made of nice looking corrosion proof, flame retardant, strong shock and impact resistant transparent ABS plastic, which enables a perfect vision of the cell's internal parts.
- Terminal Posts/Pillars : fitted with a built-in copper core insert. The cell terminals have a unique sealing structure which avoids stress on the posts caused by the elongation of the positive plates, thus ensuring a reliable terminal sealing and a quite long battery life expectancy.



Operation Conditions

- * Maximum operation altitude : shall not exceed 4000 m
- * Operation Temperature Range : between -10°C and +55°C
- * Best Operation Temperature Range : between +15°C and +30°C
- * Relative Humidity : 90 %
- * Nominal Electrolyte Specific Gravity : 1.20 +/- 0.010 at 20°C
- * Electrolyte Refilling Period : ca. 2-3 years at normal float charge at 20°C
- * Electrolyte Gravity Temp. Coefficient : 0.0008 per 1°C
- * Floating Charge Voltage : 2.25 V/cell/20°C
- * Float Charge Life Expectancy : 20+ years at 20°C
- * Self Discharge : approx. 2 % per month at 20°C



Cell Types and Specifications 25 Ah/Plate Cells

Cell Type	V	Capacity (Ah/10h) at 1.85V C.O.V.	Cell Length (mm)	Cell Width (mm)	Cell Height (mm)	Cell Weight (Dry) Kg	Cell Weight (Wet) Kg	Acid Content (1.19 Kg/Lit) Litres	Min. Trickle Charge Current (mA)	Max Trickle Charge Current (mA)
YKP 7	2	75	173	203	426	10.50	18.40	6.50	60	180
YKP 9	2	100	173	203	426	13.50	21.10	6.30	80	240
YKP 11	2	125	173	203	426	15.50	22.50	5.80	100	300
YKP 13	2	150	173	203	426	18.00	24.50	5.40	125	375
YKP 15	2	175	210	203	426	19.70	28.90	7.60	140	420
YKP 17	2	200	210	203	426	22.00	30.80	7.30	160	480
YKP 19	2	225	248	203	426	24.30	35.10	8.90	180	540
YKP 21	2	250	248	203	426	26.70	37.10	8.60	200	600
YKP 23	2	275	286	203	426	29.10	41.60	10.30	220	660
YKP 25	2	300	362	203	426	31.50	43.60	10.00	240	720
YKP 27	2	325	362	203	426	36.30	52.90	13.70	260	780
YKP 29	2	350	362	203	426	38.50	54.70	13.40	280	840
YKP 31	2	375	362	203	426	40.80	56.70	13.10	300	900
YKP 33	2	400	362	203	426	43.20	58.70	12.80	320	960
YKP 35	2	425	362	203	426	45.60	60.70	12.50	340	1020

Cell Types and Specifications 100 Ah/Plate Cells

Cell Type	V	Capacity (Ah/10h) At 1.85V C.O.V.	Cell Length (mm)	Cell Width (mm)	Cell Height (mm)	Cell Weight (Dry) Kg	Cell Weight (Wet) Kg	Acid Content (1.19 Kg/Lit) Litres	Min. Trickle Charge Current (mA)	Max Trickle Charge Current (mA)
YHP 11	2	535	230	368	682	64.30	97.20	27.10	300	600
YHP 13	2	645	230	368	682	74.80	105.9	25.70	360	720
YHP 15	2	750	433	368	682	89.60	135.7	38.10	420	840
YHP 17	2	860	433	368	682	100.0	144.4	36.70	480	960
YHP 19	2	965	433	368	682	110.3	153.1	35.40	550	1100
YHP 21	2	1070	433	368	682	121.4	175.8	44.80	600	1200
YHP 23	2	1180	433	368	682	131.8	184.4	43.50	660	1320
YHP 25	2	1285	433	368	682	145.3	215.6	58.10	720	1440
YHP 27	2	1395	433	368	682	155.6	221.9	54.80	780	1560
YHP 29	2	1500	433	368	682	165.9	230.6	53.50	850	1700
YHP 31	2	1605	509	368	682	181.7	262.3	66.60	900	1800
YHP 33	2	1715	509	368	682	192.0	270.9	65.20	960	1920
YHP 35	2	1820	509	368	682	202.3	279.6	63.90	1025	2050
YHP 37	2	1930	585	368	682	215.9	308.8	76.80	1100	2200
YHP 39	2	2035	585	368	682	225.9	317.4	75.60	1150	2300
YHP 41	2	2140	585	368	682	236.2	325.9	74.10	1200	2400
YHP 43	2	2250	585	368	682	246.6	334.6	72.70	1250	2500

