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# OPzV

## Valve Regulated Lead-Acid STANDBY POWER BATTERIES

**SPECIFICATION**

## ADVANTAGES

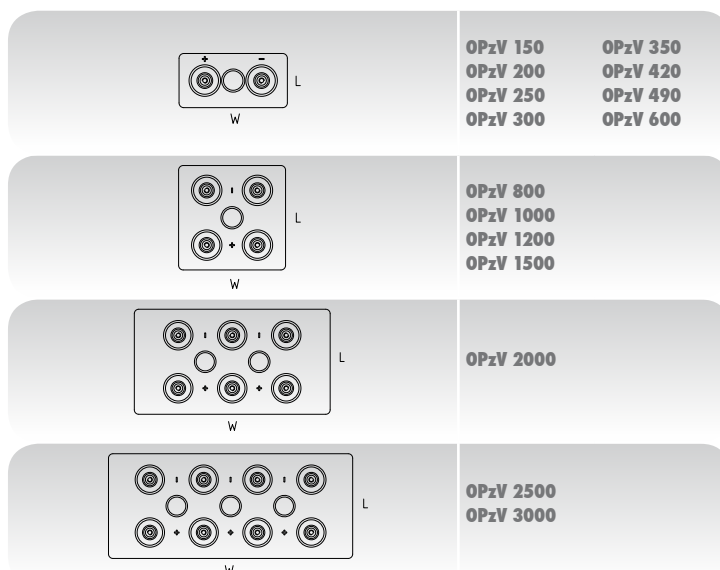
- ✓ 18 years Design Life
- ✓ Up to 1500 deep discharge cycles
- ✓ 99%+ gas recombination efficiency
- ✓ Maximum charging efficiency
- ✓ Improved safety against accidental contacts
- ✓ Easy installation: vertical or horizontal

## MAIN APPLICATIONS

- ✓ Power plants
- ✓ Substations
- ✓ Energy storage
- ✓ Wind and Solar power generation
- ✓ Telecommunications
- ✓ Emergency power
- ✓ Railways

## STANDARD REF.

- ✓ EUROBAT GUIDE
- ✓ EN 60896-21
- ✓ EN 60896-22
- ✓ DIN43539-T5
- ✓ EN 61427
- ✓ EN 50272-2



Type	Nominal Voltage V	Actual Capacity		Ri mOhm	Isc kA	Dimensions (mm)			Weight Kg	No. of Terminals
		Ah/10Hrs	Ah/120Hrs			Length	Width	Overall Height		
OPzV 150	2	150	197	0,80	0,95	103	206	385	15,0	2
OPzV 200	2	200	262	0,75	1,30	103	206	385	18,0	2
OPzV 250	2	250	328	0,70	1,60	124	206	385	22,0	2
OPzV 300	2	300	392	0,60	1,95	145	206	385	25,5	2
OPzV 350	2	350	458	0,58	2,30	124	206	504	28,0	2
OPzV 420	2	420	550	0,55	2,65	145	206	504	33,5	2
OPzV 490	2	490	641	0,50	3,10	166	206	504	37,5	2
OPzV 600	2	600	785	0,45	3,80	145	206	679	46,5	2
OPzV 800	2	800	1046	0,40	4,80	210	192	679	62,0	4
OPzV 1000	2	1000	1308	0,35	6,00	210	233	679	77,5	4
OPzV 1200	2	1200	1572	0,30	7,30	210	275	679	91,5	4
OPzV 1500	2	1500	1920	0,24	8,50	210	340	677	112,5	4
OPzV 2000	2	2000	2628	0,22	10,00	212	399	804	153,0	6
OPzV 2500	2	2500	3240	0,17	12,50	212	487	804	194,0	8
OPzV 3000	2	3000	3936	0,12	14,00	212	576	804	230,0	8

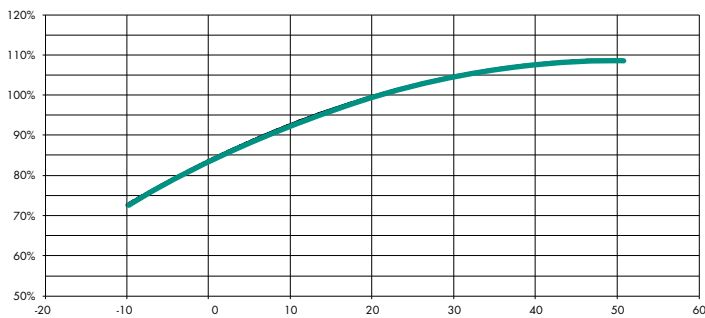
**SPECIFICATION**

√ Positive plates	Tubular plate with lead-tin-calcium grid alloy
√ Negative plates	Flat pasted plate with lead-calcium grid alloy (radial design)
√ Separators	Microporous PVC-SiO <sub>2</sub> separators
√ Cell container	High-strength opaque ABS (option: available in Flame Retardant UL94 V0 version)
√ Cell lid	High-strength opaque ABS (option: available in Flame Retardant UL94 V0 version)
√ Electrolyte	GEL: SiO <sub>2</sub> gelled sulfuric acid
√ Terminal posts	Robust design with M10 threaded insert
√ Posts sealing	Double sealing on HQ post finishing
√ Valve	One way valve with integrated flame arrestor
√ Plate suspension	Bottom supported
√ Inter-cell connectors	Fully insulated copper
√ Terminal hardware	Fully insulated steel
√ Terminal adaptor	Solid lead plated copper plates

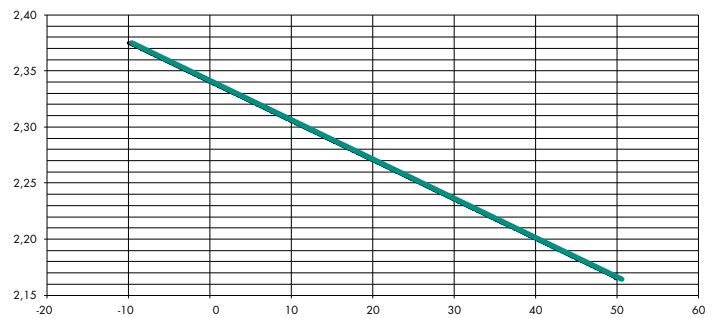
**OPERATION PARAMETERS**

√ Float Charge Voltage	2.23 to 2.27 Vpc
√ Max Float Current (A)	0.20 C10
√ Boost Voltage (Vpc)	2.33 to 2.37 Vpc
√ Max Boost Current (A)	0.15 C10
√ Operating Temperature	-10°C to +60°C
√ Self Discharge	< 3% /month at 20°C
√ Torque setting	18 to 22 Nm (bolts on connections)

