

Battery Range Summary



As the cost of electrical energy continues to rise and as energy consumption in applications such as data centres continues to grow, energy efficiency has become a topic of rising interest and concern for the UPS industry.

Furthermore, the increasing awareness of the impact of energy consumption on the environment has put additional pressure on decision makers to develop genuine power management strategies and to invest in eco-friendly initiatives. As a result, reducing power usage through green initiatives has now become a critical objective for many UPS players who have tried to respond by developing higher efficiency power management systems in order to reduce energy losses and ultimately operating costs.

Features & Benefits

- **Wide Wpc range of front and top terminal monoblocs**
- **Specifically designed for high-rate discharge applications**
- **Excellent power density**
- **Long design life: 12+ years at 20°C**
- **Low energy consumption**
- **Low total cost of ownership**

EnerSys®, one of the world's largest industrial battery manufacturers and a leader in stored energy solutions, is proud to be doing its part by developing the most effective and innovative products for a wide range of applications. EnerSys' DataSafe® HX Plus range of Valve Regulated Lead Acid (VRLA) batteries can significantly contribute to helping customers ultimately achieve their business goals in mission-critical power back-up applications. Using proven and advanced Thin Plate Pure Lead Technology (TPPL), combined with the selection of high grade, high purity materials enables EnerSys to deliver products with outstanding features and benefits and ultimately excellent value for money.

Construction

- High performance positive plates designed for long life and efficient recharge
- Negative plates provide perfect balance with the positive plates to ensure optimum recombination efficiency
- Low resistance microporous absorbed glass mat (AGM) separator. The electrolyte is absorbed within this material, preventing acid leakage in case of accidental damage
- High grade dilute sulphuric acid absorbed into separator material
- Containers and lids in highly resistant ABS polymer.
UL94 V-0 flame retardant option available⁽¹⁾
- High integrity dual-seal terminal design to ensure leak-free operation
- Self-resealing, low pressure non-return valve prevents ingress of atmospheric oxygen, with flame-arresting vents

Installation & Operation

- Monoblocs are designed for installation in cabinets or on stands, close to the point of use. A separate battery room is not necessary
- It is recommended that DataSafe® HX+ monoblocs are installed on their base. Please consult your EnerSys representative about any other installation orientations
- Recommended float charge voltage: 2.29Vpc at 20°C/2.27Vpc at 25°C
- Up to 24 month shelf life (at 20°C)
- Low maintenance: no water addition required
- Operating temperature range: -30°C to +45°C

Standards

- Tested according to international standard IEC 60896-21 and compliant to defined requirements of IEC 60896-22
- Classified as “Very long life” (>12 years) according to Eurobat Guide
- UL recognised component
- Batteries must be installed in accordance with the IEC 62485-2 standard and local/national regulations
- Classified as non-spillable battery and approved as non-hazardous cargo for land, sea and air transportation in accordance with the requirements of ADR/RID, IMDG and IATA respectively
- The management systems governing the manufacture of DataSafe® HX+ products are ISO 9001, ISO 14001 and ISO 45001 certified

General Specifications

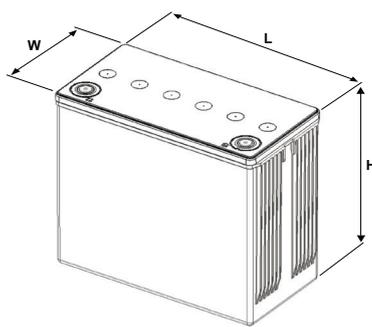
Battery Type ⁽¹⁾	Nominal Voltage (V)	Watts/Cell (Wpc)		Nominal Capacity (Ah)			Nominal Dimensions (mm)			Short Circuit Current (A) ⁽³⁾	Internal Resistance (mΩ) ⁽³⁾	Terminals
		15min to 1.67Vpc @ 25°C	C10 rate to 1.80Vpc @ 20°C	Length	Width	Overall Height ⁽²⁾	Typical Weight (kg)					
12HX385+	12	386	87	302	175	227	30.2	2447	4.10	M6 F		
12HX450+	12	450	101	302	175	227	32.5	2700	3.80	M6 F		
12HX530+	12	530	124	338	173	273	40.8	3500	3.50	M6 F		
12HX600+	12	601	139	338	173	273	43.2	3800	3.30	M6 F		
12HX650F-FR+	12	650	163	561	125	283	52.0	3679	3.43	M6 M		
12HX700F-FR+	12	701	169	561	125	316	59.6	3970	3.17	M6 M		

Note:

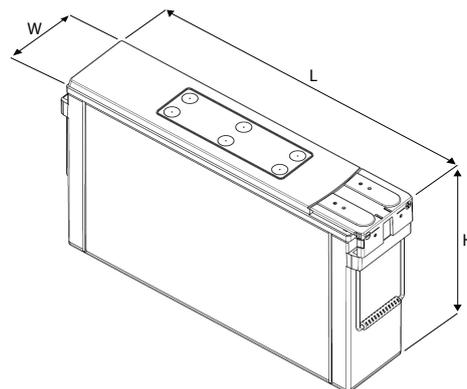
⁽¹⁾ Add “FR” prior to the “+” of the Battery Type for flame retardant versions, eg. “12HX385FR+”. Note, Front Terminal (F) monoblocs are only available as UL94-V0 flame retardant version.

