

Datasheet



# 12CP150

Compact-Power Rackline™



# Technical specifications

## Type

# 12CP150

Part number

66300150

### Electrical Data

Nominal voltage	12 V	
Number of cells	6	
Rated capacity C <sub>10</sub> to 1.80 Vpc at 20 °C	150 Ah	
Rated capacity C <sub>8</sub> to 1.75 Vpc at 25 °C	150 Ah	
Current/Power for 0.5 h back-up time 1.65 Vpc 20 °C	185 A	2034 W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	107 A	1200 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	58.2 A	672 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	32.7 A	381 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	18.1 A	210 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	15.0 A	174 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	8.3 A	93 W
Conversion to capacity at 25 °C (77 °F)	20 °C Ah x 1,03 (t > 1 h)	
Internal resistance (± 10%) to IEC/EN 60896-21	3.6 mΩ	
Short circuit current (± 10%) to IEC/EN 60896-21	3.3 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service at 20 °C	≈ 0.90 W	

### Mechanical Data

Weight ready for use	63.8 kg
Height of monobloc	323 mm
Height over gas collection system GCS™	338 mm
Height over terminal connector	351 mm
Width	125 mm
Depth	558 mm
Number of terminals	1⊕/1⊖
Dimension of connector screw hole	M8
Suggested/maximum cable cross-section	50 mm <sup>2</sup> /70 mm <sup>2</sup> *)
Connection torque	8 Nm
Terminal insulation class according to IEC/EN 60529	IP20
Diameter of diagnostic hole for voltage probe	2.5/5 mm Ø
Connector (copper, tin-coated) rigid and insulated	40/80 mm <sup>2</sup>
Complete connector and terminal connection accessoires	available (as 48 V/60 V-Set)

### Environmental Data

Shelves, cabinets and racks	available upon request
Installation	vertically/horizontally
Distance for cooling and ventilation (preset with the rigid connectors)	10 mm
Flame retardancy rating case/cover according to Underwriters Laboratories (UL) USA	ABS-PC – UL 94 V-0 with LOI > 32%, halogen-free
Flame barriers at vents	installed
Gas collection system GCS™ UL V-0 quality	available upon request
UL file number 	MH 26065
Service life expected at 20 °C	15 years

\*) for UPS duties the connecting cables must be dimensioned specially

# Operating specifications

Figure 1



Figure 2

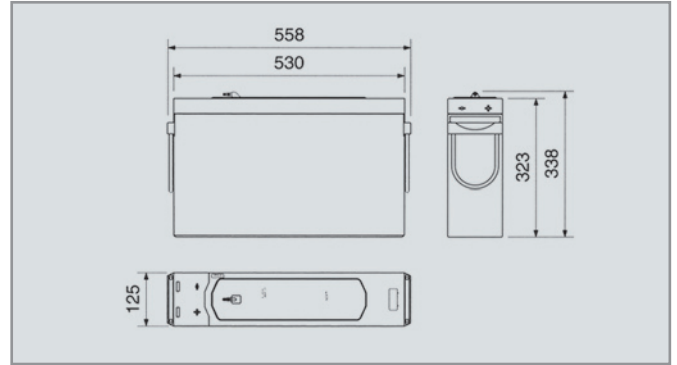
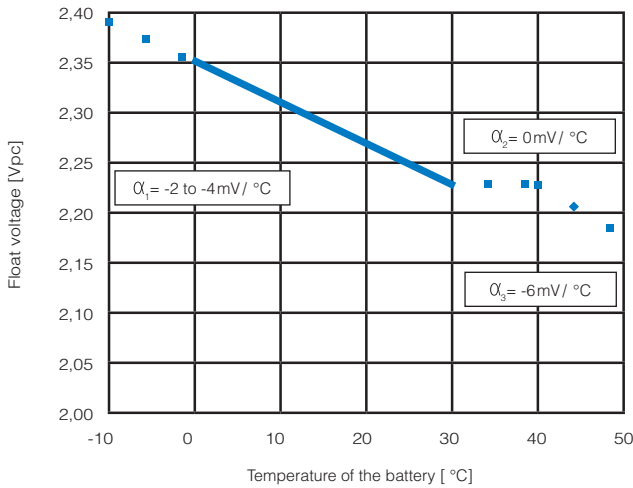


