HRL Series

Rail Wayside Communications & Signaling Battery

Nickel-Cadmium

Power & Dependability

HBL

flexible solutions for

Your Communications & Signaling Needs

Advanced nickel-cadmium technology providing a complete

low maintenance solution

Rail C&S Solutions

HRL series 1.2 V cells are accessible in a range of capacities allowing you the flexibility to meet the voltage and DC power required of your

- Communications
- Signals
- Flashers
- Highway Grade Crossings
- Emergency Backup Power

Providing A More Affordable Option

Here at HBL we recognize that public safety, reliability, and systems performance are critical aspects of the railway industry. We also believe these principles should not coincide with a substantial cost to the user. ***HRL*** C&S batteries support railway companies ongoing initiatives to reduce their overall spend, while still maintaining these exceptional advantages.

- Long service life (20+ years float life @ 20°C)
- Ultra low maintenance
- Resistance to mechanical, environmental, and electrical extremes
- Operation in both hot & cold climactic regions
- Fast charging & optimal cycling
- Compatible with all charging equipment types

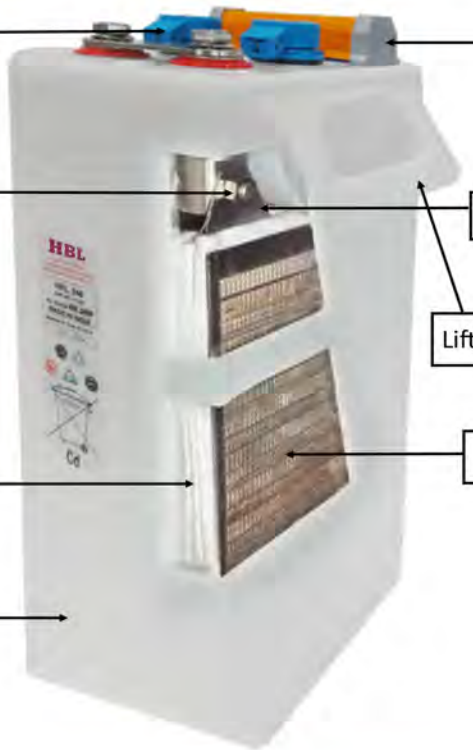
Quality At the Forefront

HBL is a worldwide leader in battery manufacturing with 35 years experience providing advanced nickel-cadmium and lead acid technologies. Our manufacturing facilities are certified to meet and exceed the standards set forth by ISO 9001 & 14001, OHSAS 18001 safety standards, and International Railway Industry Standard (IRIS). ***HRL*** cells comply to IEC 62259 standard.

Laying the Track to Success

Providing *cost-effective* reliable power when it's needed most by C&S systems

PERFECTING FUNCTIONALITY



Pocket Plate Design & Technology

- Flame-arresting vents
- Nickel-plated terminal posts
- Polypropylene container
- Double perforated steel strips
- Electrolyte and debris splash guards
- Polypropylene fibrous separator
- Alkaline electrolyte with potassium & lithium hydroxide additives

The active materials in our pocket plate batteries are encapsulated between folded steel strips that are perforated on both sides. This technology increases the surface area by 30% allowing a more effective utilization of the active materials, which in turn makes the battery more efficient. The pocket plates are separated by our special polypropylene fibrous separator which facilitates recombination.

HBL's pocket plate technology teamed up with our polypropylene cell container and separators not only allow for free flowing movement and visual inspection of the electrolyte; but also enhance the batteries ability to withstand shock, vibration, temperature extremes, and corrosion. Lids are fusion welded to the container body and outfitted with flame arresting vent caps to prevent explosions and simplify the process of topping up. Dependability, Safety, and Efficiency were the pioneering concepts behind the design of the ***HRL*** Rail Communications & Signaling battery, and the result... ***A more economical battery.***