⁽²⁾ Height includes terminal.

⁽³⁾ Figures obtained via IEC method.



12HX385+
12HX450+
12HX530+
12HX600+



12HX650F-FR+
12HX700F-FR+



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Battery Range Summary

The DataSafe® HX range of valve regulated lead acid batteries has been designed to offer superior solutions for the Uninterruptible Power Supply (UPS) and Information Technology markets. DataSafe HX batteries are the ideal source of power to protect vital systems and incorporates select design features that maximise reliability while ensuring superior performance and an excellent service life.

DataSafe HX batteries are designed using proven gas recombination technology that removes the need for regular water addition by controlling the evolution of hydrogen and oxygen during charging. The use of gas recombination technology for lead acid batteries has totally changed the concept of standby power. This technology provides the user with the freedom to use lead acid batteries in a wide range of applications.

Built on advanced electrochemistry and backed by over 100 years experience in battery technology and manufacture, DataSafe HX monoblocs have been specifically developed for high discharge rate applications.

Features and Benefits

- Specifically developed for UPS applications
- 6 & 12 volt monoblocs
- 23 to 780 Watts/cell sizes (15 min. rate to 1.67Vpc at 25°C)
- High power density
- Optimum footprint and volume efficiency
- Long design life
- Proven VRLA AGM technology



Construction

- Electrochemistry optimised for high rate discharge applications
- High performance positive plate grids designed to resist corrosion, prolong active life and for efficient recharge
- Negative plates provide perfect balance with the positive plates to ensure optimum recombination efficiency
- Separators in low resistance microporous glass fibre. The electrolyte is absorbed within this material, preventing acid leakage in case of accidental damage
- Containers and lids in highly resistant polymer
- Electrolyte - high grade dilute sulphuric acid absorbed into separator material

- High integrity terminals designed for maximum conductivity
- High integrity, leak-resistant post seal design for long life
- Self regulating pressure relief valves - prevent ingress of atmospheric oxygen

Installation & Operation

- Monoblocs are designed to be installed on their base. Consult your local EnerSys® representative before installing in any other orientation
- Recommended float charge voltage: 2.25 - 2.28Vpc at 25°C
- Operating temperature range: -20°C to +50°C (20°C - 25°C recommended)
- Up to six months shelf life

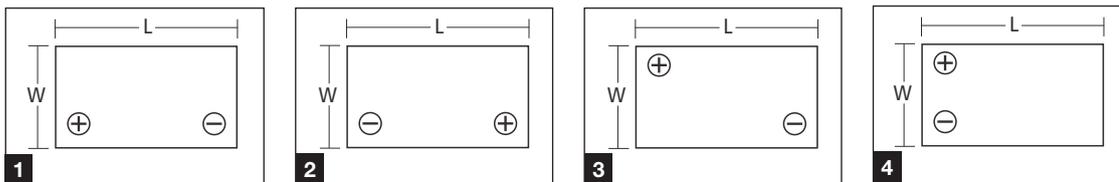
Standards

- UL listing: file numbers MH16464 for 12HX25 - 12HX150 and MH12544 for 12HX205 - 6HX800
- Classified as "Long Life" (> 10/12 years) according to Eurobat guide 2015
- Approved for shipping as non-hazardous, non-spillable - per IATA Special Provision A67 and 49 CFR
- The management system governing the manufacture of DataSafe® HX products is ISO 9001 certified