Figure 3



Temperature in °C	Temperature in °F	Percent of the rated capacity
40	104	104.8
35	95	104.2
30	86	103.6
25	77	103.0
20	68	100.0
15	59	97.0
10	50	94.0
5	41	90.0
0	32	84.7
-5	23	77.7
-10	14	69.4
-15	5	60.0
-20	-4	49.6
-25	-13	38.4
-30	-22	25.6
-35	-31	14.1
-40	-40	2.1

**Battery installation and operation**

Float voltage setting according to DIN 41773

Float voltage with daily discharge cycles

CC-CV charge current according to DIN 41773

Float voltage compensation in function of temperature

Boost charge

Stand-by mode with constant voltage float operation according to EN 50272-2:2001

2.25 Vpc at 20 to 25 °C (68 to 77 °F)

2.29 Vpc - 2.30 Vpc (no correction factor needed)

unlimited, otherwise  $3 \cdot I_{10}$  max. if  $T > 25$  °C

-2 to -4 mV/°C or with profile as displayed figure 3

Not needed, if desirable then 2.35 Vpc and  $I_{10}$  max. for 24 h max. at  $t < 30$  °C

**Air exchange**

As a VRLA battery according to EN 50272-2:2001

$Q = 0.05 \cdot N_{\text{cells}} \cdot I_{\text{gas}} \cdot C_{\text{Ah } C_{10}} \cdot 10^{-3} \text{ [m}^3/\text{h]}$

$I_{\text{gas}} = 1$  (at 2.25 Vpc)  $I_{\text{gas}} = 8$  (at 2.40 Vpc)

e.g. 48 V: 0.18 m<sup>3</sup>/h = 6.35 cu.ft/h (at 2.25 Vpc)

Preferred operating temperature range

Between 15 °C (68 °F) and 25 °C (77 °F)

Maximum long term operating temperature

+40 °C (104 °F) with ventilation assured (reduced service life)

Maximum short term operating temperature (for hours)

+50 °C (122 °F) with ventilation assured (reduced service life)

Minimum fully charged operating temperature

-40 °C (-40 °F)



