

Datasheet



# 12CP92/19

Compact-Power Rackline™



# Technical specifications

## Type

## 12CP92/19

Part number

6630 0092


### Electrical Data

Nominal voltage	12 V	
Number of cells	6	
Rated capacity $C_{10}$ to 1.80 Vpc at 20 °C	92 Ah	
Rated capacity $C_8$ to 1.75 Vpc at 25 °C	89.6 Ah	
Current/Power for 0.5 h back-up time 1.65 Vpc 20 °C	111 A	1212 W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	63.8 A	714 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	34.8 A	399 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	19.5 A	226.2 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	10.8 A	125.4 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	9.2 A	105.6 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	4.9 A	54 W
Conversion to capacity at 25 °C (77 °F)	20 °C Ah x 1,03 (t > 1 h)	
Internal resistance ( $\pm$ 10%) to IEC/EN 60896-21	4.5 m $\Omega$	
Short circuit current ( $\pm$ 10%) to IEC/EN 60896-21	2.4 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service	$\approx$ 0.50 W	

### Mechanical Data

Weight ready for use	34.6 kg	
Height of monobloc	265 mm	
Height over gas collection system GCS™	274 mm	
Height over terminal connector	300 mm	
Width	105 mm	
Depth	392 mm	
Number of terminals	1 $\oplus$ /1 $\ominus$	
Dimension of connector screw hole	term.: M6	termin. conn.: M6 & M8/M10
Suggested/maximum cable cross-section	70 mm <sup>2</sup>	
Connection torque	6 Nm	
Terminal insulation class according to IEC/EN 60529	IP20	
Diameter of diagnostic hole for voltage probe	5 mm $\emptyset$	
Connector (copper, tin-coated ) rigid and insulated	40 mm <sup>2</sup>	
Complete connector and terminal connection accessories	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)	9 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	

# Operating specifications

Figure 1



Figure 2

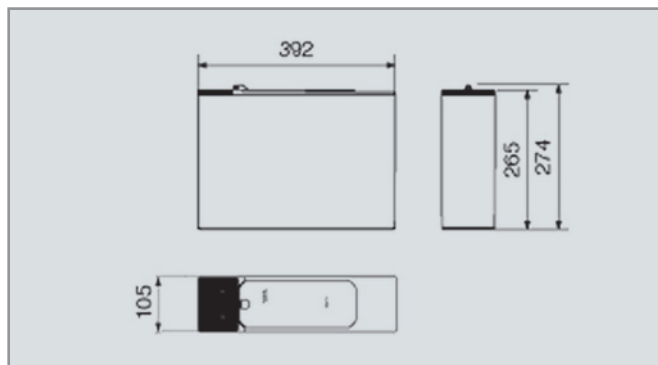
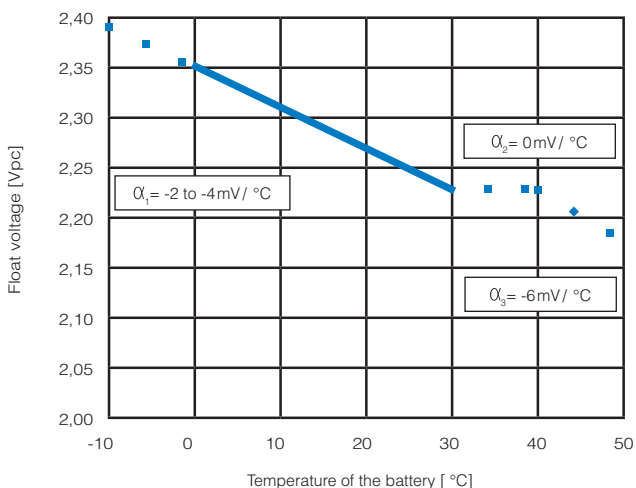


Figure 3



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

2.27 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

$$Q = 0.05 \cdot N_{\text{cells}} \cdot I_{\text{gas}} \cdot C_{\text{Ah C10}} \cdot 10^{-3} \text{ [m}^3\text{/h]}$$

$I_{\text{gas}} = 1$  (at 2.27 Vpc)  $I_{\text{gas}} = 8$  (at 2.40 Vpc)

e.g. 48 V:  $0.1104 \text{ m}^3\text{/h} = 3.90 \text{ cu.ft/h}$  (at 2.27 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 voltage

