



data safe<sup>®</sup>  
HX PLUS

data safe<sup>®</sup>  
HX

# Performance Data

## Constant Power Discharge Performance Data

### Constant Power (Watts per cell) to 1.75Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	625.1	466.9	369.8	305.7	228.2	168.0	132.7
12HX450+	729.9	544.9	431.5	356.7	266.2	195.9	154.7
12HX530+	794.3	616.8	501.6	422.0	320.6	238.3	190.0
12HX600+	899.1	698.7	568.1	477.1	362.2	269.1	214.5
12HX650F-FR+	990.8	772.9	627.5	526.7	400.5	298.9	239.6
12HX700F-FR+	1024	809.0	664.3	557.9	424.6	316.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	46.8	30.4	22.8	18.4	13.3	9.62	7.57
12HX35	70.3	47.0	36.0	29.1	21.2	15.2	12.0
12HX50	105.4	70.0	53.4	43.5	31.9	23.0	18.1
12HX80	144.3	101.1	78.6	63.9	46.7	33.6	26.6
12HX105	192.2	133.7	102.1	83.8	61.8	45.0	35.7
12HX100S	161.8	124.8	101.4	85.4	65.4	49.1	39.4
12HX135	244.1	171.4	134.0	110.1	81.8	59.6	47.5
12HX150	270.1	195.3	152.1	126.9	96.0	71.2	57.0
12HX205	373.1	257.9	197.2	160.3	117.6	85.1	66.6
12HX300	513.3	356.7	276.9	227.2	173.3	127.8	102.1
12HX330	590.4	417.9	328.4	272.1	204.3	149.9	119.5
12HX400	671.2	478.5	371.2	308.2	230.0	170.0	136.1
12HX505	782.8	600.2	479.4	398.4	298.1	218.1	172.9
12HX540	834.9	637.7	511.0	424.5	317.8	233.8	185.5

### Constant Power (Watts per cell) to 1.70Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	666.6	489.1	381.6	312.8	230.9	168.1	132.7
12HX450+	778.6	570.9	445.3	364.9	269.3	196.0	154.7
12HX530+	848.1	650.4	522.2	435.2	326.5	240.0	190.4
12HX600+	962.7	738.0	591.6	492.2	369.1	271.0	214.8
12HX650F-FR+	1060	806.8	644.8	536.4	404.3	299.7	239.6
12HX700F-FR+	1089	850.6	690.9	575.0	432.4	317.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	49.0	31.3	23.3	18.6	13.4	9.63	7.57
12HX35	72.8	47.9	36.2	29.2	21.2	15.2	12.0
12HX50	110.5	72.0	54.4	44.0	32.1	23.0	18.1
12HX80	152.2	104.2	80.1	64.7	46.8	33.6	26.6
12HX105	204.1	139.1	105.2	85.6	62.9	45.6	36.1
12HX100S	174.5	131.9	105.4	88.1	66.9	49.8	39.7
12HX135	256.0	175.5	135.5	110.6	81.8	59.6	47.5
12HX150	289.1	205.0	157.6	130.0	97.4	71.5	57.0
12HX205	399.5	269.3	203.5	164.2	118.5	85.1	66.6
12HX300	545.4	368.7	283.4	231.0	174.3	127.8	102.1
12HX330	624.2	430.7	335.6	276.3	205.6	149.9	119.5
12HX400	708.1	493.2	380.0	312.8	231.6	170.0	136.1
12HX505	844.7	637.1	498.7	409.9	301.3	217.9	172.9
12HX540	897.5	674.8	531.7	438.5	326.3	235.9	186.2