# Discharge data

Constant current performance (in Amps) to the defined end-of-discharge voltages

Voltage [Vpc]	Temp	Discharge time [Minutes]																						
		1 - 2	3	5	7	10	15	20	25	30	40	50	60	90	120	180	240	300	360	480	600	720	1200	1440
1.90	20 °C	314	299	275	253	226	194	170	152	137	116	101	89.2	67.1	54.2	39.5	31.4	26.2	22.5	17.7	14.7	12.6	8.2	7.0
	25 °C	323	308	283	260	233	199	175	156	141	119	104	91.9	69.1	55.8	40.7	32.3	27.0	23.2	18.3	15.1	13.0	8.4	7.2
1.87	20 °C	377	356	322	292	258	216	187	165	148	124	106	93.7	69.6	55.8	40.4	31.9	26.5	22.8	17.9	14.8	12.7	8.2	7.1
	25 °C	388	367	331	301	265	222	192	170	153	127	110	96.5	71.7	57.5	41.6	32.9	27.3	23.5	18.4	15.3	13.1	8.5	7.3
1.85	20 °C	420	394	353	318	277	229	197	173	154	128	110	96.2	71.0	56.7	40.9	32.2	26.7	22.9	18.0	14.9	12.7	8.3	7.1
	25 °C	433	406	363	328	285	236	203	178	159	132	113	99.1	73.1	58.4	42.1	33.2	27.5	23.6	18.5	15.3	13.1	8.5	7.3
1.84	20 °C	443	414	368	330	287	236	201	177	158	130	111	97.2	71.6	57.0	41.1	32.4	26.9	23.0	18.0	14.9	12.8	8.3	7.1
	25 °C	456	426	379	340	295	243	207	182	162	134	114	100	73.7	58.7	42.3	33.4	27.7	23.6	18.5	15.3	13.1	8.5	7.3
1.83	20 °C	464	432	383	342	296	242	206	180	161	132	112	98.3	72.2	57.5	41.3	32.4	26.9	23.1	18.0	15.0	12.8	8.3	7.1
	25 °C	477	445	394	352	304	249	212	185	165	136	116	101	74.3	59.2	42.5	33.4	27.7	23.8	18.5	15.5	13.1	8.5	7.3
1.82	20 °C	485	451	397	354	304	247	210	183	162	133	114	99.2	72.6	57.7	41.4	32.5	27.0	23.1	18.1	14.9	12.8	8.3	7.1
	25 °C	499	464	409	364	313	255	216	188	167	137	117	102	74.8	59.4	42.6	33.5	27.8	23.8	18.6	15.4	13.2	8.5	7.3
1.80	20 °C	526	486	425	375	320	258	217	188	167	136	116	101	73.5	58.2	41.7	32.7	27.1	23.2	18.1	15.0	12.8	8.3	7.1
	25 °C	542	501	437	386	329	266	224	194	172	140	119	104	75.7	60.0	42.9	33.7	27.9	23.9	18.7	15.4	13.2	8.5	7.3
1.77	20 °C	584	536	462	404	340	271	227	195	172	140	118	103	74.5	58.9	42.0	32.9	27.2	23.3	18.2	15.0	12.9	8.3	7.1
	25 °C	602	552	476	416	350	279	233	201	177	144	122	106	76.7	60.7	43.3	33.9	28.0	24.0	18.7	15.5	13.2	8.5	7.3
1.75	20 °C	621	566	484	421	352	279	232	199	175	142	120	104	75.1	59.2	42.2	33.0	27.3	23.3	18.2	15.0	12.9	8.3	7.1
	25 °C	639	583	499	434	363	287	239	205	180	146	123	107	77.3	61.0	43.4	34.0	28.1	24.0	18.8	15.5	13.3	8.6	7.3
1.72	20 °C	671	608	514	443	368	288	238	204	179	144	121	105	75.7	59.7	42.4	33.2	27.4	23.4	18.3	15.1	12.9	8.3	7.1
	25 °C	691	626	530	457	379	297	246	210	184	149	125	108	78.0	61.5	43.7	34.2	28.2	24.1	18.8	15.5	13.3	8.6	7.3
1.70	20 °C	701	633	532	457	377	294	242	207	181	146	122	106	76.1	59.9	42.5	33.2	27.4	23.5	18.3	15.1	12.9	8.3	7.1
	25 °C	722	652	548	470	388	303	250	213	187	150	126	109	78.4	61.7	43.8	34.2	28.3	24.2	18.8	15.5	13.3	8.6	7.3
1.67	20 °C	743	666	556	474	389	301	247	210	184	147	124	107	76.6	60.2	42.7	33.3	27.5	23.5	18.3	15.1	12.9	8.3	7.1
	25 °C	766	686	573	488	400	310	254	217	189	152	127	110	78.9	62.0	43.9	34.3	28.3	24.2	18.9	15.6	13.3	8.6	7.3
1.65	20 °C	768	687	570	484	395	305	250	212	185	148	124	107	76.8	60.3	42.7	33.4	27.5	23.5	18.3	15.1	12.9	8.3	7.1
	25 °C	791	707	587	498	407	314	257	219	191	153	128	111	79.1	62.2	44.0	34.4	28.4	24.2	18.9	15.6	13.3	8.6	7.3
1.63	20 °C	791	705	582	493	401	309	252	214	187	149	125	108	77.1	60.5	42.8	33.4	27.6	23.5	18.4	15.1	12.9	8.3	7.1
	25 °C	815	726	600	508	413	318	260	221	192	154	129	111	79.4	62.3	44.1	34.4	28.4	24.2	18.9	15.6	13.3	8.6	7.3
1.60	20 °C	822	729	599	505	409	313	255	216	188	150	126	108	77.3	60.7	42.9	33.5	27.6	23.6	18.4	15.1	12.9	8.3	7.1
	25 °C	847	751	617	520	421	322	263	223	194	155	129	112	79.7	62.5	44.2	34.5	28.4	24.3	18.9	15.6	13.3	8.6	7.3

Constant current performance (in watt per cell) to the defined end-of-discharge voltages