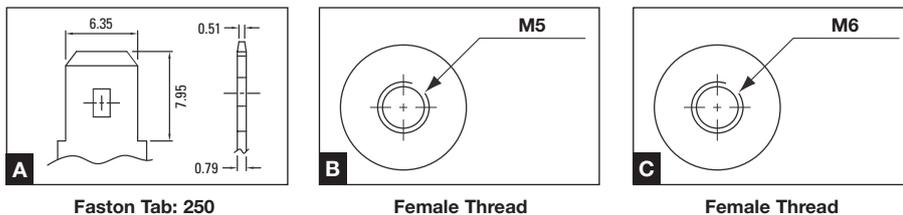
General Specifications

DataSafe® HX Battery Type	Nominal Voltage (V)	Watts/Cell (Wpc) 15min/1.67Vpc at 25°C	Nominal Capacity (Ah) C ₁₀ /1.80Vpc at 25°C	Nominal Dimensions (mm)			Typical Weight (kg)	Short Circuit Current (A)	Maximum Discharge Current (Amps-2 min rate)	Internal Resistance (mΩ)	Terminal Layout	Terminal Drawing
				Length	Width	Height						
12HX25	12	23	5.0	90	70	107	2.0	300	41	16.5	1	A
12HX35	12	36	7.0	151	65	100	2.8	500	62	13.2	4	A
6HX50	6	53	11	151	50	99	2.1	720	93	6.1	1	A
12HX50	12	53	11	152	99	99	4.1	720	93	12.2	4	A
12HX80	12	80	16	181	76	167	6.4	1000	140	8.5	2	B
12HX105	12	100	21	166	175	125	10.0	1500	171	7.1	2	B
12HX135	12	135	28	196	130	169	11.8	1800	238	5.6	1	B
12HX150	12	150	33	197	165	170	14.5	2400	277	5.0	2	C
12HX205	12	204	45	226	140	206	19.5	2775	439	4.5	1	C
12HX300	12	284	72	259	175	208	27.2	3175	503	3.9	1	C
12HX330	12	336	84	300	173	213	32.2	3700	586	3.4	1	C
12HX400	12	381	93	338	173	211	36.3	4225	670	3.0	1	C
12HX505	12	506	123	338	173	273	46.7	4510	913	2.8	1	C
12HX540	12	540	126	338	173	273	48.1	4775	961	2.6	1	C
6HX800	6	780	196	340	173	211	36.3	6200	1272	1.0	3	C

Terminal Layouts



Terminal Drawings



EnerSys®

Power/Full Solutions



data safe[®] HX PLUS data safe[®] 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

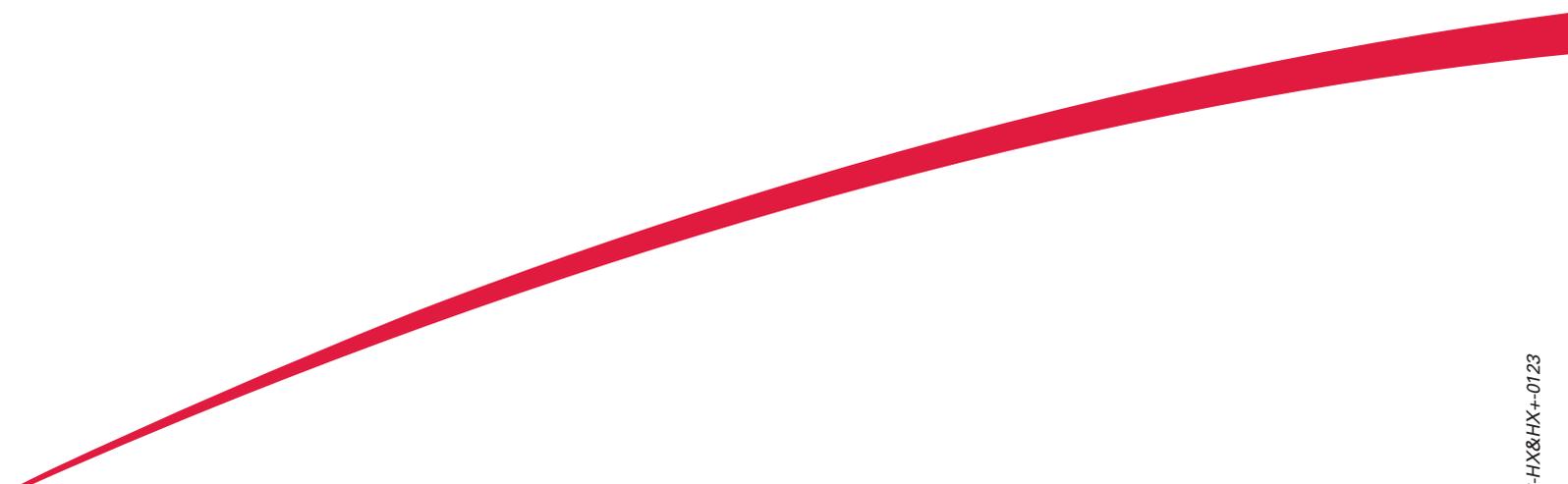
DataSafe HX+ Battery Type	Standby Time (Minutes)						
	5	10	15	20	30	45	60
12HX385+	423.3	287.6	212.8	169.4	122.1	87.22	68.58
12HX450+	494.4	335.7	248.3	197.7	142.4	101.7	79.96
12HX530+	545.4	393.2	300.0	241.0	175.3	126.1	99.45
12HX600+	620.7	446.1	339.6	272.6	198.1	142.4	112.2
12HX650F-FR+	678.0	477.5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