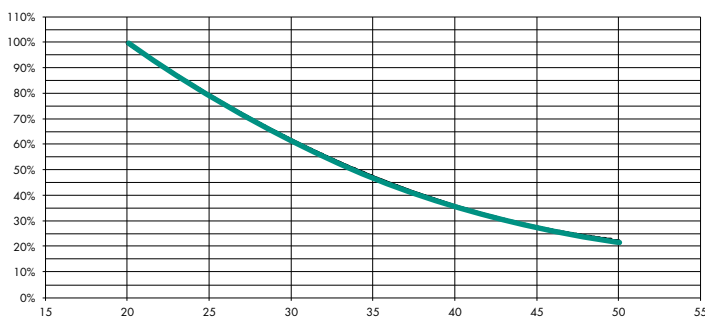
**PERFORMANCE** Capacity vs Temperature (°C)



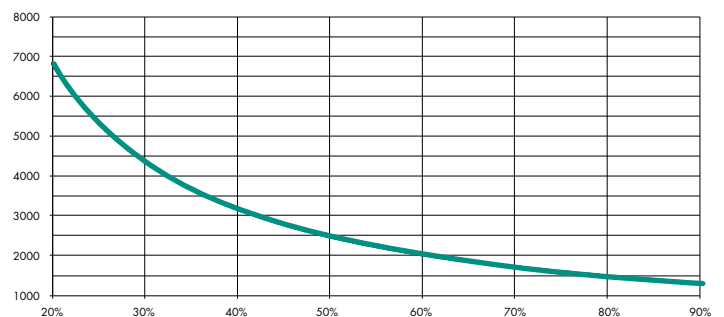
**TEMPERATURE COMPENSATION** Float Voltage vs Temperature (°C)



**THERMAL DEGRADATION** Lifetime vs Temperature (°C)



**LIFECYCLES** No. of Cycles vs D.o.D. (% C10)



## DISCHARGE CURRENT (A) to 1.65 Vpc at 20°C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	227,0	<b>203,0</b>	177,0	154,0	131,0	<b>86,0</b>	56,7	44,2	30,4	24,5	19,9	<b>17,5</b>	9,00	7,40	3,90	<b>1,94</b>	1,64	<b>0,84</b>
OPzV 200	302,0	<b>270,0</b>	236,0	205,0	174,0	<b>115,0</b>	75,6	58,9	40,5	32,7	26,5	<b>23,3</b>	12,00	9,87	5,20	<b>2,58</b>	2,18	<b>1,12</b>
OPzV 250	378,0	<b>338,0</b>	295,0	256,0	218,0	<b>144,0</b>	94,5	73,6	50,6	40,8	33,1	<b>29,1</b>	15,00	12,30	6,50	<b>3,23</b>	2,73	<b>1,40</b>
OPzV 300	453,0	<b>405,0</b>	354,0	308,0	261,0	<b>173,0</b>	113,0	88,3	60,8	49,0	39,8	<b>34,9</b>	18,00	14,80	7,80	<b>3,87</b>	3,27	<b>1,68</b>
OPzV 350	529,0	<b>473,0</b>	413,0	359,0	305,0	<b>201,0</b>	132,0	103,0	70,9	57,1	46,4	<b>40,8</b>	21,10	17,30	9,10	<b>4,52</b>	3,82	<b>1,96</b>
OPzV 420	634,0	<b>567,0</b>	496,0	431,0	365,0	<b>242,0</b>	159,0	124,0	85,1	68,6	55,7	<b>48,9</b>	25,30	20,70	10,90	<b>5,42</b>	4,58	<b>2,35</b>
OPzV 490	740,0	<b>662,0</b>	578,0	502,0	426,0	<b>282,0</b>	185,0	144,0	99,2	80,0	64,9	<b>57,1</b>	29,50	24,20	12,70	<b>6,32</b>	5,34	<b>2,74</b>
OPzV 600	906,0	<b>810,0</b>	708,0	615,0	522,0	<b>345,0</b>	227,0	177,0	122,0	98,0	79,5	<b>69,9</b>	36,10	29,60	15,60	<b>7,74</b>	6,54	<b>3,36</b>
OPzV 800	1208,0	<b>1080,0</b>	944,0	820,0	696,0	<b>460,0</b>	302,0	235,0	162,0	131,0	106,0	<b>93,2</b>	48,10	39,50	20,80	<b>10,30</b>	8,72	<b>4,48</b>
OPzV 1000	1510,0	<b>1350,0</b>	1180,0	1025,0	870,0	<b>575,0</b>	378,0	294,0	203,0	163,0	133,0	<b>116,0</b>	60,20	49,40	26,00	<b>12,90</b>	10,90	<b>5,60</b>
OPzV 1200	1812,0	<b>1620,0</b>	1416,0	1230,0	1044,0	<b>690,0</b>	454,0	353,0	243,0	196,0	159,0	<b>140,0</b>	72,20	59,20	31,20	<b>15,50</b>	13,10	<b>6,72</b>
OPzV 1500	1925,0	<b>1721,0</b>	1505,0	1307,0	1109,0	<b>863,0</b>	568,0	442,0	304,0	245,0	199,0	<b>175,0</b>	91,00	74,00	39,00	<b>19,00</b>	16,00	<b>8,00</b>
OPzV 2000	2567,0	<b>2295,0</b>	2006,0	1743,0	1479,0	<b>1150,0</b>	757,0	589,0	405,0	327,0	265,0	<b>233,0</b>	121,00	99,00	52,00	<b>25,90</b>	21,90	<b>11,20</b>
OPzV 2500	3205,0	<b>2860,0</b>	2508,0	2179,0	1849,0	<b>1438,0</b>	946,0	736,0	506,0	409,0	331,0	<b>291,0</b>	151,00	124,00	65,00	<b>32,00</b>	27,00	<b>14,00</b>
OPzV 3000	3851,0	<b>3443,0</b>	3009,0	2614,0	2219,0	<b>1725,0</b>	1135,0	883,0	608,0	490,0	398,0	<b>350,0</b>	181,00	148,00	78,00	<b>38,80</b>	32,80	<b>16,80</b>