Voltage [Vpc]	Temp	Discharge time [Minutes]																						
		1 - 2	3	5	7	10	15	20	25	30	40	50	60	90	120	180	240	300	360	480	600	720	1200	1440
1.90	20 °C	605	576	528	485	433	369	323	288	261	221	192	170	129	105	76.5	61.0	51.0	44.0	34.5	28.5	24.0	15.5	13.0
	25 °C	623	593	543	500	446	380	332	297	268	227	197	175	132	108	78.8	62.8	52.5	45.3	35.5	29.4	24.7	16.0	13.4
1.87	20 °C	717	676	611	555	488	408	352	311	280	234	202	178	133	108	78.0	62.0	51.5	44.5	34.5	28.5	24.5	15.5	13.0
	25 °C	739	696	629	571	502	420	363	320	288	241	208	183	137	111	80.3	63.9	53.0	45.8	35.5	29.4	25.2	16.0	13.4
1.85	20 °C	791	742	664	598	521	431	369	325	290	241	207	183	136	109	79.0	62.5	52.0	44.5	35.0	28.5	24.5	15.5	13.0
	25 °C	815	764	684	616	536	443	380	334	299	248	213	188	140	112	81.4	64.4	53.6	45.8	36.1	29.4	25.2	16.0	13.4
1.84	20 °C	827	773	689	618	536	441	377	330	295	244	210	184	137	110	79.4	62.8	52.1	44.7	34.9	28.7	24.5	15.4	13.1
	25 °C	852	796	710	637	552	454	388	340	304	252	216	190	141	113	81.8	64.6	53.7	46.0	35.9	29.6	25.2	15.9	13.4
1.83	20 °C	863	804	714	638	551	451	384	336	299	247	212	186	137	110	79.7	63.0	52.3	44.8	35.0	28.8	24.5	15.4	13.1
	25 °C	889	828	735	657	567	464	395	346	308	255	218	191	142	113	82.1	64.8	53.8	46.1	36.0	29.6	25.2	15.9	13.5
1.82	20 °C	898	834	737	657	565	460	391	341	303	250	214	188	139	111	80.0	63.0	52.5	45.0	35.0	29.0	24.5	15.5	13.0
	25 °C	924	859	759	676	581	474	402	351	312	258	220	193	143	114	82.4	64.9	54.1	46.4	36.1	29.9	25.2	16.0	13.4
1.80	20 °C	963	891	781	691	590	477	403	350	311	255	218	190	140	112	80.5	63.5	52.5	45.0	35.0	29.0	24.5	15.5	13.0
	25 °C	992	917	804	712	608	491	415	361	320	263	224	196	144	115	82.9	65.4	54.1	46.4	36.1	29.9	25.2	16.0	13.4
1.77	20 °C	1052	966	838	736	622	498	418	361	319	261	222	194	142	113	81.0	64.0	53.0	45.0	35.0	29.0	24.5	15.5	13.0
	25 °C	1083	994	863	758	641	512	430	372	329	268	228	199	146	116	83.4	65.9	54.6	46.4	36.1	29.9	25.2	16.0	13.4
1.75	20 °C	1105	1010	871	761	640	509	426	367	324	264	224	195	143	114	81.5	64.0	53.0	45.5	35.5	29.0	24.5	15.5	13.0
	25 °C	1138	1040	897	784	659	524	439	378	334	272	231	201	147	117	83.9	65.9	54.6	46.9	36.6	29.9	25.2	16.0	13.4
1.72	20 °C	1174	1068	914	794	663	524	435	375	330	268	227	197	144	114	81.5	64.0	53.0	45.5	35.5	29.0	24.5	15.5	13.0
	25 °C	1209	1100	941	817	683	539	448	386	339	276	233	203	148	117	83.9	65.9	54.6	46.9	36.6	29.9	25.2	16.0	13.4
1.70	20 °C	1215	1101	939	812	676	531	441	379	333	270	228	198	144	115	82.0	64.5	53.0	45.5	35.5	29.0	24.5	15.5	13.0
	25 °C	1251	1134	967	836	696	547	454	390	342	278	235	204	148	118	84.5	66.4	54.6	46.9	36.6	29.9	25.2	16.0	13.4
1.67	20 °C	1267	1144	969	835	692	541	448	383	337	272	230	200	145	115	82.0	64.5	53.5	45.5	35.5	29.0	24.5	15.5	13.0
	25 °C	1304	1178	998	860	712	557	461	394	347	280	236	205	149	118	84.5	66.4	55.1	46.9	36.6	29.9	25.2	16.0	13.4
1.65	20 °C	1296	1168	986	848	700	546	451	386	339	274	231	20											