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.90 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	50.0	43.1	41.2	39.5	34.1	29.4	22.1	17.0	14.2	11.9	10.3	9.0	8.2	7.7	7.3
YKP 9	66.7	57.5	54.9	52.6	45.5	39.2	29.4	22.7	18.9	15.9	13.7	12.0	11.0	10.2	9.7
YKP 11	83.3	71.8	68.7	65.8	56.8	49.0	36.8	28.4	23.6	19.8	17.1	15.1	13.7	12.8	12.1
YKP 13	100	86.2	82.4	78.9	68.2	58.8	44.1	34.1	28.3	23.8	20.5	18.1	16.5	15.3	14.6
YKP 15	117	101	96.2	92.1	79.5	68.6	51.5	39.8	33.0	27.8	24.0	21.1	19.2	17.9	17.0
YKP 17	133	115	110	105	90.9	78.4	58.8	45.5	37.7	31.7	27.4	24.1	22.0	20.4	19.4
YKP 19	150	129	124	118	102	88.2	66.2	51.1	42.5	35.7	30.8	27.1	24.7	23.0	21.8
YKP 21	167	144	137	132	114	98.0	73.5	56.8	47.2	39.7	34.2	30.1	27.5	25.5	24.3
YKP 23	183	158	151	145	125	108	80.9	62.5	51.9	43.7	37.7	33.1	30.2	28.1	26.7
YKP 25	200	172	165	158	136	118	88.2	68.2	56.6	47.6	41.1	36.1	33.0	30.6	29.1
YKP 27	217	187	179	171	148	128	95.6	73.9	61.3	51.6	44.5	39.2	35.7	33.2	31.6
YKP 29	233	201	192	184	159	137	103	79.5	66.0	55.6	47.9	42.5	38.5	35.7	34.0
YKP 31	250	216	206	197	171	147	110	85.2	70.8	59.5	51.4	45.2	41.2	38.3	36.4
YKP 33	267	230	220	211	182	157	118	90.9	75.5	63.5	54.8	48.2	44.0	40.8	38.8
YKP 35	283	244	234	224	193	167	125	96.6	80.2	67.5	58.2	51.2	46.7	43.4	41.3

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.87 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	50.7	50.0	49.3	47.5	39.9	34.1	24.2	18.8	15.2	12.7	11.0	9.6	8.7	8.0	7.4
YKP 9	67.6	66.7	65.8	63.3	53.2	45.5	32.3	25.0	20.2	16.9	14.7	12.8	11.6	10.6	9.9
YKP 11	84.5	83.3	82.2	79.1	66.5	56.8	40.3	31.3	25.3	21.2	18.4	16.0	14.5	13.3	12.4
YKP 13	101	100	98.7	94.9	79.8	68.2	48.4	37.5	30.3	25.4	22.1	19.2	17.4	16.0	14.9
YKP 15	118	117	115	111	93.1	79.5	56.5	43.8	35.4	29.7	25.7	22.4	20.3	18.6	17.3
YKP 17	135	133	132	127	106	90.9	64.5	50.0	40.4	33.9	29.4	25.6	23.3	21.3	19.8
YKP 19	152	150	148	142	120	102	72.6	56.3	45.5	38.1	33.1	28.8	26.2	23.9	22.3
YKP 21	169	167	165	158	133	114	80.6	62.5	50.5	42.4	36.8	32.1	29.1	26.6	24.8
YKP 23	186	183	181	174	146	125	88.7	68.8	55.6	46.6	40.4	35.3	32.0	29.3	27.2
YKP 25	203	200	197	190	160	136	96.8	75.0	60.6	50.8	44.1	38.5	34.9	31.9	29.7
YKP 27	220	217	214	206	173	148	105	81.3	65.7	55.1	47.8	41.7	37.8	34.6	32.2
YKP 29	237	233	230	222	186	159	113	87.5	70.7	59.3	51.5	44.9	40.7	37.2	34.7
YKP 31	253	250	248	237	200	171	121	93.8	75.8	63.6	55.1	48.1	43.6	39.9	37.1
YKP 33	270	267	263	253	213	182	129	100	80.8	67.8	58.8	51.3	46.5	42.6	39.6
YKP 35	287	283	280	269	226	193	137	106	85.9	72.0	62.5	54.5	49.4	45.2	42.1