## DISCHARGE CURRENT (A) to 1.70 Vpc at 20°C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	212,0	<b>190,0</b>	164,0	143,0	127,0	<b>83,0</b>	53,3	41,9	28,8	23,3	19,1	<b>16,6</b>	9,00	7,40	3,90	<b>1,94</b>	1,64	<b>0,84</b>
OPzV 200	283,0	<b>253,0</b>	219,0	190,0	169,0	<b>110,0</b>	71,0	55,8	38,4	31,1	25,5	<b>22,1</b>	12,00	9,87	5,20	<b>2,58</b>	2,18	<b>1,12</b>
OPzV 250	354,0	<b>316,0</b>	274,0	238,0	211,0	<b>138,0</b>	88,8	69,7	48,0	38,9	31,8	<b>27,6</b>	15,00	12,30	6,50	<b>3,23</b>	2,73	<b>1,40</b>
OPzV 300	425,0	<b>380,0</b>	329,0	285,0	254,0	<b>165,0</b>	107,0	83,6	57,5	46,6	38,2	<b>33,1</b>	18,00	14,80	7,80	<b>3,87</b>	3,27	<b>1,68</b>
OPzV 350	495,0	<b>443,0</b>	383,0	333,0	296,0	<b>193,0</b>	124,0	97,6	67,1	54,4	44,6	<b>38,6</b>	21,10	17,30	9,10	<b>4,52</b>	3,82	<b>1,96</b>
OPzV 420	594,0	<b>531,0</b>	460,0	399,0	355,0	<b>231,0</b>	149,0	117,0	80,6	65,3	53,5	<b>46,3</b>	25,30	20,70	10,90	<b>5,42</b>	4,58	<b>2,35</b>
OPzV 490	693,0	<b>620,0</b>	537,0	466,0	414,0	<b>270,0</b>	174,0	137,0	94,0	76,2	62,4	<b>54,0</b>	29,50	24,20	12,70	<b>6,32</b>	5,34	<b>2,74</b>
OPzV 600	849,0	<b>759,0</b>	657,0	570,0	507,0	<b>330,0</b>	213,0	167,0	115,0	93,3	76,4	<b>66,2</b>	36,10	29,60	15,60	<b>7,74</b>	6,54	<b>3,36</b>
OPzV 800	1132,0	<b>1012,0</b>	876,0	760,0	676,0	<b>440,0</b>	284,0	223,0	153,0	124,0	102,0	<b>88,2</b>	48,10	39,50	20,80	<b>10,30</b>	8,72	<b>4,48</b>
OPzV 1000	1415,0	<b>1265,0</b>	1095,0	950,0	845,0	<b>550,0</b>	355,0	279,0	192,0	155,0	127,0	<b>110,0</b>	60,20	49,40	26,00	<b>12,90</b>	10,90	<b>5,60</b>
OPzV 1200	1698,0	<b>1518,0</b>	1314,0	1140,0	1014,0	<b>660,0</b>	426,0	335,0	230,0	187,0	153,0	<b>132,0</b>	72,20	59,20	31,20	<b>15,50</b>	13,10	<b>6,72</b>
OPzV 1500	1804,0	<b>1613,0</b>	1396,0	1211,0	1078,0	<b>825,0</b>	533,0	419,0	287,0	234,0	191,0	<b>165,0</b>	91,00	74,00	39,00	<b>19,00</b>	16,00	<b>8,00</b>
OPzV 2000	2405,0	<b>2151,0</b>	1861,0	1615,0	1437,0	<b>1100,0</b>	710,0	559,0	383,0	312,0	255,0	<b>220,0</b>	121,00	99,00	52,00	<b>25,90</b>	21,90	<b>11,20</b>
OPzV 2500	3006,0	<b>2689,0</b>	2326,0	2019,0	1796,0	<b>1375,0</b>	888,0	699,0	479,0	390,0	319,0	<b>275,0</b>	151,00	124,00	65,00	<b>32,00</b>	27,00	<b>14,00</b>
OPzV 3000	3608,0	<b>3226,0</b>	2792,0	2423,0	2155,0	<b>1650,0</b>	1065,0	838,0	575,0	468,0	383,0	<b>330,0</b>	181,00	148,00	78,00	<b>38,80</b>	32,80	<b>16,80</b>

## DISCHARGE CURRENT (A) to 1.75 Vpc at 20°C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	203,0	<b>182,0</b>	161,0	138,0	120,0	<b>79,0</b>	50,4	39,6	27,2	22,2	18,4	<b>15,8</b>	8,55	7,40	3,90	<b>1,94</b>	1,64	<b>0,84</b>
OPzV 200	270,0	<b>242,0</b>	214,0	184,0	160,0	<b>105,0</b>	67,2	52,8	36,3	29,6	24,5	<b>21,0</b>	11,40	9,87	5,20	<b>2,58</b>	2,18	<b>1,12</b>
OPzV 250	338,0	<b>303,0</b>	268,0	230,0	200,0	<b>131,0</b>	84,0	66,0	45,4	37,0	30,6	<b>26,3</b>	14,30	12,30	6,50	<b>3,23</b>	2,73	<b>1,40</b>
OPzV 300	405,0	<b>363,0</b>	321,0	276,0	240,0	<b>158,0</b>	101,0	79,2	54,5	44,4	36,7	<b>31,5</b>	17,10	14,80	7,80	<b>3,87</b>	3,27	<b>1,68</b>
OPzV 350	473,0	<b>424,0</b>	375,0	322,0	280,0	<b>184,0</b>	118,0	92,4	63,6	51,8	42,8	<b>36,8</b>	20,00	17,30	9,10	<b>4,52</b>	3,82	<b>1,96</b>
OPzV 420	567,0	<b>508,0</b>	449,0	386,0	336,0	<b>221,0</b>	141,0	111,0	76,3	62,2	51,4	<b>44,1</b>	23,90	20,70	10,90	<b>5,42</b>	4,58	<b>2,35</b>
OPzV 490	662,0	<b>593,0</b>	524,0	451,0	392,0	<b>257,0</b>	165,0	129,0	89,0	72,5	59,9	<b>51,5</b>	27,90	24,20	12,70	<b>6,32</b>	5,34	<b>2,74</b>
OPzV 600	810,0	<b>726,0</b>	642,0	552,0	480,0	<b>315,0</b>	202,0	158,0	109,0	88,8	73,4	<b>63,0</b>	34,20	29,60	15,60	<b>7,74</b>	6,54	<b>3,36</b>
OPzV 800	1080,0	<b>968,0</b>	856,0	736,0	640,0	<b>420,0</b>	269,0	211,0	145,0	118,0	97,8	<b>84,0</b>	45,60	39,50	20,80	<b>10,30</b>	8,72	<b>4,48</b>
OPzV 1000	1350,0	<b>1210,0</b>	1070,0	920,0	800,0	<b>525,0</b>	336,0	264,0	182,0	148,0	122,0	<b>105,0</b>	57,00	49,40	26,00	<b>12,90</b>	10,90	<b>5,60</b>
OPzV 1200	1620,0	<b>1452,0</b>	1284,0	1104,0	960,0	<b>630,0</b>	403,0	317,0	218,0	178,0	147,0	<b>126,0</b>	68,40	59,20	31,20	<b>15,50</b>	13,10	<b>6,72</b>
OPzV 1500	1721,0	<b>1543,0</b>	1364,0	1173,0	1020,0	<b>788,0</b>	504,0	397,0	272,0	223,0	184,0	<b>158,0</b>	86,00	74,00	39,00	<b>19,00</b>	16,00	<b>8,00</b>
OPzV 2000	2295,0	<b>2057,0</b>	1819,0	1564,0	1360,0	<b>1050,0</b>	672,0	529,0	363,0	297,0	245,0	<b>210,0</b>	114,00	99,00	52,00	<b>25,90</b>	21,90	<b>11,20</b>
OPzV 2500	2869,0	<b>2571,0</b>	2274,0	1955,0	1700,0	<b>1313,0</b>	840,0	661,0	454,0	371,0	306,0	<b>263,0</b>	143,00	124,00	65,00	<b>32,00</b>	27,00	<b>14,00</b>
OPzV 3000	3443,0	<b>3086,0</b>	2729,0	2346,0	2040,0	<b>1575,0</b>	1008,0	793,0	545,0	445,0	368,0	<b>315,0</b>	171,00	148,00	78,00	<b>38,80</b>	32,80	<b>16,80</b>