Measuring up to the Competition

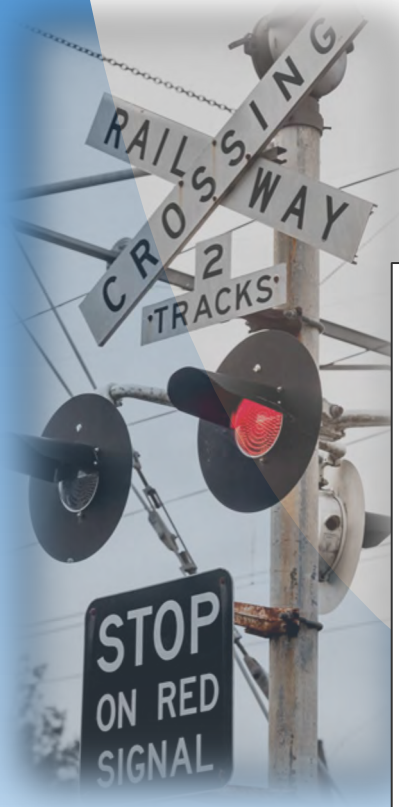
Cell Type	HRL Series							
	Dimensions						Weight	
	Length		Width		Height			
	mm	in.	mm	in.	mm	in.	kg	lbs
HRL 80	68	2.68	195	7.68	349	13.74	6.8	15
HRL 100	68	2.68	195	7.68	349	13.74	7.4	16.3
HRL 130	68	2.68	195	7.68	349	13.74	8	17.6
HRL 165	93	3.66	195	7.68	349	13.74	9.8	21.6
HRL 200	93	3.66	195	7.68	349	13.74	10.7	23.6
HRL 225	104	4.09	195	7.68	405	15.94	13.7	30.2
HRL 250	104	4.09	195	7.68	405	15.94	14.3	31.5
HRL 265	121	4.76	195	7.68	405	15.94	15.3	33.7
HRL 290	121	4.76	195	7.68	405	15.94	15.8	34.8
HRL 340	133	5.24	195	7.68	405	15.94	18	39.7
HRL 380	159	6.26	195	7.68	405	15.94	20.4	45
HRL 420	159	6.26	195	7.68	405	15.94	21.2	46.7

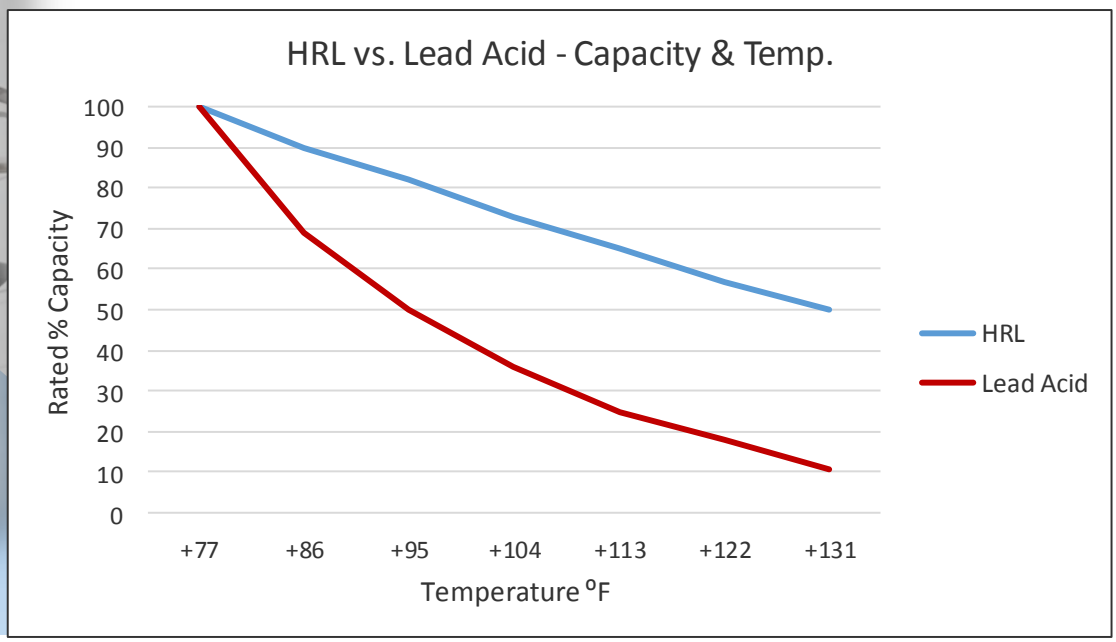
*Dimensions and weights are estimates and subject to change

Standing up to the Heat

Trackside equipment is not always found in the most accommodating environments. It is for that reason the ***HRL*** series is designed and equipped to withstand the harsh environments these batteries are exposed to. Nickel-Cadmium pocket plate batteries are the most dependable and rugged battery type available on the market with a normal operating temperature of -20°C to +40°C and capable of extremes up to -40°C to +55°C.