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.85 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	57.7	55.1	52.8	50.0	43.4	37.1	25.9	19.7	15.6	13.2	11.4	9.9	8.9	8.2	7.5
YKP 9	76.9	73.5	70.4	66.7	57.8	49.5	34.5	26.3	20.8	17.5	15.2	13.2	11.9	10.9	10.0
YKP 11	96.2	91.9	88.0	83.3	72.3	61.9	43.1	32.9	26.0	21.9	18.9	16.4	14.9	13.6	12.5
YKP 13	115	110	106	100	86.7	74.3	51.7	39.5	31.3	26.3	22.7	19.7	17.9	16.3	15.0
YKP 15	135	129	123	117	101	86.6	60.3	46.1	36.5	30.7	26.5	23.0	20.8	19.0	17.5
YKP 17	154	147	141	133	116	99.0	69.0	52.6	41.7	35.1	30.3	26.3	23.8	21.7	20.0
YKP 19	173	165	159	150	130	111	77.6	59.2	46.9	39.5	34.1	29.6	26.8	24.5	22.5
YKP 21	192	184	176	167	145	124	86.2	65.8	52.1	43.9	37.9	32.9	29.8	27.2	25.0
YKP 23	212	202	194	183	159	136	94.8	72.4	57.3	48.2	41.7	36.2	32.7	29.9	27.5
YKP 25	231	221	211	200	173	149	103	78.9	62.5	52.6	45.5	39.5	35.7	32.6	30.0
YKP 27	250	239	229	217	188	161	112	85.5	67.7	57.0	49.2	42.8	38.7	35.3	32.5
YKP 29	269	257	247	233	202	173	121	92.1	72.9	61.4	53.0	46.1	41.7	38.0	35.0
YKP 31	289	276	264	250	217	186	129	98.7	78.1	65.8	56.8	49.3	44.6	40.8	37.5
YKP 33	308	294	282	267	231	198	138	105	83.3	70.2	60.6	52.6	47.6	43.5	40.0
YKP 35	327	313	299	283	246	210	147	112	88.5	74.6	64.4	55.9	50.6	46.2	42.5

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.80 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	73.5	69.4	67.0	62.5	51.4	42.9	26.8	20.3	16.3	13.4	11.5	10.1	9.0	8.2	
YKP 9	98.0	92.6	89.3	83.3	68.5	57.1	35.7	27.0	21.7	17.9	15.4	13.5	12.0	11.0	
YKP 11	123	116	112	104	85.6	71.4	44.6	33.8	27.2	22.3	19.2	16.9	15.1	13.7	
YKP 13	147	139	134	125	103	85.7	53.6	40.5	32.6	26.8	23.1	20.3	18.1	16.5	
YKP 15	172	162	156	146	120	100	62.5	47.3	38.0	31.3	26.9	23.6	21.1	19.2	
YKP 17	196	185	179	167	137	114	71.4	54.1	43.5	35.7	30.8	27.0	24.1	22.0	
YKP 19	221	208	201	188	154	129	80.4	60.8	48.9	40.2	34.6	30.4	27.1	24.7	
YKP 21	245	232	223	208	171	143	89.3	67.6	54.3	44.6	38.5	33.8	30.1	27.5	
YKP 23	270	255	246	229	188	157	98.2	74.3	59.8	49.1	42.3	37.2	33.1	30.2	
YKP 25	294	278	268	250	206	171	107	81.1	62.2	53.6	46.2	40.5	36.1	33.0	
YKP 27	319	301	290	271	223	186	116	87.8	70.7	58.0	50.0	43.9	39.2	35.7	
YKP 29	343	324	313	292	240	200	125	94.6	76.1	62.5	53.8	47.3	42.2	38.5	
YKP 31	368	347	335	313	257	214	134	101	81.5	67.0	57.7	50.7	45.2	41.2	
YKP 33	392	370	357	333	274	229	143	108	87.0	71.4	61.5	54.1	48.2	44.0	
YKP 35	417	394	380	354	291	243	152	115	92.4	75.9	65.4	57.4	51.2	46.7	

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.75 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	91.5	85.2	81.5	75.0	59.5	45.5	27.8	21.1	17.0	13.9	12.2				
YKP 9	122	114	109	100	79.4	60.6	37.0	28.2	22.7	18.5	16.3				
YKP 11	152	142	136	125	99.2	75.8	46.3	35.2	28.4	23.1	20.3				
YKP 13	183	171	163	150	119	90.9	55.6	42.3	34.1	27.7	24.4				
YKP 15	213	199	190	175	139	106	64.8	49.3	39.8	32.3	28.5				
YKP 17	244	227	217	200	159	121	74.1	56.3	45.5	37.0	32.5				
YKP 19	274	256	245	225	179	136	83.3	63.4	51.1	41.6	36.6				
YKP 21	305	284	272	250	198	152	92.6	70.4	56.8	46.2	40.7				
YKP 23	335	313	299	275	218	167	102	77.5	62.5	50.8	44.7				
YKP 25	366	341	326	300	238	182	111	84.5	68.2	55.5	48.8				
YKP 27	396	369	353	325	258	197	120	91.5	73.9	60.1	52.8				
YKP 29	427	398	380	350	278	212	130	98.6	79.5	64.7	56.9				
YKP 31	457	426	408	375	298	227	139	106	85.2	69.3	61.0				
YKP 33	488	455	435	400	318	242	148	113	90.9	73.9	65.0				
YKP 35	518	483	462	425	337	258	157	120	96.6	78.6	69.1				

Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.70 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	114	101	96.2	87.2	67.0										
YKP 9	152	135	128	116	89.3										
YKP 11	189	169	160	145	112										
YKP 13	227	203	192	174	134										
YKP 15	265	237	224	204	156										
YKP 17	303	270	256	233	179										
YKP 19	341	304	289	262	201										
YKP 21	379	338	321	291	223										
YKP 23	417	372	353	320	246										
YKP 25	455	405	385	349	268										
YKP 27	492	439	417	378	290										
YKP 29	550	473	449	407	313										
YKP 31	568	507	481	436	335										
YKP 33	606	541	513	465	357										
YKP 35	644	574	545	494	380										

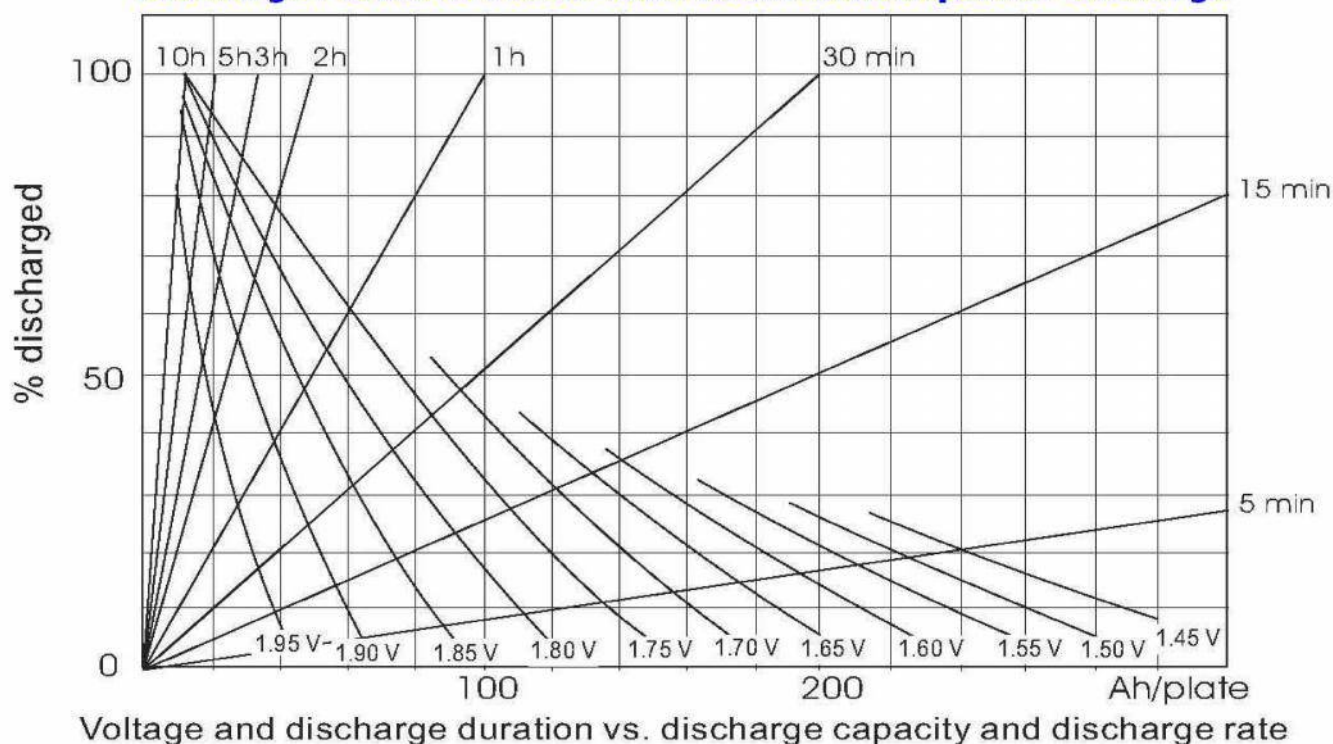
Nominal Electrical Discharge Parameters

25 Ah/Plate Cells (YKP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.65 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YKP 7	134	121	110	98.7	73.5										
YKP 9	179	161	147	132	98.0										
YKP 11	223	202	184	165	123										
YKP 13	268	242	221	197	147										
YKP 15	313	282	257	230	172										
YKP 17	357	323	294	263	196										
YKP 19	402	363	331	296	221										
YKP 21	446	403	368	329	245										
YKP 23	491	444	404	362	270										
YKP 25	536	484	441	395	294										
YKP 27	580	524	478	428	319										
YKP 29	625	565	515	461	343										
YKP 31	670	605	552	493	368										
YKP 33	714	645	588	526	392										
YKP 35	759	686	625	559	417										