**DISCHARGE CURRENT (A) to 1.80 Vpc at 20 °C**

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
<b>OPzV 150</b>	191,0	<b>173,0</b>	152,0	128,0	116,0	<b>75,0</b>	47,7	37,5	25,5	21,2	17,6	<b>15,0</b>	8,10	7,40	3,90	<b>1,94</b>	1,64	<b>0,84</b>
<b>OPzV 200</b>	255,0	<b>230,0</b>	203,0	170,0	154,0	<b>100,0</b>	63,6	50,0	34,0	28,2	23,5	<b>20,0</b>	10,80	9,87	5,20	<b>2,58</b>	2,18	<b>1,12</b>
<b>OPzV 250</b>	319,0	<b>288,0</b>	254,0	213,0	180,0	<b>125,0</b>	79,5	62,5	42,5	35,3	29,4	<b>25,0</b>	13,50	12,30	6,50	<b>3,23</b>	2,73	<b>1,40</b>
<b>OPzV 300</b>	383,0	<b>345,0</b>	305,0	255,0	231,0	<b>150,0</b>	95,4	75,0	51,0	42,3	35,3	<b>30,0</b>	16,20	14,80	7,80	<b>3,87</b>	3,27	<b>1,68</b>
<b>OPzV 350</b>	446,0	<b>403,0</b>	355,0	298,0	270,0	<b>175,0</b>	111,0	87,5	59,5	49,4	41,1	<b>35,0</b>	18,90	17,30	9,10	<b>4,52</b>	3,82	<b>1,96</b>
<b>OPzV 420</b>	536,0	<b>483,0</b>	426,0	357,0	323,0	<b>210,0</b>	134,0	105,0	71,4	59,2	49,4	<b>42,0</b>	22,70	20,70	10,90	<b>5,42</b>	4,58	<b>2,35</b>
<b>OPzV 490</b>	625,0	<b>564,0</b>	497,0	417,0	377,0	<b>245,0</b>	156,0	123,0	83,3	69,1	57,6	<b>49,0</b>	26,50	24,20	12,70	<b>6,32</b>	5,34	<b>2,74</b>
<b>OPzV 600</b>	765,0	<b>690,0</b>	609,0	510,0	462,0	<b>300,0</b>	191,0	150,0	102,0	84,6	70,5	<b>60,0</b>	32,40	29,60	15,60	<b>7,74</b>	6,54	<b>3,36</b>
<b>OPzV 800</b>	1020,0	<b>920,0</b>	812,0	680,0	616,0	<b>400,0</b>	254,0	200,0	136,0	113,0	94,0	<b>80,0</b>	43,20	39,50	20,80	<b>10,30</b>	8,72	<b>4,48</b>
<b>OPzV 1000</b>	1275,0	<b>1150,0</b>	1015,0	850,0	770,0	<b>500,0</b>	318,0	250,0	170,0	141,0	118,0	<b>100,0</b>	54,00	49,40	26,00	<b>12,90</b>	10,90	<b>5,60</b>
<b>OPzV 1200</b>	1530,0	<b>1380,0</b>	1218,0	1020,0	924,0	<b>600,0</b>	382,0	300,0	204,0	169,0	141,0	<b>120,0</b>	64,80	59,20	31,20	<b>15,50</b>	13,10	<b>6,72</b>
<b>OPzV 1500</b>	1625,0	<b>1466,0</b>	1294,0	1084,0	982,0	<b>750,0</b>	478,0	375,0	255,0	212,0	176,0	<b>150,0</b>	81,00	74,00	39,00	<b>19,00</b>	16,00	<b>8,00</b>
<b>OPzV 2000</b>	2167,0	<b>1955,0</b>	1725,0	1445,0	1309,0	<b>1000,0</b>	637,0	500,0	340,0	282,0	235,0	<b>200,0</b>	108,00	99,00	52,00	<b>25,90</b>	21,90	<b>11,20</b>
<b>OPzV 2500</b>	2709,0	<b>2444,0</b>	2156,0	1806,0	1636,0	<b>1250,0</b>	796,0	625,0	425,0	353,0	294,0	<b>250,0</b>	135,00	124,00	65,00	<b>32,00</b>	27,00	<b>14,00</b>
<b>OPzV 3000</b>	3251,0	<b>2933,0</b>	2588,0	2168,0	1964,0	<b>1500,0</b>	955,0	750,0	510,0	423,0	353,0	<b>300,0</b>	162,00	148,00	78,00	<b>38,80</b>	32,80	<b>16,80</b>