HRL batteries lose only 20% of their 20 year service life for every 18°F rise in temperature, whereas the typical lead acid battery loses 50% of its life. The combination of flooded electrolyte with a vented design assists in proper thermal management more effectively than the absorbed electrolyte concept in VRLA batteries; thus preventing negative affects such as “sudden death” failure, thermal runaway, and cell dry out seen in the VRLA battery types.





Available Current After Prolonged Float Charging

Available Amperes at + 20°C +/- 5°C (+68°F +/- 9°F) — **Final Voltage 1.00 V / Cell**

Cell type		Hours					Minutes								Seconds		
	C5 Ah	10	8	5	3	2	90	60	30	20	15	10	5	1	30	5	1
HRL 80	80	8.16	10.1	16.0	25.8	35.3	44.0	54.7	61.9	65.6	68.5	71.2	76.0	86.5	91.0	104	115
HRL 100	100	10.2	12.6	20.0	32.3	44.1	55.0	68.4	77.7	82.3	85.4	89.2	95.4	108	114	129	145
HRL 130	130	13.3	16.4	26.0	42.0	57.3	71.5	88.9	101	107	111	116	124	141	148	168	188
HRL 165	165	16.8	20.8	33.0	53.3	72.8	90.8	113	128	135	141	147	157	178	188	214	238
HRL 200	200	20.4	25.2	40.0	64.6	88.2	110	137	155	164	171	178	190	216	228	259	288
HRL 225	225	22.9	28.4	45.0	72.7	99.0	122	150	171	181	189	196	210	236	248	277	304
HRL 250	250	25.5	31.5	50.0	80.8	110	135	167	190	201	210	218	233	262	276	308	338
HRL 265	265	27.0	33.4	53.0	85.6	117	143	177	201	213	222	230	247	278	293	326	358
HRL 290	290	29.6	36.5	58.0	93.7	128	157	194	220	233	243	252	270	304	321	357	392
HRL 340	340	34.7	42.8	68.0	110	150	184	227	258	273	285	296	316	356	376	418	460
HRL 380	380	38.8	47.9	76.0	123	168	205	254	289	306	319	331	353	398	420	467	514
HRL 420	420	42.8	52.9	84.0	136	185	227	280	319	338	352	365	391	440	464	517	568

Available Amperes at + 20°C +/- 5°C (+68°F +/- 9°F) — **Final Voltage 1.05 V / Cell**

Cell type		Hours					Minutes								Seconds		
	C5 Ah	10	8	5	3	2	90	60	30	20	15	10	5	1	30	5	1
HRL 80	80	8.08	10.0	15.8	23.1	31.0	37.6	43.4	51.4	54.0	56.1	58.4	62.4	72.0	77.1	87.2	95.5
HRL 100	100	10.1	12.5	19.8	28.9	38.8	47.0	54.2	64.2	67.5	70.1	73.0	77.7	90	96.2	109	119
HRL 130	130	13.1	16.3	25.7	37.6	50.4	61.1	70.5	83.5	87.8	91.1	94.9	101	117	125	142	155
HRL 165	165	16.7	20.6	32.7	47.7	64.0	77.6	89.5	106	111	116	120	129	149	159	180	197
HRL 200	200	20.2	25.0	39.6	57.8	77.6	94	108	128	135	140	146	156	180	193	218	239
HRL 225	225	22.8	28.2	44.6	65.1	87.3	104	121	141	149	153	160	171	198	210	237	257
HRL 250	250	25.3	31.3	49.5	72.3	97	116	134	157	165	170	178	190	220	233	263	286
HRL 265	265	26.8	33.2	52.8	76.6	103	122	142	166	175	180	188	201	233	247	279	303
HRL 290	290	29.3	36.3	57.4	83.8	113	134	155	182	191	197	206	220	255	270	305	332
HRL 340	340	34.3	42.5	67.3	98.3	132	157	182	214	224	231	241	258	299	317	357	389
HRL 380	380	38.4	47.5	75.2	110	147	176	203	239	251	258	270	289	334	354	399	434
HRL 420	420	42.4	52.5	83.2	121	163	194	224	264	277	285	298	319	370	392	441	480