## Constant Power Discharge Performance Data

### Constant Power (Watts per cell) to 1.67Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	688.5	498.2	385.8	314.5	230.9	168.1	132.7
12HX450+	804.3	581.7	450.2	367.0	269.3	196.0	154.7
12HX530+	876.2	665.8	530.4	438.5	326.8	240.0	190.4
12HX600+	995.7	755.8	600.5	496.2	369.4	271.0	214.8
12HX650F-FR+	1094	819.5	649.9	537.9	404.3	299.7	239.6
12HX700F-FR+	1122	869.9	700.6	580.9	432.4	317.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	50.0	31.6	23.3	18.6	13.4	9.63	7.57
12HX35	73.8	48.0	36.2	29.2	21.2	15.2	12.0
12HX50	112.7	72.7	54.5	44.0	32.1	23.0	18.1
12HX80	155.6	105.2	80.2	64.7	46.8	33.6	26.6
12HX105	209.6	141.3	106.9	86.0	63.1	45.7	36.2
12HX100S	180.9	134.8	106.9	89.0	67.2	49.8	39.7
12HX135	260.3	176.5	135.5	110.6	81.8	59.6	47.5
12HX150	298.7	209.0	159.6	130.7	97.4	71.5	57.0
12HX205	412.4	273.9	205.5	164.2	118.5	85.1	66.6
12HX300	557.9	373.1	284.3	231.0	174.3	127.8	102.1
12HX330	637.2	435.4	336.4	276.3	205.6	149.9	119.5
12HX400	722.1	498.4	381.2	312.8	231.6	170.0	136.1
12HX505	877.4	652.9	506.3	412.1	301.3	217.9	172.9
12HX540	930.7	690.9	540.3	444.3	326.4	235.9	186.2

### Constant Power (Watts per cell) to 1.65Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	701.2	503.0	387.7	314.5	230.9	168.1	132.7
12HX450+	819.0	587.2	452.4	367.0	269.3	196.0	154.7
12HX530+	893.2	673.7	533.8	439.5	326.8	240.0	190.4
12HX600+	1016	764.8	604.3	497.3	369.4	271.0	214.8
12HX650F-FR+	1113	824.8	651.8	537.9	404.3	299.7	239.6
12HX700F-FR+	1143	880.2	705.3	583.5	432.4	317.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	50.5	31.6	23.3	18.6	13.4	9.63	7.57
12HX35	74.2	48.0	36.2	29.2	21.2	15.2	12.0
12HX50	113.9	72.8	54.5	44.0	32.1	23.0	18.1
12HX80	157.2	105.5	80.2	64.7	46.8	33.6	26.6
12HX105	212.6	142.3	106.7	86.2	63.1	45.7	36.2
12HX100S	184.7	136.2	107.6	89.4	67.2	49.8	39.7
12HX135	262.1	176.7	135.5	110.6	81.8	59.6	47.5
12HX150	304.3	210.9	160.5	130.7	97.4	71.5	57.0
12HX205	419.6	276.3	205.5	164.2	118.5	85.1	66.6
12HX300	563.3	374.8	284.3	231.0	174.3	127.8	102.1
12HX330	643.1	437.3	336.4	276.3	205.6	149.9	119.5
12HX400	728.7	500.3	381.2	312.8	231.6	170.0	136.1
12HX505	897.3	660.7	510.1	412.1	301.3	217.9	172.9
12HX540	951.0	699.2	544.9	445.5	326.4	235.9	186.2

## Constant Power Discharge Performance Data

### Constant Power (Watts per cell) to 1.63Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	713.1	507.0	388.3	314.5	230.9	168.1	132.7
12HX450+	833.1	591.9	453.2	367.0	269.3	196.0	154.7
12HX530+	909.0	680.2	535.4	439.5	326.8	240.0	190.4
12HX600+	1034	772.2	606.4	497.3	369.4	271.0	214.8
12HX650F-FR+	1130	828.4	651.8	537.9	404.3	299.7	239.6
12HX700F-FR+	1162	889.0	709.1	583.9	432.4	317.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	50.9	31.6	23.3	18.6	13.4	9.63	7.57
12HX35	74.4	48.0	36.2	29.2	21.2	15.2	12.0
12HX50	115.0	72.8	54.5	44.0	32.1	23.0	18.1
12HX80	158.4	105.5	80.2	64.7	46.8	33.6	26.6
12HX105	215.3	143.1	107.0	86.3	63.1	45.7	36.2
12HX100S	188.1	137.4	108.1	89.5	67.2	49.8	39.7
12HX135	263.4	176.7	135.5	110.6	81.8	59.6	47.5
12HX150	309.1	212.5	160.5	130.7	97.4	71.5	57.0
12HX205	425.7	278.2	205.5	164.2	118.5	85.1	66.6
12HX300	567.2	374.8	284.3	231.0	174.3	127.8	102.1
12HX330	647.6	437.2	336.4	276.3	205.6	149.9	119.5
12HX400	733.7	500.3	381.2	312.8	231.6	170.0	136.1
12HX505	915.7	667.1	510.9	412.1	301.3	217.9	172.9
12HX540	969.9	706.1	548.7	445.5	326.4	235.9	186.2