**DISCHARGE CURRENT (A) to 1.85 Vpc at 20 °C**

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
<b>OPzV 150</b>	180,0	<b>163,0</b>	144,0	120,0	109,0	<b>71,0</b>	45,2	35,5	24,5	20,2	16,7	<b>14,2</b>	7,65	7,05	3,90	<b>1,94</b>	1,64	<b>0,84</b>
<b>OPzV 200</b>	240,0	<b>217,0</b>	192,0	160,0	145,0	<b>95,0</b>	60,2	47,3	32,6	26,9	22,3	<b>18,9</b>	10,20	9,40	5,20	<b>2,58</b>	2,18	<b>1,12</b>
<b>OPzV 250</b>	300,0	<b>271,0</b>	240,0	200,0	165,0	<b>119,0</b>	75,3	59,2	40,8	33,6	27,8	<b>23,6</b>	12,80	11,80	6,50	<b>3,23</b>	2,73	<b>1,40</b>
<b>OPzV 300</b>	360,0	<b>326,0</b>	288,0	240,0	218,0	<b>143,0</b>	90,3	71,0	48,9	40,3	33,4	<b>28,4</b>	15,30	14,10	7,80	<b>3,87</b>	3,27	<b>1,68</b>
<b>OPzV 350</b>	420,0	<b>380,0</b>	336,0	280,0	254,0	<b>166,0</b>	105,0	82,8	57,1	47,0	38,9	<b>33,1</b>	17,90	16,50	9,10	<b>4,52</b>	3,82	<b>1,96</b>
<b>OPzV 420</b>	504,0	<b>456,0</b>	403,0	336,0	305,0	<b>200,0</b>	126,0	99,4	68,5	56,4	46,7	<b>39,7</b>	21,40	19,70	10,90	<b>5,42</b>	4,58	<b>2,35</b>
<b>OPzV 490</b>	588,0	<b>532,0</b>	470,0	392,0	355,0	<b>233,0</b>	148,0	116,0	79,9	65,8	54,5	<b>46,3</b>	25,00	23,00	12,70	<b>6,32</b>	5,34	<b>2,74</b>
<b>OPzV 600</b>	720,0	<b>651,0</b>	576,0	480,0	435,0	<b>285,0</b>	181,0	142,0	97,8	80,6	66,8	<b>56,7</b>	30,60	28,20	15,60	<b>7,74</b>	6,54	<b>3,36</b>
<b>OPzV 800</b>	960,0	<b>868,0</b>	768,0	640,0	580,0	<b>380,0</b>	241,0	189,0	130,0	107,0	89,0	<b>75,6</b>	40,80	37,60	20,80	<b>10,30</b>	8,72	<b>4,48</b>
<b>OPzV 1000</b>	1200,0	<b>1085,0</b>	960,0	800,0	725,0	<b>475,0</b>	301,0	237,0	163,0	134,0	111,0	<b>94,5</b>	51,00	47,00	26,00	<b>12,90</b>	10,90	<b>5,60</b>
<b>OPzV 1200</b>	1440,0	<b>1302,0</b>	1152,0	960,0	870,0	<b>570,0</b>	361,0	284,0	196,0	161,0	134,0	<b>113,0</b>	61,20	56,40	31,20	<b>15,50</b>	13,10	<b>6,72</b>
<b>OPzV 1500</b>	1530,0	<b>1384,0</b>	1224,0	1020,0	925,0	<b>713,0</b>	452,0	355,0	245,0	202,0	167,0	<b>142,0</b>	77,00	71,00	39,00	<b>19,00</b>	16,00	<b>8,00</b>
<b>OPzV 2000</b>	2040,0	<b>1845,0</b>	1632,0	1360,0	1233,0	<b>950,0</b>	602,0	473,0	327,0	269,0	223,0	<b>189,0</b>	102,00	94,00	52,00	<b>25,90</b>	21,90	<b>11,20</b>
<b>OPzV 2500</b>	2550,0	<b>2306,0</b>	2040,0	1700,0	1541,0	<b>1188,0</b>	753,0	591,0	409,0	336,0	279,0	<b>236,0</b>	128,00	118,00	65,00	<b>32,00</b>	27,00	<b>14,00</b>
<b>OPzV 3000</b>	3060,0	<b>2767,0</b>	2448,0	2040,0	1849,0	<b>1425,0</b>	903,0	710,0	490,0	403,0	335,0	<b>283,0</b>	153,00	141,00	78,00	<b>38,80</b>	32,80	<b>16,80</b>

## DISCHARGE POWER (W) to 1.65 Vpc at 20 °C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	428,0	<b>383,0</b>	371,0	323,0	274,0	<b>176,0</b>	127,0	89,0	57,2	54,8	45,2	<b>33,8</b>	16,90	15,00	10,10	<b>5,20</b>	4,54	<b>2,42</b>
OPzV 200	570,0	<b>510,0</b>	495,0	430,0	365,0	<b>235,0</b>	169,0	118,0	76,2	73,0	60,2	<b>45,1</b>	22,50	20,00	13,40	<b>6,90</b>	6,05	<b>3,22</b>
OPzV 250	713,0	<b>637,0</b>	619,0	538,0	456,0	<b>294,0</b>	211,0	148,0	95,3	91,3	75,3	<b>56,4</b>	28,10	25,00	16,80	<b>8,63</b>	7,56	<b>4,03</b>
OPzV 300	855,0	<b>765,0</b>	743,0	645,0	548,0	<b>353,0</b>	253,0	177,0	114,0	110,0	90,3	<b>67,7</b>	33,80	30,00	20,10	<b>10,40</b>	9,08	<b>4,83</b>
OPzV 350	998,0	<b>892,0</b>	866,0	753,0	639,0	<b>411,0</b>	295,0	207,0	133,0	128,0	105,0	<b>78,9</b>	39,40	35,00	23,50	<b>12,10</b>	10,60	<b>5,64</b>
OPzV 420	1197,0	<b>1070,0</b>	1040,0	903,0	767,0	<b>494,0</b>	354,0	248,0	160,0	153,0	126,0	<b>94,7</b>	47,30	42,00	28,10	<b>14,50</b>	12,70	<b>6,76</b>
OPzV 490	1397,0	<b>1249,0</b>	1213,0	1054,0	894,0	<b>576,0</b>	413,0	289,0	187,0	179,0	147,0	<b>110,0</b>	55,10	49,00	32,80	<b>16,90</b>	14,80	<b>7,89</b>
OPzV 600	1711,0	<b>1529,0</b>	1485,0	1290,0	1095,0	<b>705,0</b>	506,0	354,0	229,0	219,0	181,0	<b>135,0</b>	67,50	60,00	40,20	<b>20,70</b>	18,20	<b>9,66</b>
OPzV 800	2281,0	<b>2039,0</b>	1980,0	1720,0	1460,0	<b>940,0</b>	674,0	472,0	305,0	292,0	241,0	<b>180,0</b>	90,00	80,00	53,60	<b>27,60</b>	24,20	<b>12,90</b>
OPzV 1000	2851,0	<b>2549,0</b>	2476,0	2150,0	1825,0	<b>1175,0</b>	843,0	590,0	381,0	365,0	301,0	<b>226,0</b>	113,00	100,00	67,00	<b>34,50</b>	30,30	<b>16,10</b>
OPzV 1200	3421,0	<b>3058,0</b>	2971,0	2580,0	2190,0	<b>1410,0</b>	1011,0	708,0	457,0	438,0	361,0	<b>271,0</b>	135,00	120,00	80,40	<b>41,40</b>	36,30	<b>19,30</b>
OPzV 1500	3849,0	<b>3440,0</b>	3343,0	2903,0	2464,0	<b>1763,0</b>	1264,0	885,0	572,0	548,0	452,0	<b>339,0</b>	169,00	150,00	101,00	<b>52,00</b>	45,00	<b>24,00</b>
OPzV 2000	5132,0	<b>4587,0</b>	4457,0	3870,0	3285,0	<b>2350,0</b>	1685,0	1180,0	762,0	730,0	602,0	<b>452,0</b>	225,00	200,00	134,00	<b>69,00</b>	60,50	<b>32,20</b>
OPzV 2500	6415,0	<b>5734,0</b>	5571,0	4838,0	4106,0	<b>2938,0</b>	2106,0	1475,0	953,0	913,0	753,0	<b>565,0</b>	281,00	250,00	168,00	<b>86,00</b>	76,00	<b>40,00</b>
OPzV 3000	7698,0	<b>6881,0</b>	6685,0	5805,0	4928,0	<b>3525,0</b>	2528,0	1770,0	1143,0	1095,0	902,5	<b>677,5</b>	337,50	300,00	201,00	<b>103,50</b>	90,80	<b>48,30</b>