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	187.0	175.0	164.0	150.0	136.0	115.4	101.4	90.5	82.0	69.2	60.1	53.3	40.1	32.4	23.6	18.7	15.7	13.4	10.5	9.0	7.5	4.9	4.1
	25 °C	192.6	180.3	168.9	154.5	140.1	118.8	104.4	93.2	84.5	71.3	61.9	54.9	41.3	33.4	24.3	19.3	16.2	13.8	10.8	9.3	7.7	5.0	4.2
1.87	20 °C	225.0	209.0	193.0	173.0	153.0	128.8	111.6	98.6	88.5	73.8	63.5	56.0	41.6	33.3	24.1	19.0	15.9	13.7	10.6	9.1	7.6	4.9	4.2
	25 °C	231.8	215.3	198.8	178.2	157.6	132.7	114.9	101.5	91.2	76.0	65.4	57.7	42.8	34.3	24.8	19.6	16.4	14.1	10.9	9.4	7.8	5.0	4.3
1.85	20 °C	251.0	231.0	211.0	189.0	166.0	136.6	117.6	103.2	92.2	76.4	65.5	57.5	42.3	33.8	24.4	19.3	16.0	13.7	10.8	9.1	7.6	4.9	4.2
	25 °C	258.5	237.9	217.3	194.7	171.0	140.7	121.1	106.2	95.0	78.7	67.5	59.2	43.6	34.8	25.1	19.9	16.5	14.1	11.1	9.4	7.8	5.0	4.3
1.84	20 °C	264.0	243.0	220.0	195.0	171.0	141.1	119.8	105.3	93.9	77.5	66.3	58.1	42.7	34.0	24.5	19.3	16.0	13.8	10.8	9.1	7.6	4.9	4.2
	25 °C	271.9	250.3	226.6	200.9	176.1	145.4	123.4	108.4	96.7	79.8	68.3	59.9	44.0	35.0	25.2	19.9	16.5	14.2	11.1	9.4	7.8	5.0	4.3
1.83	20 °C	277.0	254.0	228.0	202.0	176.0	144.5	123.2	107.3	95.5	78.6	67.1	58.7	43.0	34.3	24.6	19.4	16.0	13.8	10.8	9.2	7.6	4.9	4.2
	25 °C	285.3	261.6	234.8	208.1	181.3	148.8	126.9	110.5	98.4	81.0	69.1	60.4	44.3	35.3	25.3	20.0	16.5	14.2	11.1	9.5	7.8	5.0	4.3
1.82	20 °C	289.0	264.0	237.0	209.0	181.0	147.8	125.3	109.2	97.0	79.6	67.8	59.2	43.3	34.5	24.7	19.4	16.1	13.8	10.8	9.2	7.6	4.9	4.2
	25 °C	297.7	271.9	244.1	215.3	186.4	152.2	129.1	112.4	99.9	82.0	69.9	61.0	44.6	35.5	25.4	20.0	16.6	14.2	11.1	9.5	7.8	5.0	4.3
1.80	20 °C	314.0	285.0	254.0	222.0	191.0	154.0	129.7	112.5	100.0	81.4	69.1	60.2	43.9	34.8	24.9	19.5	16.2	13.8	10.8	9.2	7.7	4.9	4.2
	25 °C	323.4	293.6	261.6	228.7	196.7	158.6	133.6	115.9	103.0	83.8	71.2	62.0	45.2	35.8	25.6	20.1	16.7	14.2	11.1	9.5	7.9	5.0	4.3
1.77	20 °C	349.0	314.0	276.0	239.0	203.0	161.9	135.3	116.7	103.0	83.5	70.6	61.4	44.5	35.2	25.1	19.7	16.3	13.9	10.9	9.2	7.7	5.0	4.2