### Constant Power (Watts per cell) to 1.60Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	729.0	511.2	388.3	314.5	230.9	168.1	132.7
12HX450+	851.6	596.8	453.2	367.0	269.3	196.0	154.7
12HX530+	930.0	688.0	536.4	439.5	326.8	240.0	190.4
12HX600+	1059	780.8	607.5	497.3	369.4	271.0	214.8
12HX650F-FR+	1134	831.2	651.8	537.9	404.3	299.7	239.6
12HX700F-FR+	1189	899.0	712.6	583.9	432.4	317.0	251.3

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	51.4	31.6	23.3	18.6	13.4	9.63	7.57
12HX35	74.6	48.0	36.2	29.2	21.2	15.2	12.0
12HX50	116.1	72.8	54.5	44.0	32.1	23.0	18.1
12HX80	159.6	105.5	80.2	64.7	46.8	33.6	26.6
12HX105	218.6	143.7	107.0	86.3	63.1	45.7	36.2
12HX100S	192.4	138.5	108.5	89.5	67.2	49.8	39.7
12HX135	264.2	176.7	135.5	110.6	81.8	59.6	47.5
12HX150	315.1	214.0	160.5	130.7	97.4	71.5	57.0
12HX205	433.2	278.8	205.5	164.2	118.5	85.1	66.6
12HX300	571.0	374.8	284.3	231.0	174.3	127.8	102.1
12HX330	652.0	437.2	336.4	276.3	205.6	149.9	119.5
12HX400	738.6	500.3	381.2	312.8	231.6	170.0	136.1
12HX505	940.5	675.0	510.9	412.1	301.3	217.9	172.9
12HX540	994.8	714.5	549.5	445.5	326.4	235.9	186.2

## Constant Current Discharge Performance Data

### Discharge Current (Amperes) to 1.75Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	352.4	256.9	200.4	163.8	120.7	87.22	68.58
12HX450+	411.5	299.8	233.8	191.1	140.7	101.7	79.96
12HX530+	450.3	342.8	275.2	228.8	171.2	125.2	99.45
12HX600+	509.8	388.5	311.4	258.7	193.6	141.4	112.2
12HX650F-FR+	567.4	431.0	342.3	283.8	212.6	156.3	124.5
12HX700F-FR+	581.1	451.0	363.6	302.2	226.4	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	25.6	16.3	12.1	9.64	6.93	4.98	3.89
12HX35	38.6	25.2	19.1	15.2	10.9	7.80	6.11
12HX50	57.8	37.7	28.4	22.9	16.7	11.9	9.26
12HX80	80.4	55.1	42.2	33.9	24.4	17.4	13.6
12HX105	105.9	71.9	54.7	44.2	32.4	23.5	18.6
12HX100S	91.5	69.4	55.7	46.5	35.1	25.9	20.7
12HX135	135.9	93.4	71.8	58.4	42.7	30.8	24.3
12HX150	152.1	106.7	82.6	68.2	51.0	37.4	29.5
12HX205	208.0	140.6	106.0	85.4	61.9	44.0	34.4
12HX300	286.4	195.0	149.0	121.4	92.1	66.7	52.8
12HX330	329.2	228.9	177.4	145.6	108.0	78.3	61.7
12HX400	375.6	261.1	200.4	165.0	121.5	89.0	70.4
12HX505	445.1	333.1	262.3	215.4	158.9	114.3	89.6
12HX540	473.3	353.8	279.1	229.2	169.3	123.0	97.3