## DISCHARGE POWER (W) to 1.70 Vpc at 20 °C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	388,0	<b>347,0</b>	334,0	290,0	257,0	<b>171,0</b>	124,0	86,0	56,3	53,0	43,5	<b>32,7</b>	16,90	15,00	10,10	<b>5,20</b>	4,54	<b>2,42</b>
OPzV 200	517,0	<b>462,0</b>	445,0	386,0	343,0	<b>228,0</b>	165,0	114,0	75,1	70,7	58,0	<b>43,6</b>	22,50	20,00	13,40	<b>6,90</b>	6,05	<b>3,22</b>
OPzV 250	646,0	<b>578,0</b>	556,0	482,0	429,0	<b>285,0</b>	206,0	143,0	93,9	88,4	72,5	<b>54,5</b>	28,10	25,00	16,80	<b>8,63</b>	7,56	<b>4,03</b>
OPzV 300	775,0	<b>693,0</b>	667,0	578,0	515,0	<b>342,0</b>	248,0	171,0	113,0	106,0	87,0	<b>65,4</b>	33,80	30,00	20,10	<b>10,40</b>	9,08	<b>4,83</b>
OPzV 350	905,0	<b>809,0</b>	778,0	675,0	600,0	<b>399,0</b>	289,0	200,0	131,0	124,0	102,0	<b>76,3</b>	39,40	35,00	23,50	<b>12,10</b>	10,60	<b>5,64</b>
OPzV 420	1085,0	<b>970,0</b>	933,0	810,0	720,0	<b>479,0</b>	347,0	239,0	158,0	148,0	122,0	<b>91,6</b>	47,30	42,00	28,10	<b>14,50</b>	12,70	<b>6,76</b>
OPzV 490	1266,0	<b>1132,0</b>	1089,0	945,0	840,0	<b>559,0</b>	404,0	279,0	184,0	173,0	142,0	<b>107,0</b>	55,10	49,00	32,80	<b>16,90</b>	14,80	<b>7,89</b>
OPzV 600	1551,0	<b>1386,0</b>	1334,0	1157,0	1029,0	<b>684,0</b>	495,0	342,0	225,0	212,0	174,0	<b>131,0</b>	67,50	60,00	40,20	<b>20,70</b>	18,20	<b>9,66</b>
OPzV 800	2068,0	<b>1848,0</b>	1778,0	1542,0	1372,0	<b>912,0</b>	660,0	456,0	300,0	283,0	232,0	<b>174,0</b>	90,00	80,00	53,60	<b>27,60</b>	24,20	<b>12,90</b>
OPzV 1000	2585,0	<b>2311,0</b>	2223,0	1928,0	1715,0	<b>1140,0</b>	825,0	570,0	376,0	354,0	290,0	<b>218,0</b>	113,00	100,00	67,00	<b>34,50</b>	30,30	<b>16,10</b>
OPzV 1200	3101,0	<b>2773,0</b>	2667,0	2313,6	2058,0	<b>1368,0</b>	990,0	684,0	451,0	424,0	348,0	<b>262,0</b>	135,00	120,00	80,40	<b>41,40</b>	36,30	<b>19,30</b>
OPzV 1500	3468,0	<b>3119,0</b>	3001,0	2603,0	2315,0	<b>1710,0</b>	1238,0	855,0	564,0	530,0	435,0	<b>328,0</b>	169,00	150,00	101,00	<b>52,00</b>	45,00	<b>24,00</b>
OPzV 2000	4624,0	<b>4159,0</b>	4001,0	3471,0	3087,0	<b>2280,0</b>	1650,0	1140,0	752,0	707,0	580,0	<b>437,0</b>	225,00	200,00	134,00	<b>69,00</b>	60,50	<b>32,20</b>
OPzV 2500	5780,0	<b>5199,0</b>	5001,0	4339,0	3859,0	<b>2850,0</b>	2063,0	1425,0	940,0	884,0	725,0	<b>546,0</b>	281,00	250,00	168,00	<b>86,00</b>	76,00	<b>40,00</b>
OPzV 3000	6936,0	<b>6239,0</b>	6001,0	5206,0	4631,0	<b>3420,0</b>	2475,0	1710,0	1128,0	1060,0	870,0	<b>655,0</b>	337,50	300,00	201,00	<b>103,50</b>	90,80	<b>48,30</b>