	25 °C	359.5	323.4	284.3	246.2	209.1	166.8	139.4	120.2	106.1	86.0	72.8	63.2	45.8	36.3	25.9	20.3	16.8	14.3	11.2	9.5	7.9	5.2	4.3
1.75	20 °C	371.0	332.0	289.0	249.0	210.0	166.4	138.5	119.0	105.0	84.7	71.5	62.0	44.8	35.4	25.2	19.7	16.3	13.9	10.9	9.2	7.7	5.0	4.2
	25 °C	382.1	342.0	297.7	256.5	216.3	171.4	142.6	122.6	108.2	87.2	73.6	63.9	46.1	36.5	26.0	20.3	16.8	14.3	11.2	9.5	7.9	5.2	4.3
1.72	20 °C	401.0	356.0	307.0	262.0	220.0	172.5	142.2	122.1	106.0	86.2	72.8	62.7	45.2	35.6	25.3	19.8	16.4	14.0	10.9	9.2	7.7	4.9	4.2
	25 °C	413.0	366.7	316.2	269.9	226.6	177.7	146.5	125.7	109.2	88.8	75.0	64.6	46.6	36.7	26.1	20.4	16.9	14.4	11.2	9.5	7.9	5.0	4.3
1.70	20 °C	419.0	371.0	318.0	270.0	225.0	175.5	144.7	123.6	108.0	87.0	73.1	63.2	45.5	35.8	25.4	19.8	16.4	14.0	10.9	9.3	7.7	5.0	4.2
	25 °C	431.6	382.1	327.5	278.1	231.8	180.8	149.0	127.3	111.2	89.6	75.3	65.1	46.9	36.9	26.2	20.4	16.9	14.4	11.2	9.6	7.9	5.2	4.3
1.67	20 °C	444.0	391.0	332.0	281.0	232.0	179.8	147.6	125.7	110.0	88.0	73.8	63.8	45.7	35.9	25.5	19.9	16.4	14.0	10.9	9.3	7.7	5.0	4.2
	25 °C	457.3	402.7	342.0	289.4	239.0	185.1	152.0	129.4	113.3	90.6	76.1	65.7	47.1	37.0	26.3	20.5	16.9	14.4	11.2	9.6	7.9	5.2	4.3
1.65	20 °C	459.0	403.0	340.0	287.0	236.0	182.2	149.2	126.8	111.0	88.6	74.2	64.1	45.9	36.0	25.5	19.9	16.4	14.0	11.0	9.3	7.7	5.0	4.2
	25 °C	472.8	415.1	350.2	295.6	243.1	187.6	153.7	130.6	114.3	91.3	76.5	66.0	47.3	37.1	26.3	20.5	16.9	14.4	11.3	9.6	7.9	5.2	4.3
1.63	20 °C	473.0	413.0	348.0	292.0	240.0	184.3	150.6	127.9	111.0	89.1	74.6	64.3	46.0	36.1	25.6	20.0	16.5	14.1	11.0	9.3	7.7	5.0	4.2
	25 °C	487.2	425.4	358.4	300.8	247.2	189.8	155.1	131.7	114.3	91.8	76.8	66.3	47.4	37.2	26.4	20.6	17.0	14.5	11.3	9.6	7.9	5.2	4.3
1.60	20 °C	491.0	428.0	358.0	299.0	244.0	187.0	152.4	129.2	112.0	89.7	75.0	64.7	46.2	36.2	25.6	20.0	16.5	14.1	11.0	9.3	7.7	5.0	4.2
	25 °C	505.7	440.8	368.7	308.0	251.3	192.6	157.0	133.0	115.4	92.4	77.3	66.6	47.6	37.3	26.4	20.6	17.0	14.5	11.3	9.6	7.9	5.2	4.3