Discharge Profile of Plantè Cells at different depths of discharge



Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.90 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	357	308	294	282	243	210	157	122	101	84.9	73.3	64.5	58.8	54.6	51.9
YHP 13	428	369	353	338	292	252	189	146	121	102	87.9	77.3	70.5	65.5	62.3
YHP 15	499	431	412	394	341	294	220	170	141	119	103	90.2	82.3	76.4	72.7
YHP 17	571	492	470	451	389	336	252	195	162	136	117	103	94.1	87.3	83.1
YHP 19	642	553	529	507	438	378	283	219	182	153	132	116	106	98.3	93.5
YHP 21	713	615	588	563	486	420	315	243	202	170	147	129	118	109	104
YHP 23	785	676	647	620	535	462	346	268	222	187	161	142	129	120	114
YHP 25	856	738	706	676	584	504	378	292	242	204	176	155	141	131	125
YHP 27	927	799	764	732	632	546	409	316	263	221	191	168	153	142	135
YHP 29	999	861	823	788	681	588	441	341	283	238	205	181	165	153	145
YHP 31	1070	922	882	845	730	629	472	365	303	255	220	193	176	164	156
YHP 33	1141	984	941	901	778	671	504	389	323	272	235	206	188	175	166
YHP 35	1212	1045	1000	957	857	713	535	413	343	289	249	219	200	186	177
YHP 37	1284	1107	1058	1014	876	755	567	438	363	306	264	232	212	167	187
YHP 39	1353	1168	1117	1070	924	797	598	462	384	323	279	245	223	207	197
YHP 41	1427	1230	1176	1126	973	839	629	486	404	340	293	258	235	218	208
YHP 43	1498	1291	1235	1183	1021	881	661	511	424	357	308	271	247	229	218

Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.87 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	362	357	352	339	285	243	173	134	108	90.7	78.7	68.6	62.2	56.9	53.0
YHP 13	434	428	422	406	342	292	207	161	130	109	94.4	82.3	74.7	68.3	63.6
YHP 15	506	499	493	474	398	341	242	187	151	127	110	96.0	87.1	79.7	74.2
YHP 17	578	571	563	542	455	389	276	214	173	145	126	110	99.5	91.1	84.8
YHP 19	651	642	634	610	512	438	311	241	195	163	142	124	112	102	95.3
YHP 21	723	713	704	677	569	486	345	268	216	181	157	137	124	114	106
YHP 23	795	785	774	745	626	535	380	294	238	200	173	151	137	125	117
YHP 25	868	856	845	813	683	584	414	321	259	218	189	165	149	137	127
YHP 27	940	927	915	880	740	632	449	348	281	236	205	178	162	148	138
YHP 29	1012	999	986	948	797	681	483	375	303	254	220	192	174	159	148
YHP 31	1085	1070	1056	1016	854	730	518	401	324	272	236	206	187	171	159
YHP 33	1157	1141	1126	1084	911	778	552	428	346	290	252	220	199	182	170
YHP 35	1229	1213	1197	1151	968	827	587	455	368	308	268	233	212	194	180
YHP 37	1301	1284	1267	1219	1025	876	621	482	389	326	283	247	224	205	191
YHP 39	1374	1355	1338	1287	1081	924	656	508	411	345	299	261	236	216	201
YHP 41	1446	1427	1408	1354	1138	973	690	535	432	363	315	274	249	228	212
YHP 43	1518	1498	1478	1422	1195	1021	725	562	454	381	330	288	261	239	223

Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.85 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	412	393	377	357	309	265	185	141	112	93.9	81.1	70.4	63.7	58.2	53.5
YHP 13	494	472	452	428	371	318	221	169	134	113	97.3	84.5	76.4	69.8	64.2
YHP 15	576	551	528	499	433	371	258	197	156	131	114	98.6	89.2	81.4	74.9
YHP 17	659	629	603	571	495	424	295	225	178	150	130	113	102	93.0	85.6
YHP 19	741	708	678	642	557	477	332	253	201	169	146	127	115	105	96.3
YHP 21	823	787	754	713	619	530	369	282	223	188	162	141	127	116	107
YHP 23	905	865	829	785	681	583	406	310	245	207	178	155	140	128	118
YHP 25	988	944	904	856	743	636	443	338	268	225	195	169	153	140	128
YHP 27	1070	1023	980	927	804	689	480	366	290	244	211	183	166	151	139
YHP 29	1152	1102	1055	999	866	742	517	394	312	263	227	197	178	163	150
YHP 31	1235	1180	1130	1070	928	795	553	422	334	282	243	211	191	175	161
YHP 33	1317	1259	1206	1141	990	848	590	451	357	300	259	225	204	186	171
YHP 35	1399	1338	1281	1213	1051	901	627	479	379	319	276	239	217	198	182
YHP 37	1482	1416	1356	1284	1113	954	664	507	401	338	292	253	229	209	193
YHP 39	1564	1495	1432	1355	1175	1006	701	535	424	357	308	268	242	221	203
YHP 41	1646	1574	1507	1427	1237	1059	738	563	446	375	324	282	255	233	214
YHP 43	1729	1652	1582	1498	1299	1112	775	591	468	394	341	296	268	244	225

Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.80 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	525	495	478	446	366	306	191	145	116	95.5	82.3	72.3	64.5	58.8	
YHP 13	629	594	573	535	440	367	229	174	140	115	98.8	86.8	77.3	70.5	
YHP 15	734	694	669	624	513	428	268	202	163	134	115	101	90.2	82.3	
YHP 17	839	793	764	713	586	489	306	231	186	153	132	116	103	94.1	
YHP 19	944	892	860	803	660	550	344	260	209	172	148	130	116	106	
YHP 21	1049	991	955	892	733	611	382	289	233	191	165	145	129	118	
YHP 23	1154	1090	1051	981	806	673	420	318	256	210	181	159	142	129	
YHP 25	1259	1189	1146	1070	880	734	459	347	279	229	198	174	155	141	
YHP 27	1364	1288	1242	1159	953	795	497	376	302	248	214	188	168	153	
YHP 29	1469	1387	1338	1248	1026	856	535	405	326	268	231	202	181	165	
YHP 31	1574	1486	1433	1338	1099	917	573	434	349	287	247	217	193	176	
YHP 33	1678	1585	1529	1427	1173	978	611	463	372	306	263	231	206	188	
YHP 35	1783	1684	1624	1516	1246	1039	650	492	395	325	280	246	219	200	
YHP 37	1888	1783	1720	1605	1319	1101	688	521	419	344	296	260	232	212	
YHP 39	1993	1882	1815	1694	1393	1162	726	550	442	363	313	275	245	223	
YHP 41	2098	1982	1911	1783	1466	1223	764	578	465	382	329	289	258	235	
YHP 43	2203	2081	2006	1873	1539	1284	803	607	489	401	346	304	271	247	

Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.75 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	652	608	582	535	425	324	198	151	122	98.9	87.0				
YHP 13	783	730	698	642	510	389	238	181	146	119	104				
YHP 15	913	851	814	749	594	454	277	211	170	138	122				
YHP 17	1044	973	930	856	679	519	317	241	195	158	139				
YHP 19	1174	1094	1047	963	764	584	357	271	219	178	157				
YHP 21	1305	1216	1163	1070	849	649	396	301	243	198	174				
YHP 23	1435	1338	1279	1177	934	713	436	332	268	218	191				
YHP 25	1566	1459	1396	1284	1019	778	476	362	292	237	209				
YHP 27	1696	1581	1512	1391	1104	843	515	392	316	257	226				
YHP 29	1827	1702	1628	1498	1189	908	555	422	341	277	244				
YHP 31	1957	1824	1745	1605	1274	973	594	452	365	297	261				
YHP 33	2088	1946	1861	1712	1359	1038	634	483	389	317	278				
YHP 35	2218	2067	1977	1819	1444	1102	674	512	413	336	296				
YHP 37	2349	2189	2094	1926	1529	1167	713	543	438	356	313				
YHP 39	2479	2310	2210	2033	1614	1232	753	573	462	376	331				
YHP 41	2610	2432	2326	2140	1698	1297	793	603	486	396	348				
YHP 43	2740	2553	2442	2247	1783	1362	832	633	511	415	365				

Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.70 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	811	723	686	622	478										
YHP 13	973	868	823	747	573										
YHP 15	1135	1012	960	871	669										
YHP 17	1297	1157	1097	995	764										
YHP 19	1459	1301	1235	1120	860										
YHP 21	1621	1446	1372	1244	955										
YHP 23	1783	1591	1509	1369	1051										
YHP 25	1946	1735	1646	1493	1146										
YHP 27	2108	1880	1783	1617	1242										
YHP 29	2270	2024	1921	1742	1338										
YHP 31	2432	2169	2058	1866	1433										
YHP 33	2594	2314	2195	1991	1529										
YHP 35	2756	2458	2332	2115	1624										
YHP 37	2918	2603	2469	2240	1720										
YHP 39	3080	2747	2606	2364	1815										
YHP 41	3242	2892	2744	2488	1911										
YHP 43	3405	3036	2881	2613	2006										