## DISCHARGE POWER (W) to 1.75 Vpc at 20 °C

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
OPzV 150	357,0	<b>320,0</b>	314,0	271,0	236,0	<b>167,0</b>	121,0	83,0	55,6	51,4	42,1	<b>31,5</b>	16,90	15,00	10,10	<b>5,20</b>	4,54	<b>2,42</b>
OPzV 200	476,0	<b>427,0</b>	419,0	361,0	314,0	<b>222,0</b>	161,0	110,0	74,1	68,5	56,1	<b>42,0</b>	22,50	20,00	13,40	<b>6,90</b>	6,05	<b>3,22</b>
OPzV 250	595,0	<b>534,0</b>	524,0	451,0	392,0	<b>278,0</b>	201,0	138,0	92,6	85,6	70,1	<b>52,5</b>	28,10	25,00	16,80	<b>8,63</b>	7,56	<b>4,03</b>
OPzV 300	714,0	<b>640,0</b>	629,0	541,0	470,0	<b>333,0</b>	241,0	165,0	111,0	103,0	84,2	<b>63,0</b>	33,80	30,00	20,10	<b>10,40</b>	9,08	<b>4,83</b>
OPzV 350	833,0	<b>747,0</b>	734,0	631,0	549,0	<b>389,0</b>	281,0	193,0	130,0	120,0	98,2	<b>73,5</b>	39,40	35,00	23,50	<b>12,10</b>	10,60	<b>5,64</b>
OPzV 420	1000,0	<b>896,0</b>	881,0	757,0	658,0	<b>466,0</b>	337,0	232,0	156,0	144,0	118,0	<b>88,2</b>	47,30	42,00	28,10	<b>14,50</b>	12,70	<b>6,76</b>
OPzV 490	1166,0	<b>1046,0</b>	1027,0	883,0	768,0	<b>544,0</b>	393,0	270,0	182,0	168,0	137,0	<b>103,0</b>	55,10	49,00	32,80	<b>16,90</b>	14,80	<b>7,89</b>
OPzV 600	1428,0	<b>1280,0</b>	1258,0	1082,0	941,0	<b>666,0</b>	482,0	331,0	222,0	206,0	168,0	<b>126,0</b>	67,50	60,00	40,20	<b>20,70</b>	18,20	<b>9,66</b>
OPzV 800	1904,0	<b>1707,0</b>	1677,0	1442,0	1254,0	<b>888,0</b>	642,0	441,0	296,0	274,0	224,0	<b>168,0</b>	90,00	80,00	53,60	<b>27,60</b>	24,20	<b>12,90</b>
OPzV 1000	2381,0	<b>2134,0</b>	2097,0	1803,0	1568,0	<b>1110,0</b>	803,0	551,0	371,0	343,0	281,0	<b>210,0</b>	113,00	100,00	67,00	<b>34,50</b>	30,30	<b>16,10</b>
OPzV 1200	2857,0	<b>2561,0</b>	2516,0	2163,0	1881,0	<b>1332,0</b>	963,0	662,0	445,0	411,0	337,0	<b>252,0</b>	135,00	120,00	80,40	<b>41,40</b>	36,30	<b>19,30</b>
OPzV 1500	3121,0	<b>2881,0</b>	2831,0	2434,0	2116,0	<b>1665,0</b>	1204,0	827,0	557,0	514,0	422,0	<b>315,0</b>	169,00	150,00	101,00	<b>52,00</b>	45,00	<b>24,00</b>
OPzV 2000	4161,0	<b>3841,0</b>	3774,0	3245,0	2821,0	<b>2220,0</b>	1605,0	1103,0	742,0	685,0	562,0	<b>420,0</b>	225,00	200,00	134,00	<b>69,00</b>	60,50	<b>32,20</b>
OPzV 2500	5201,0	<b>4801,0</b>	4718,0	4056,0	3526,0	<b>2775,0</b>	2006,0	1379,0	928,0	856,0	703,0	<b>525,0</b>	281,00	250,00	168,00	<b>86,00</b>	76,00	<b>40,00</b>
OPzV 3000	6242,0	<b>5762,0</b>	5661,0	4867,0	4232,0	<b>3330,0</b>	2408,0	1655,0	1113,0	1028,0	842,5	<b>630,0</b>	337,50	300,00	201,00	<b>103,50</b>	90,80	<b>48,30</b>

**DISCHARGE POWER (W) to 1.80 Vpc at 20°C**

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
<b>OPzV 150</b>	312,0	<b>281,0</b>	276,0	231,0	209,0	<b>156,0</b>	118,0	80,0	54,0	49,5	40,5	<b>30,8</b>	16,50	15,00	10,10	<b>5,20</b>	4,54	<b>2,42</b>
<b>OPzV 200</b>	416,0	<b>375,0</b>	368,0	308,0	279,0	<b>208,0</b>	157,0	106,0	72,0	66,0	54,0	<b>41,0</b>	22,00	20,00	13,40	<b>6,90</b>	6,05	<b>3,22</b>
<b>OPzV 250</b>	520,0	<b>469,0</b>	460,0	385,0	349,0	<b>260,0</b>	196,0	133,0	90,0	82,5	67,5	<b>51,3</b>	27,50	25,00	16,80	<b>8,63</b>	7,56	<b>4,03</b>
<b>OPzV 300</b>	624,0	<b>563,0</b>	552,0	462,0	419,0	<b>312,0</b>	236,0	159,0	108,0	99,0	81,0	<b>61,5</b>	33,00	30,00	20,10	<b>10,40</b>	9,08	<b>4,83</b>
<b>OPzV 350</b>	728,0	<b>656,0</b>	644,0	539,0	488,0	<b>364,0</b>	275,0	186,0	126,0	116,0	94,5	<b>71,8</b>	38,50	35,00	23,50	<b>12,10</b>	10,60	<b>5,64</b>
<b>OPzV 420</b>	873,0	<b>788,0</b>	772,0	647,0	586,0	<b>437,0</b>	330,0	223,0	151,0	139,0	113,0	<b>86,1</b>	46,20	42,00	28,10	<b>14,50</b>	12,70	<b>6,76</b>
<b>OPzV 490</b>	1019,0	<b>919,0</b>	901,0	755,0	684,0	<b>510,0</b>	385,0	260,0	176,0	162,0	132,0	<b>100,0</b>	53,90	49,00	32,80	<b>16,90</b>	14,80	<b>7,89</b>
<b>OPzV 600</b>	1247,0	<b>1125,0</b>	1103,0	924,0	837,0	<b>624,0</b>	471,0	318,0	216,0	198,0	162,0	<b>123,0</b>	66,00	60,00	40,20	<b>20,70</b>	18,20	<b>9,66</b>
<b>OPzV 800</b>	1663,0	<b>1500,0</b>	1471,0	1232,0	1116,0	<b>832,0</b>	628,0	424,0	288,0	264,0	216,0	<b>164,0</b>	88,00	80,00	53,60	<b>27,60</b>	24,20	<b>12,90</b>
<b>OPzV 1000</b>	2079,0	<b>1875,0</b>	1839,0	1540,0	1395,0	<b>1040,0</b>	785,0	530,0	360,0	330,0	270,0	<b>205,0</b>	110,00	100,00	67,00	<b>34,50</b>	30,30	<b>16,10</b>
<b>OPzV 1200</b>	2495,0	<b>2250,0</b>	2207,0	1848,0	1674,0	<b>1248,0</b>	942,0	636,0	432,0	396,0	324,0	<b>246,0</b>	132,00	120,00	80,40	<b>41,40</b>	36,30	<b>19,30</b>
<b>OPzV 1500</b>	2719,0	<b>2531,0</b>	2483,0	2079,0	1883,0	<b>1560,0</b>	1178,0	795,0	540,0	495,0	405,0	<b>308,0</b>	165,00	150,00	101,00	<b>52,00</b>	45,00	<b>24,00</b>
<b>OPzV 2000</b>	3625,0	<b>3375,0</b>	3311,0	2772,0	2511,0	<b>2080,0</b>	1570,0	1060,0	720,0	660,0	540,0	<b>410,0</b>	220,00	200,00	134,00	<b>69,00</b>	60,50	<b>32,20</b>
<b>OPzV 2500</b>	4531,0	<b>4219,0</b>	4139,0	3465,0	3139,0	<b>2600,0</b>	1963,0	1325,0	900,0	825,0	675,0	<b>513,0</b>	275,00	250,00	168,00	<b>86,00</b>	76,00	<b>40,00</b>
<b>OPzV 3000</b>	5438,0	<b>5063,0</b>	4966,0	4158,0	3767,0	<b>3120,0</b>	2355,0	1590,0	1080,0	990,0	810,0	<b>615,0</b>	330,00	300,00	201,00	<b>103,50</b>	90,80	<b>48,30</b>