Constant power performance (in watt per cell) to the defined end-of-discharge voltage

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	361.0	338.0	315.0	287.0	259.0	220.3	192.6	172.1	156.0	132.0	114.6	101.5	76.9	62.3	45.5	36.2	30.2	26.1	20.5	17.3	14.2	9.0	7.8
	25 °C	371.8	348.1	324.5	295.6	266.8	226.9	198.4	177.3	160.7	136.0	118.1	104.6	79.2	64.2	46.9	37.3	31.1	26.9	21.1	17.8	14.6	9.3	8.0
1.87	20 °C	428.0	396.0	365.0	328.0	291.0	243.4	210.2	185.9	167.0	140.0	120.6	106.4	79.5	64.2	46.7	37.0	30.6	26.5	20.5	17.3	14.6	9.0	7.8
	25 °C	440.8	407.9	376.0	337.8	299.7	250.7	216.5	191.5	172.0	144.2	124.2	109.6	81.9	66.1	48.1	38.1	31.5	27.3	21.1	17.8	15.0	9.3	8.0
1.85	20 °C	473.0	435.0	396.0	354.0	311.0	257.2	220.6	193.8	173.0	144.0	123.9	109.0	81.0	65.0	47.0	37.3	31.0	26.5	20.5	17.6	14.6	9.0	7.8
	25 °C	487.2	448.1	407.9	364.6	320.3	264.9	227.3	199.6	178.2	148.3	127.7	112.3	83.4	67.0	48.4	38.4	31.9	27.3	21.1	18.1	15.0	9.3	8.0
1.84	20 °C	494.0	454.0	412.0	366.0	320.0	263.5	225.1	197.3	176.0	146.0	125.2	110.0	81.5	65.3	47.3	37.4	31.0	26.6	20.7	17.5	14.5	9.1	7.6
	25 °C	508.8	467.6	424.4	377.0	329.6	271.4	231.9	203.2	181.3	150.4	129.0	113.3	83.9	67.3	48.7	38.5	31.9	27.4	21.3	18.0	14.9	9.4	7.8
1.83	20 °C	515.0	472.0	426.0	378.0	329.0	269.4	229.4	200.6	179.0	148.0	126.5	111.0	82.1	65.7	47.5	37.5	31.1	26.6	20.8	17.5	14.5	9.1	7.6
	25 °C	530.5	486.2	438.8	389.3	338.9	277.5	236.3	206.6	184.4	152.4	130.3	114.4	84.6	67.7	48.9	38.6	32.0	27.4	21.4	18.0	14.9	9.4	7.8
1.82	20 °C	536.0	490.0	440.0	389.0	337.0	274.8	233.3	203.8	181.0	149.0	127.7	112.0	82.5	66.1	47.8	37.7	31.0	26.5	20.9	17.6	14.6	9.0	7.8
	25 °C	552.1	504.7	453.2	400.7	347.1	283.0	240.3	210.0	186.4	153.5	131.5	115.4	85.0	68.1	49.2	38.8	31.9	27.3	21.5	18.1	15.0	9.3	8.0
1.80	20 °C	575.0	523.0	466.0	409.0	352.0	284.9	240.4	209.1	186.0	152.0	129.9	113.5	83.6	66.5	47.8	37.7	31.4	26.9	20.9	17.6	14.6	9.0	7.8
	25 °C	592.3	538.7	480.0	421.3	362.6	293.4	247.6	215.3	191.6	156.6	133.8	116.9	86.1	68.5	49.2	38.8	32.3	27.7	21.5	18.1	15.0	9.3	8.0
1.77	20 °C	628.0	567.0	501.0	435.0	371.0	297.2	249.4	215.8	191.0	156.0	132.5	115.4	84.4	67.2	48.2	38.1	31.4	26.9	20.9	17.6	14.6	9.3	7.8
	25 °C	646.8	584.0	516.0	448.1	382.1	306.1	256.9	222.3	196.7	160.7	136.5	118.8	86.9	69.2	49.6	39.2	32.3	27.7	21.5	18.1	15.0	9.6	8.0
1.75	20 °C	660.0	593.0	520.0	451.0	382.0	304.3	254.2	219.1	193.0	158.0	133.7	116.5	85.1	67.6	48.5	38.1	31.4	26.9	20.9	17.6	14.6	9.3	7.8
	25 °C	679.8	610.8	535.6	464.5	393.5	313.4	261.9	225.7	198.8	162.7	137.7	120.0	87.7	69.6	50.0	39.2	32.3	27.7	21.5	18.1	15.0	9.6	8.0
1.72	20 °C	701.0	627.0	546.0	470.0	396.0	312.9	260.2	223.6	197.0	160.0	135.1	117.6	85.9	67.9	48.5	38.1	31.7	26.9	20.9	17.6	14.6	9.3	7.8
	25 °C	722.0	645.8	562.4	484.1	407.9	322.2	268.0	230.3	202.9	164.8	139.2	121.1	88.5	69.9	50.0	39.2	32.7	27.7	21.5				