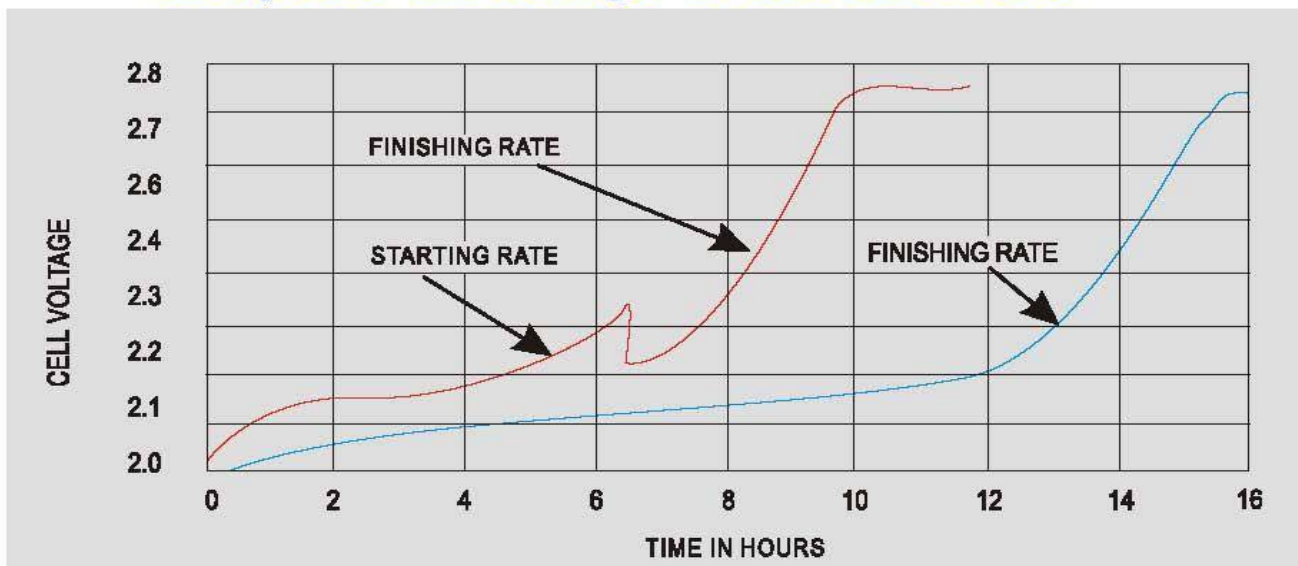
Nominal Electrical Discharge Parameters

100 Ah/Plate Cells (YHP Range)

(Discharge Currents to the nominal Cut-Off Voltage of 1.65 V/Cell)

Cell Time	1'	5'	15'	30'	45'	60'	2h	3h	4h	5h	6h	7h	8h	9h	10h
YHP 11	955	863	787	704	525										
YHP 13	1146	1036	944	845	629										
YHP 15	1338	1208	1102	986	734										
YHP 17	1529	1381	1259	1126	839										
YHP 19	1720	1553	1416	1267	944										
YHP 21	1911	1726	1574	1408	1049										
YHP 23	2102	1898	1731	1549	1154										
YHP 25	2293	2071	1888	1690	1259										
YHP 27	2484	2244	2046	1830	1364										
YHP 29	2675	2416	2203	1971	1469										
YHP 31	2866	2589	2360	2112	1574										
YHP 33	3057	2761	2518	2253	1678										
YHP 35	3248	2934	2675	2393	1783										
YHP 37	3439	3107	2832	2534	1888										
YHP 39	3630	3279	2990	2675	1993										
YHP 41	3821	3452	3147	2816	2098										
YHP 43	4013	3624	3304	2957	2203										

typical recharge profile for Plantè cells after a complete discharge at the 10h rate





Initial Charging

- Filling-in specific gravity : 1.190 +/- 0.005 at 20°C
- Rest period : 12 – 18 hours
- Charging may be commenced at any rate between the starting and finishing rates.
- Once cell voltages reach 2.36V, reduce current to finishing rate and continue charging until the cells are fully charged.
- Suspend charging if the temperature exceeds 50°C at any time during the charge. Allow temperature to come down to 40°C and continue charging at finishing rate. If however the time taken for the cell to cool down to 40°C is inordinately long, recharging may be started at 45°C.
- Cells are considered to be fully charged once three consecutive hourly readings of both cell voltage and electrolyte gravity are found to be constant. All cells should also gas freely. The voltage of each cell should be around 2.75V on top of charge

condition. However, as mentioned in the table, the minimum total Ah input must be provided to the cells even if the voltages and specific gravities are observed to be constant before that. On completion of charge, acid level must be adjusted to the maximum level marking in the cell container after correcting specific gravity of electrolyte to 1.21 +/- 0.005 at 20°C.

Recharge

Float Charge / Trickle Charge

All Plantè cells should strictly be floated at voltages as mentioned in Table 2 below. In case of lower float voltage because of any system constraint, an equalizing must be given once in 3 months.

