

Runtime Charts

For Eaton 93E 80-120 kVA UPS

93E UPS on-battery runtimes with different load ratings

External batteries with 93P/E Small battery cabinet

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93E battery configuration

Table 1. End of discharge voltage

Blocks	Cells	Volts per cell
36	216	1.8 V/Cell
38	228	1.75 V/Cell
40	240	1.67 V/Cell

The runtime calculations in this document have been done using End of discharge voltages presented in Table 1 and ambient temperature of 25°C. Notice the variation in the End of discharge voltages in regard to number of cells/blocks per string.

10-year external batteries

CSB HRL 12V 200W

Table 2. External battery back-up table for UPS load ratings of 80-120 kVA with **p.f. 0.8**

Battery	Qty	40kVA	50kVA	60kVA	70kVA	80kVA	90kVA	100kVA	120kVA	kVA
<i>200W 12V</i>	<i>1x36</i>	18	13	8	5	-	-	-	-	min
<i>200W 12V</i>	<i>1x38</i>	21	15	11	8	6	-	-	-	min
<i>200W 12V</i>	<i>1x40</i>	25	18	14	11	8	6	-	-	min
<i>200W 12V</i>	<i>2x36</i>	49	36	28	22	18	15	13	8	min
<i>200W 12V</i>	<i>2x38</i>	56	42	31	26	21	18	15	11	min
<i>200W 12V</i>	<i>2x40</i>	61	46	37	29	25	21	18	14	min
<i>200W 12V</i>	<i>3x36</i>	85	63	49	40	33	28	24	18	min
<i>200W 12V</i>	<i>3x38</i>	93	72	56	46	38	31	27	21	min
<i>200W 12V</i>	<i>3x40</i>	102	79	61	50	43	37	31	25	min
<i>200W 12V</i>	<i>4x36</i>	115	91	74	59	49	42	36	28	min
<i>200W 12V</i>	<i>4x38</i>	125	100	82	67	56	48	42	31	min
<i>200W 12V</i>	<i>4x40</i>	140	109	88	75	61	53	46	37	min

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Table 3. External battery back-up table for UPS load ratings of 80-120 kVA with **p.f. 0.9**

Battery	Qty	40kVA	50kVA	60kVA	70kVA	80kVA	90kVA	100kVA	120kVA	kVA
200W 12V	1x36	15	10	6	-	-	-	-	-	min
200W 12V	1x38	18	13	9	6	-	-	-	-	min
200W 12V	1x40	21	15	11	9	6	-	-	-	min
200W 12V	2x36	42	30	23	18	15	12	10	6	min
200W 12V	2x38	48	35	27	21	18	15	13	9	min
200W 12V	2x40	53	40	30	26	21	18	15	11	min
200W 12V	3x36	74	54	42	34	28	23	20	15	min
200W 12V	3x38	82	60	48	39	31	27	23	18	min
200W 12V	3x40	88	68	53	44	37	30	27	21	min
200W 12V	4x36	103	80	62	50	42	36	30	23	min
200W 12V	4x38	111	87	71	57	48	41	35	27	min
200W 12V	4x40	120	95	78	63	53	46	40	30	min

Note!

The specifications are subject to change without a notice.

Exide XP12V1800

Table 4. External battery back-up table for UPS load ratings of 80-120 kVA with **p.f. 0.8**

Battery	Qty	40kVA	50kVA	60kVA	70kVA	80kVA	90kVA	100kVA	120kVA	kVA
XP12V1800	1x36	22	15	12	9	8	6	-	-	min
XP12V1800	1x38	27	18	14	11	9	8	6	-	min
XP12V1800	1x40	29	21	16	13	10	9	8	5	min
XP12V1800	2x36	57	44	35	28	22	18	15	12	min
XP12V1800	2x38	66	49	40	32	27	22	18	14	min
XP12V1800	2x40	75	54	43	36	29	25	21	16	min
XP12V1800	3x36	102	77	57	47	41	35	29	22	min
XP12V1800	3x38	110	88	66	54	45	40	35	27	min
XP12V1800	3x40	116	96	75	58	50	43	38	29	min
XP12V1800	4x36	138	108	90	71	57	50	44	35	min
XP12V1800	4x38	154	116	99	83	66	56	49	40	min
XP12V1800	4x40	166	123	106	90	75	60	54	43	min

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Table 5. External battery back-up table for UPS load ratings of 80-120 kVA with **p.f. 0.9**