**DISCHARGE POWER (W) to 1.85 Vpc at 20°C**

Type	Minutes					Hours												
	5	10	15	20	30	1	2	3	5	6	8	10	20	24	48	100	120	240
<b>OPzV 150</b>	271,0	<b>245,0</b>	240,0	200,0	182,0	<b>152,0</b>	112,0	76,0	51,6	47,1	38,8	<b>29,0</b>	15,60	14,20	10,10	<b>5,20</b>	4,54	<b>2,42</b>
<b>OPzV 200</b>	361,0	<b>326,0</b>	320,0	267,0	242,0	<b>203,0</b>	149,0	101,0	68,8	62,8	51,7	<b>38,7</b>	20,80	18,90	13,40	<b>6,90</b>	6,05	<b>3,22</b>
<b>OPzV 250</b>	451,0	<b>407,0</b>	401,0	334,0	303,0	<b>254,0</b>	186,0	126,0	86,0	78,5	64,6	<b>48,4</b>	26,00	23,60	16,80	<b>8,63</b>	7,56	<b>4,03</b>
<b>OPzV 300</b>	541,0	<b>489,0</b>	481,0	401,0	363,0	<b>305,0</b>	224,0	151,0	103,0	94,2	77,6	<b>58,1</b>	31,20	28,40	20,10	<b>10,40</b>	9,08	<b>4,83</b>
<b>OPzV 350</b>	631,0	<b>570,0</b>	561,0	467,0	424,0	<b>355,0</b>	261,0	176,0	120,0	110,0	90,5	<b>67,7</b>	36,40	33,10	23,50	<b>12,10</b>	10,60	<b>5,64</b>
<b>OPzV 420</b>	757,0	<b>684,0</b>	673,0	561,0	508,0	<b>426,0</b>	313,0	211,0	144,0	132,0	109,0	<b>81,3</b>	43,70	39,70	28,10	<b>14,50</b>	12,70	<b>6,76</b>
<b>OPzV 490</b>	883,0	<b>798,0</b>	785,0	654,0	593,0	<b>497,0</b>	365,0	246,0	169,0	154,0	127,0	<b>94,8</b>	51,00	46,30	32,80	<b>16,90</b>	14,80	<b>7,89</b>
<b>OPzV 600</b>	1082,0	<b>978,0</b>	961,0	801,0	726,0	<b>609,0</b>	447,0	302,0	206,0	188,0	155,0	<b>116,0</b>	62,40	56,70	40,20	<b>20,70</b>	18,20	<b>9,66</b>
<b>OPzV 800</b>	1442,0	<b>1304,0</b>	1282,0	1068,0	968,0	<b>812,0</b>	596,0	402,0	275,0	251,0	207,0	<b>155,0</b>	83,20	75,60	53,60	<b>27,60</b>	24,20	<b>12,90</b>
<b>OPzV 1000</b>	1803,0	<b>1630,0</b>	1602,0	1335,0	1210,0	<b>1015,0</b>	745,0	503,0	344,0	314,0	259,0	<b>194,0</b>	104,00	94,50	67,00	<b>34,50</b>	30,30	<b>16,10</b>
<b>OPzV 1200</b>	2163,0	<b>1955,0</b>	1922,0	1602,0	1452,0	<b>1218,0</b>	894,0	604,0	413,0	377,0	310,0	<b>232,0</b>	125,00	113,00	80,40	<b>41,40</b>	36,30	<b>19,30</b>
<b>OPzV 1500</b>	2342,0	<b>2200,0</b>	2162,0	1802,0	1634,0	<b>1523,0</b>	1118,0	755,0	517,0	472,0	388,0	<b>290,0</b>	156,00	141,00	101,00	<b>52,00</b>	45,00	<b>24,00</b>
<b>OPzV 2000</b>	3123,0	<b>2933,0</b>	2883,0	2403,0	2178,0	<b>2030,0</b>	1490,0	1007,0	689,0	629,0	517,0	<b>387,0</b>	208,00	188,30	134,00	<b>69,00</b>	60,50	<b>32,20</b>
<b>OPzV 2500</b>	3904,0	<b>3666,0</b>	3604,0	3004,0	2723,0	<b>2538,0</b>	1863,0	1259,0	861,0	786,0	646,0	<b>484,0</b>	260,00	235,00	168,00	<b>86,00</b>	76,00	<b>40,00</b>
<b>OPzV 3000</b>	4685,0	<b>4399,0</b>	4325,0	3605,0	3267,0	<b>3045,0</b>	2235,0	1510,0	1033,0	943,0	775,0	<b>580,0</b>	312,50	282,50	201,00	<b>103,50</b>	90,80	<b>48,30</b>



#### **MIDAC S.p.A.**

VIA A.VOLTA, 2 - Z.I. - 37038 SOAVE (VERONA) - ITALIA  
TEL. +39 045 61 32 1 32 - FAX +39 045 61 32 1 33  
E-mail: midac@midacbatteries.com

#### **MIDAC TECHNOLOGIES S.p.A.**

STRADA DEL FRANCESE, 80 - 10156 TORINO - ITALIA  
TEL. +39 011 4502277 - FAX +39 011 4508950  
E-mail: info@midactechnologies.com

#### **MIDAC DEUTSCHLAND GMBH**

INDUSTRIEGEBIET OBERE SURBACH - HEIDESTRASSE, 5 - 35625 RECHTENBACH - DEUTSCHLAND  
TEL. +49 6441 679260 - FAX +49 6441 6792615  
E-mail: vertrieb@midacbatteries.com

#### **MIDAC FRANCE S.A.R.L.**

Z.I. - ROUTE DE COLMAR BP 9070 68502 GUEBWILLER CEDEX - FRANCE  
TEL. +33 03 89 622380 - FAX +33 03 89 622375  
E-mail: contact@midacbatteries.com

#### **MIDAC NEDERLAND BV**

KEPLERLAAN 10 - 6716BS EDE - NEDERLAND  
TEL. +31 318 678230 - FAX +31 318 678231  
E-mail: verkoop@midacbatteries.com

[www.midacbatteries.com](http://www.midacbatteries.com)



#### **MIDAC SPA HEADQUARTER, SOAVE, VERONA, ITALY**

Unica realtà a produrre batterie avviamento, trazione e stazionarie in un singolo stabilimento produttivo, in vent'anni è diventata una delle aziende leader in Europa con prodotti distribuiti in tutto il mondo.

*The only company that produces Automotive, Motive power and Stationary batteries in the same manufacturing plant, in less than twenty years it has become one of the leading companies in Europe and its products are sold worldwide.*

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