Trickle charging currents should be so adjusted, anywhere between the maximum and the minimum allowed levels given in Table 2.

Temperature	Float Voltage
<5°C	2.30 +/-0.02 Vpc
5°C – 19°C	2.27 +/- 0.02 Vpc
20°C – 35°C	2.25 +/-0.02 Vpc
36°C – 45°C	2.23 +/- 0.02 Vpc

Quick Recharge

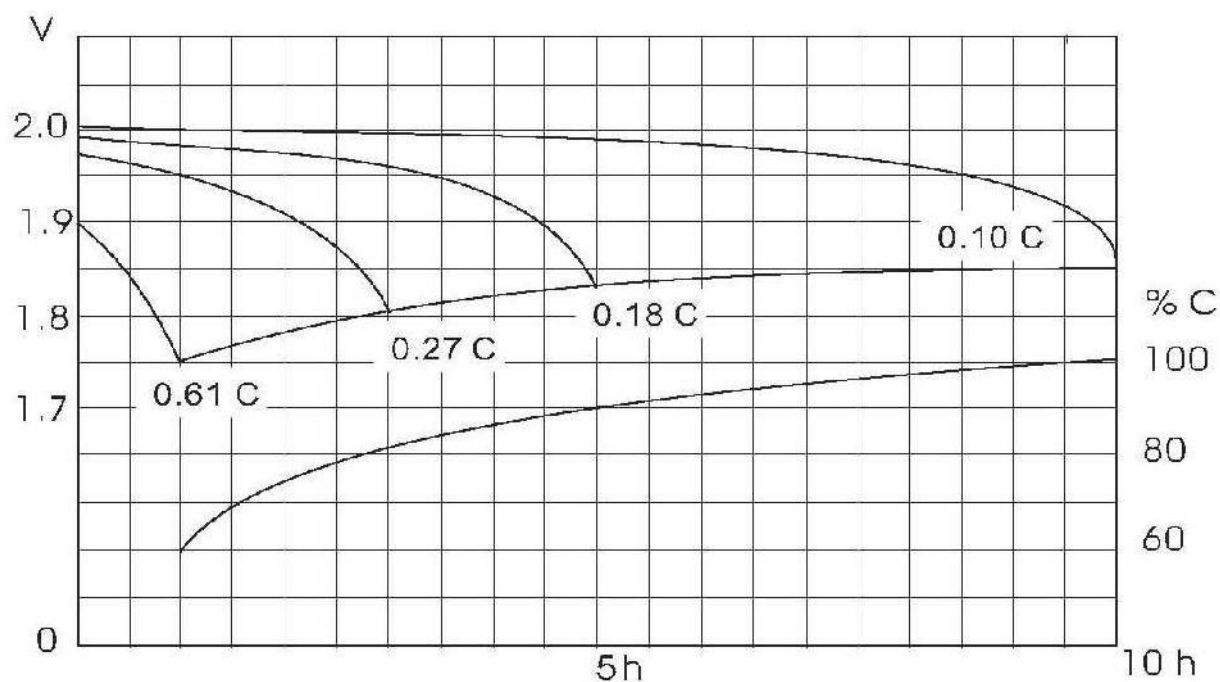
Interberg Plantè cells can also be recharged quickly after a deep discharge by applying the starting rates mentioned in the table. However, currents will have to be reduced to the finishing rate once individual cells attain a value of 2.36V. Care will also have to be taken so that electrolyte temperature does not exceed the maximum of 50°C, in which case the charging has to be discontinued until the temperature drops below 40°C. Charging

may be resumed at the finishing rate from this point.

Equalizing Charge

Periodical equalizing charge should be done, depending on the float voltage, by charging at constant current at finishing rate upto 2.75 Vpc, until the specific gravity reaches steady value and all cells gas freely, followed by a constant current charge at half the finishing rate for 16 to 24 hours.

interberg batteries



voltage and capacity vs. discharge duration rate for plantè cells



interberg batteries
mirador de despeñaperros 17
28400 collado villalba (madrid)
Spain



tel : 34-916263872
fax : 34-916263870
website : www.interberg.com
e-mail : info@interberg.com

interberg batteries



Interberg Batteries Ltd.
International Operations Division
"Rozas Nova" Building
Europolis Business Park
Castillo de Fuensladaña 4
28232 Las Rozas(Madrid) Spain
tel: + 34-91-6263872
fax: + 34-91-6263870
e-mail: info@interberg.com
website: www.interberg.com



ISO 9001:2008 - ISO 14001:04 - OHSAS 18001:07
Certificate No. 09-QEO-01427-TIC

an ATLANTIC POWER GROUP company

Buenos Aires - Sao Paulo - Madrid - Istanbul - Kuwait - Hong Kong - Melbourne