

Illustrative render generated from published specifications

18.3 × 65 mm

Hitachi Maxell
(HM)
ICR18650PA



Live page & updates

Hitachi Maxell (HM) · released 2008

18650 ICR

1,450 mAh CAPACITY	20 A RATED CONTINUOUS	4.2 V NOMINAL · 2.5 – 3.7 V	6.09 Wh ENERGY
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REFERENCE ONLY — NOT AN OFFICIAL DOCUMENT

This information is gathered from multiple sources, including manufacturer datasheets, independent third-party testing, and community contributions. Cell specifications vary between production batches and change over time, and no figure here is guaranteed to be correct or current. **Always consult the manufacturer's spec sheet directly.** Use this sheet for reference only — never as the sole basis for a safety-critical decision about charging, discharging, or assembling cells. The cell image is an illustrative render generated from published specifications, not a photograph.

CAPACITY AMONG 18650S #159 of 169 Lowest in database Highest Higher discharge than 91% of 18650 cells in our database. Great for high-drain builds.	VOLTAGE OPERATING WINDOW 1.2 V usable Cutoff 2.5 V Nominal 4.2 V Max 3.7 V Below nominal the cell sags fast under load; above it, the last of the capacity fills slowly on the constant-voltage taper.
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APPLICATION SUITABILITY

Rule-of-thumb ratings from this cell's capacity and continuous discharge. Check your own load before committing.

Powerwalls	Too low capacity for practical powerwall use. You'd need too many cells.
Ebike packs	Not enough discharge for ebike use. Voltage sag would be a problem under load.
Car audio	Enough discharge to handle amplifier bursts without voltage sag.
High-drain vaping	Below the 25A Mooch CDR threshold that high-drain vaping needs. Use a higher-drain cell.
Flashlights	Lower capacity means shorter runtime. Better cells are available for flashlight use.
Power tools	May work for lighter-duty tools. Check your tool's current requirements.

IDENTITY		PHYSICAL		
Manufacturer	Hitachi Maxell (HM)	Diameter	18.3 mm	
Model	ICR18650PA	Length	65 mm	
Format	18650	ELECTRICAL		
Chemistry	ICR			
Year released	2008			
Wrap colour	Blue (Dark)			
Insulator	Black			
Terminal	Flat top			
Protection	Unprotected			
OPERATING TEMPERATURE		Rated capacity		1,450 mAh
Charging	0°C to 45°C	Nominal voltage		4.2 V
Discharging	-20°C to 60°C	Max charge voltage		3.7 V
ENERGY & POWER DENSITY		Discharge cutoff		2.5 V
		Energy		6.09 Wh
		Max continuous discharge		20 A (datasheet)
		Discharge C-rate		13.8C
		Standard charge current		1,000 mA
		Typical charge time		1.5 h
		Standard discharge		290mA
Energy		6.09 Wh		
Volumetric density		356.21 Wh/L		
Power density (volume)		4,913 W/L		
Capacity ranking		#159 of 169 18650s		
C-RATE CONVERSION · 1,450 MAH				
C-RATE	CURRENT	THEORETICAL RUNTIME		
0.2C	0.29 A	5h 00m		
0.5C	0.73 A	2h 00m		
1C	1.45 A	1h 00m		
2C	2.9 A	30m		
3C	4.35 A	20m		
5C	7.25 A	12m		
8C	11.6 A	7m 30s		

10C

14.5 A

6m

Highlighted row is closest to the rated 20 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	725 mA	~2h 00m
Standard	1,000 mA	~1h 27m
1C	1,450 mA	~1h 00m

Constant-current phase only. Real charge time runs longer because of the constant-voltage taper at the end.

SERIES PACK CONFIGURATIONS

Voltages calculated from this cell's own nominal and maximum charge voltage. The 3P columns show one common parallel count as a worked example — scale the parallel group to the capacity you need.

SERIES	NOMINAL	FULLY CHARGED	CELLS AT 3P	CAPACITY	ENERGY
3S	12.6 V	11.1 V	9	4.4 Ah	55 Wh
7S	29.4 V	25.9 V	21	4.4 Ah	128 Wh
10S	42 V	37 V	30	4.4 Ah	183 Wh
13S	54.6 V	48.1 V	39	4.4 Ah	238 Wh
14S	58.8 V	51.8 V	42	4.4 Ah	256 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 29.4 V 2,900 mAh · 85 Wh 40 A max	13S4P 48V ebike standard 52 cells · 54.6 V 5,800 mAh · 317 Wh 80 A max	16S4P DIY powerwall 64 cells · 67.2 V 5,800 mAh · 390 Wh 80 A max	4S6P Power tool replacement 24 cells · 16.8 V 8,700 mAh · 146 Wh 120 A max
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HANDLING & SAFETY

- Never charge above 3.7V or discharge below 2.5V.
- Store cells at around 3.6-3.8V (roughly 40-60% charge) for long-term storage.
- Don't mix cells with different capacities, chemistries, or states of charge in a pack.
- Inspect wraps before use. A torn wrap can cause a short circuit.
- Always use a BMS or balance charger appropriate for your pack configuration.

- Keep cells away from metal objects, keys, and coins. A short across the terminals can cause fire.

SOURCES & FURTHER READING

Cell Savors page	cellsaviors.com/cell-database/hitachi-maxell-hm-icr18650pa
Full cell database	cellsaviors.com/cell-database