### Discharge Current (Amperes) to 1.70Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	384.5	273.3	208.7	168.9	122.1	87.22	68.58
12HX450+	449.0	319.0	243.5	197.0	142.4	101.7	79.96
12HX530+	493.0	368.0	290.0	238.0	175.3	126.1	99.45
12HX600+	559.7	417.7	328.5	269.3	198.1	142.4	112.2
12HX650F-FR+	620.0	457.0	355.5	291.5	215.1	156.5	124.5
12HX700F-FR+	633.6	482.9	383.5	314.2	230.9	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	27.3	16.9	12.4	9.77	6.96	4.98	3.89
12HX35	40.6	25.8	19.2	15.2	10.9	7.80	6.11
12HX50	61.7	39.0	29.1	23.2	16.8	11.9	9.26
12HX80	86.4	57.3	43.2	34.4	24.5	17.4	13.6
12HX105	114.8	75.4	56.7	45.6	33.2	23.9	18.9
12HX100S	101.1	74.6	58.7	48.4	36.2	26.4	20.9
12HX135	145.1	96.3	72.8	58.6	42.7	30.8	24.3
12HX150	166.2	113.9	86.2	70.6	51.8	37.5	29.5
12HX205	227.0	148.5	110.3	87.6	62.3	44.0	34.4
12HX300	310.0	203.6	154.2	123.6	92.7	66.7	52.8
12HX330	355.0	238.4	183.1	148.5	108.7	78.3	61.7
12HX400	403.9	272.9	206.7	168.3	122.2	89.0	70.4
12HX505	492.5	359.2	275.5	223.4	160.3	114.3	89.6
12HX540	521.5	380.5	293.8	239.2	174.4	124.3	97.4



## Constant Current Discharge Performance Data

### Discharge Current (Amperes) to 1.67Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	402.0	280.5	211.9	169.4	122.1	87.22	68.58
12HX450+	469.5	327.4	247.3	197.7	142.4	101.7	79.96
12HX530+	516.4	380.2	296.0	240.8	175.3	126.1	99.45
12HX600+	587.2	431.7	335.1	272.5	198.1	142.4	112.2
12HX650F-FR+	647.3	467.7	360.1	292.2	215.1	156.5	124.5
12HX700F-FR+	662.9	498.5	391.5	318.7	230.9	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	28.0	17.1	12.4	9.77	6.96	4.98	3.89
12HX35	41.4	25.8	19.2	15.2	10.9	7.80	6.11
12HX50	63.4	39.5	29.1	23.2	16.8	11.9	9.26
12HX80	89.3	58.1	43.2	34.4	24.5	17.4	13.6
12HX105	119.3	76.8	57.5	46.0	33.4	24.0	18.9
12HX100S	106.2	76.9	59.9	49.2	36.4	26.4	20.9
12HX135	149.2	97.0	72.8	58.6	42.7	30.8	24.3
12HX150	173.8	117.0	87.6	70.9	51.8	37.5	29.5
12HX205	236.8	153.6	111.0	87.6	62.3	44.0	34.4
12HX300	320.3	207.0	154.3	123.6	92.7	66.7	52.8
12HX330	366.2	242.3	183.2	148.5	108.7	78.3	61.7
12HX400	416.0	277.7	206.8	168.3	122.2	89.0	70.4
12HX505	518.6	371.1	281.0	223.7	160.3	114.3	89.6
12HX540	548.3	392.7	300.4	242.9	174.4	124.3	97.4

### Discharge Current (Amperes) to 1.65Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	413.0	284.4	212.8	169.4	122.1	87.22	68.58
12HX450+	482.4	331.9	248.3	197.7	142.4	101.7	79.96
12HX530+	531.3	387.3	298.6	241.0	175.3	126.1	99.45
12HX600+	604.0	439.6	338.1	272.6	198.1	142.4	112.2
12HX650F-FR+	663.7	473.2	360.6	292.2	215.1	156.5	124.5
12HX700F-FR+	681.8	507.6	395.9	319.2	230.9	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	28.4	17.1	12.4	9.77	6.96	4.98	3.89
12HX35	41.8	25.8	19.2	15.2	10.9	7.80	6.11
12HX50	64.4	39.5	29.1	23.2	16.8	11.9	9.26
12HX80	90.8	58.1	43.2	34.4	24.5	17.4	13.6
12HX105	122.0	77.6	57.9	46.2	33.4	24.0	18.9
12HX100S	109.4	78.2	60.5	49.5	36.4	26.4	20.9
12HX135	151.3	97.0	72.8	58.6	42.7	30.8	24.3
12HX150	178.3	118.7	87.8	70.9	51.8	37.5	29.5
12HX205	242.5	153.5	111.0	87.6	62.3	44.0	34.4
12HX300	325.6	207.5	154.3	123.6	92.7	66.7	52.8
12HX330	372.1	242.8	183.2	148.5	108.7	78.3	61.7
12HX400	422.3	278.4	206.8	168.3	122.2	89.0	70.4
12HX505	535.0	377.7	282.1	223.7	160.3	114.3	89.6
12HX540	565.2	399.7	304.2	242.9	174.4	124.3	97.4