Battery	Qty	40kVA	50kVA	60kVA	70kVA	80kVA	90kVA	100kVA	120kVA	kVA
XP12V1800	1x36	18	13	10	8	6	-	-	-	min
XP12V1800	1x38	22	15	12	9	8	6	-	-	min
XP12V1800	1x40	25	17	13	11	9	8	6	-	min
XP12V1800	2x36	50	38	29	23	18	15	13	10	min
XP12V1800	2x38	56	43	34	27	22	18	15	12	min
XP12V1800	2x40	60	46	38	30	25	20	17	13	min
XP12V1800	3x36	90	62	50	41	35	29	25	18	min
XP12V1800	3x38	99	74	56	46	40	34	29	22	min
XP12V1800	3x40	106	83	60	51	43	38	33	25	min
XP12V1800	4x36	117	97	76	58	50	43	38	29	min
XP12V1800	4x38	131	105	87	68	56	48	43	34	min
XP12V1800	4x40	144	112	94	77	60	53	46	38	min

Note!

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Small battery cabinet specifications

Table 6. Eaton 93P/E Small battery cabinet specifications

Cabinet (P/N)	Breaker rating	Battery size	Battery Design life	Blocks ¹	Used with
P-105000018-001	400 A	EMPTY M6 cables	-	For 36, 38 or 40	93E 80-120kVA
P-105000018-002	400 A	CSB HRL 200WPC 12V	10 years	36	93E 80-120kVA
P-105000018-003	400 A	CSB HRL 200WPC 12V	10 years	40	93E 80-120kVA
P-105000018-004	400 A	Exide XP12V1800	10 years	36	93E 80-120kVA
P-105000018-005	400 A	Exide XP12V1800	10 years	40	93E 80-120kVA

¹ Amount of battery blocks that are provided with the cabinet or can be installed in the battery cabinet (if empty).

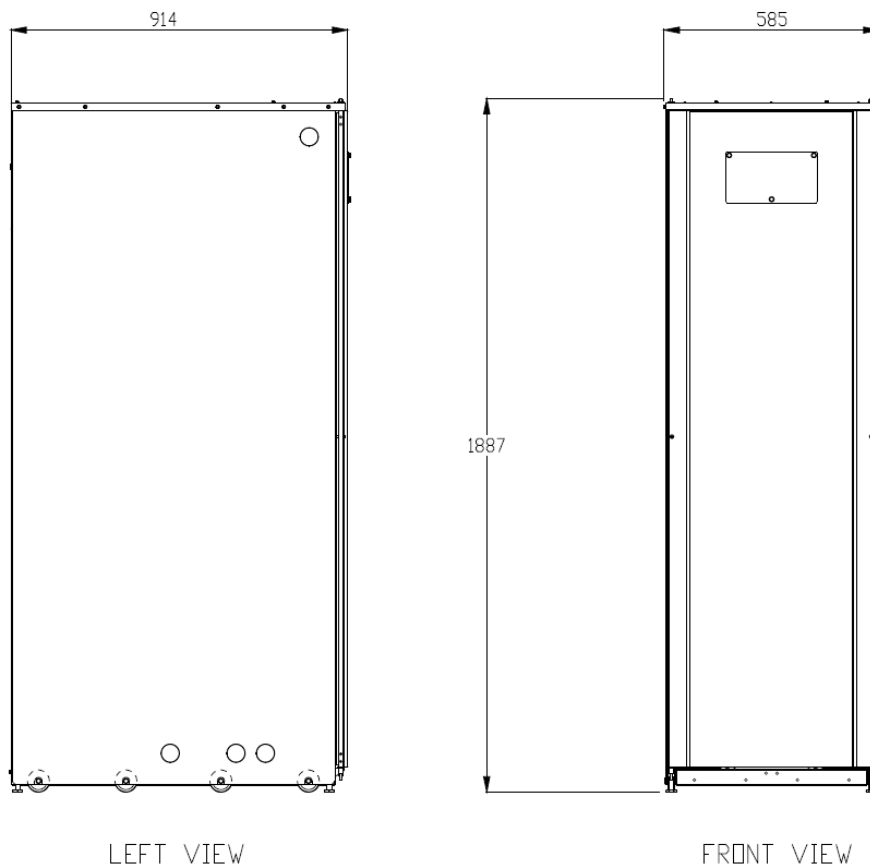


Figure 1. 93P/E Small battery cabinet. Values are in millimetres.