Available Amperes at + 20°C +/- 5°C (+68°F +/- 9°F) — **Final Voltage 1.10 V / Cell**

Cell type		Hours					Minutes								Seconds		
	C5 Ah	10	8	5	3	2	90	60	30	20	15	10	5	1	30	5	1
HRL 80	80	7.68	9.5	14.0	20.5	27.3	31.2	35.8	40.0	42.0	44.4	46.8	50.8	58.4	61.2	67.2	72.4
HRL 100	100	9.6	11.9	17.5	25.6	34.1	39.0	44.7	50.1	52.5	55.5	58.5	63.5	73	76.5	83.8	90.8
HRL 130	130	12.5	15.5	22.8	33.3	44.3	50.7	58.1	65.1	68.3	72.2	76.1	82.6	94.9	99.5	109	118
HRL 165	165	15.8	19.6	28.9	42.2	56.3	64.6	73.8	82.6	86.6	91.6	96.5	105	120	126	139	149
HRL 200	200	19.2	23.8	35.0	51.2	68.2	78	89.4	100	105	111	117	127	146	153	168	181
HRL 225	225	21.6	26.8	39.4	57.6	76.3	86.7	99	111	117	122	130	140	162	167	176	182
HRL 250	250	24.0	29.8	43.8	64.0	84.8	96.3	110	123	130	136	144	156	180	186	195	201
HRL 265	265	25.4	31.5	46.4	67.8	89.8	102	116	131	137	144	153	165	191	197	207	213
HRL 290	290	27.8	34.5	50.8	74.2	98.3	112	127	143	150	158	167	181	209	216	226	233
HRL 340	340	32.6	40.5	59.5	87	115	131	149	168	176	185	196	213	245	253	265	273
HRL 380	380	36.5	45.2	66.5	97.3	129	146	167	187	197	207	219	238	274	283	296	306
HRL 420	420	40.3	50.0	73.5	108	142	162	184	207	218	229	242	263	302	313	328	338

Available Amperes at + 20°C +/- 5°C (+68°F +/- 9°F) — **Final Voltage 1.14 V / Cell**

Cell type		Hours					Minutes								Seconds		
	C5 Ah	10	8	5	3	2	90	60	30	20	15	10	5	1	30	5	1
HRL 80	80	7.20	9.0	12.1	18.1	22.7	22.8	24.4	27.8	30.0	31.7	33.6	36.8	43.5	45.8	52.8	58.9
HRL 100	100	9.0	11.2	15.1	22.6	28.4	28.5	30.5	34.8	37.5	39.7	42.0	46.0	54.4	57.2	66	73.6
HRL 130	130	11.7	14.6	19.6	29.4	36.9	37.1	39.7	45.2	48.8	51.6	54.6	59.8	70.7	74.3	85.8	95.7
HRL 165	165	14.9	18.5	24.9	37.3	46.9	47.0	50.4	57.4	61.9	65.5	69.3	75.9	89.7	94.4	109	121
HRL 200	200	18.0	22.4	30.2	45.2	56.8	57	61.1	69.5	75	79.3	84	92	109	114	132	147
HRL 225	225	20.3	25.2	34.0	50.9	63.3	64.2	68.7	77	82.8	86.9	92.7	102	119	126	140	148
HRL 250	250	22.5	28.0	37.8	56.5	70.3	71.3	76.3	85.5	92	96.5	103	113	132	140	155	163
HRL 265	265	23.9	29.7	40.0	59.9	74.5	75.6	80.9	90.6	97.8	102	109	120	140	148	164	173
HRL 290	290	26.1	32.5	43.8	65.5	81.5	82.7	88.5	99.2	107	112	119	131	153	162	180	189
HRL 340	340	30.6	38.1	51.3	76.8	95.5	96.9	104	116	125	131	139	153	180	190	211	221
HRL 380	380	34.2	42.6	57.4	85.9	107	108	116	130	140	147	156	171	201	213	236	247
HRL 420	420	37.8	47.0	63.4	94.9	118	120	128	144	155	162	172	189	222	235	260	273

HBL®

HBL Power Systems Limited

8-2-601, Road No.10, Banjara Hills, Hyderabad - 500034, Telangana, INDIA ,

contact@hbl.in, website : www.hbl.in