## Constant Current Discharge Performance Data

### Discharge Current (Amperes) to 1.63Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	423.3	287.6	212.8	169.4	122.1	87.22	68.58
12HX450+	494.4	335.7	248.3	197.7	142.4	101.7	79.96
12HX530+	545.4	393.2	300.0	241.0	175.3	126.1	99.45
12HX600+	620.7	446.1	339.6	272.6	198.1	142.4	112.2
12HX650F-FR+	678.0	477.5	360.6	292.2	215.1	156.5	124.5
12HX700F-FR+	699.9	515.4	399.3	319.2	230.9	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	28.8	17.1	12.4	9.77	6.96	4.98	3.89
12HX35	42.1	25.8	19.2	15.2	10.9	7.80	6.11
12HX50	65.2	39.5	29.1	23.2	16.8	11.9	9.26
12HX80	92.0	58.1	43.2	34.4	24.5	17.4	13.6
12HX105	124.4	78.2	58.0	46.2	33.4	24.0	18.9
12HX100S	112.4	79.2	61.0	49.5	36.4	26.4	20.9
12HX135	152.9	97.0	72.8	58.6	42.7	30.8	24.3
12HX150	182.3	120.0	87.8	70.9	51.8	37.5	29.5
12HX205	247.5	154.2	111.0	87.6	62.3	44.0	34.4
12HX300	330.1	207.5	154.3	123.6	92.7	66.7	52.8
12HX330	377.0	242.8	183.2	148.5	108.7	78.3	61.7
12HX400	427.5	278.4	206.8	168.3	122.2	89.0	70.4
12HX505	550.6	383.3	282.1	223.7	160.3	114.3	89.6
12HX540	581.3	405.9	305.3	242.9	174.4	124.3	97.4

### Discharge Current (Amperes) to 1.60Vpc at 25°C/77°F

DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	437.7	291.0	212.8	169.4	122.1	87.22	68.58
12HX450+	511.3	339.7	248.3	197.7	142.4	101.7	79.96
12HX530+	565.3	400.2	300.0	241.0	175.3	126.1	99.45
12HX600+	643.8	453.6	339.6	272.6	198.1	142.4	112.2
12HX650F-FR+	695.3	479.9	360.6	292.2	215.1	156.5	124.5
12HX700F-FR+	725.6	525.3	400.5	319.2	230.9	165.6	130.6

DataSafe HX Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX25	29.1	17.1	12.4	9.77	6.96	4.98	3.89
12HX35	42.1	25.8	19.2	15.2	10.9	7.80	6.11
12HX50	66.2	39.5	29.1	23.2	16.8	11.9	9.26
12HX80	93.6	58.1	43.2	34.4	24.5	17.4	13.6
12HX105	127.4	78.6	58.0	46.2	33.4	24.0	18.9
12HX100S	116.2	80.4	61.1	49.5	36.4	26.4	20.9
12HX135	154.7	97.0	72.8	58.6	42.7	30.8	24.3
12HX150	187.7	120.7	87.8	70.9	51.8	37.5	29.5
12HX205	254.0	154.2	111.0	87.6	62.3	44.0	34.4
12HX300	335.5	207.5	154.3	123.6	92.7	66.7	52.8
12HX330	382.9	242.8	183.2	148.5	108.7	78.3	61.7
12HX400	433.9	278.4	206.8	168.3	122.2	89.0	70.4
12HX505	572.6	390.4	282.1	223.7	160.3	114.3	89.6
12HX540	603.5	413.9	305.3	242.9	174.4	124.3	97.4



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