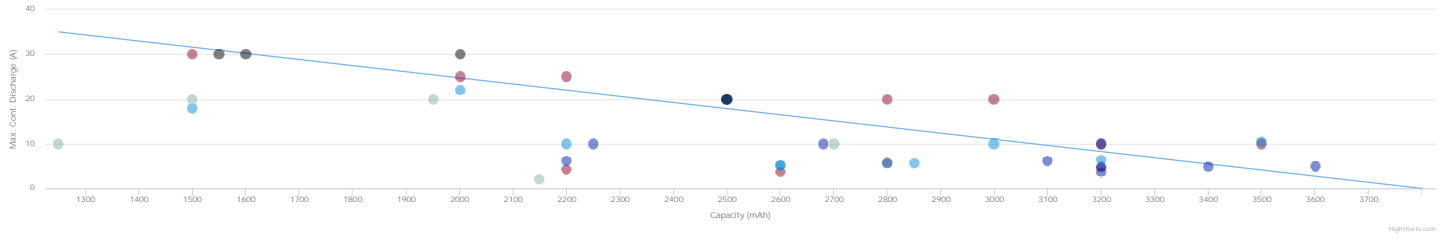


Capacity (mAh) Versus Max. Cont. Discharge (A)
Battery Comparison



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Last Updated Feb, 2016

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Brand	Model	Chemistry	Capacity (mAh)	Max. Cont. Discharge (A)	Year	Weight (g)	Height (mm)	Width (mm)	Spec	Buy
Panasonic	NCR18650G	NCR	3600	5						
LG	LG18650MJ1	INR	3500	10		49				Ⓢ (http://batterybro.com/products/lg-chem-18650-mj1)
Samsung	ICR18650-35E	INR	3500	10.5						
Panasonic	NCR18650B	NCR	3400	4.87	2012				🔗 (http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-ncr-18650-B)	Ⓢ (http://batterybro.com/products/panasonic-ncr18650b-2)
LG	INR18650MH1	INR	3200	10						
LG	ICR18650E1	ICR	3200	4.65						Ⓢ (http://batterybro.com/products/lg-chem-icr-18650-e1)
Panasonic	NCR18650BD	NCR	3200	10						Ⓢ (http://batterybro.com/products/panasonic-ncr18650bd)
Panasonic	NCR18650BF	NCR	3200	4.87		46.5	65.3	18.5	🔗 (http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-ncr-18650-bf)	Ⓢ (http://batterybro.com/products/panasonic-ncr18650bf)
Panasonic	NCR18650BE	NCR	3200	3.63						Ⓢ (http://batterybro.com/products/panasonic-ncr)
Samsung	ICR18650-32A	ICR	3200	6.4						Ⓢ (http://batterybro.com/products/samsung-18650-32a)
Panasonic	NCR18650A	NCR	3100	6.2	2010		65.2	18.6	(https://cdn.shopify.com/s/files/1/0674/3651/files/Panasonic_NCR18650A.pdf?830)	Ⓢ (http://batterybro.com/products/panasonic-ncr18650a)
LG	INR18650HG2	INR	3000	20	2015	45	65.1	18.5		
Samsung	ICR18650-30B	ICR	3000	10						
Samsung	INR18650-29E	INR	2850	5.7	2012	48	65.02	18.4	🔗 (http://www.batterybro.com/best-18650-battery/spec-sheet/samsung-inr-18650-29E)	
LG	ICR18650DBC2	ICR	2800	20						
LG	ICR18650D1	ICR	2800	5.8						
Samsung	ICR18650-28	ICR	2800	5.6						
Sanyo	NCR18650P	NCR	2700	10	2013	47			🔗 (http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-ncr-18650-P)	
Panasonic	NCR18650PF	NCR	2680	10	2012	46.5	65.3	18.5	🔗 (http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-ncr-18650-pf)	
LG	ICR18650B4	ICR	2600	3.75						

Brand	Model	Chemistry	Capacity (mAh) -	Max. Cont. Discharge (A)	Year	Weight (g)	Height (mm)	Width (mm)	Spec	Buy
Samsung	ICR18650-26FM	ICR	2600	5.2	2012				(https://cdn.shopify.com/s/files/1/0674/3651/files/Samsung_ICR18650-26FM.pdf?833)	
Samsung	ICR18650-26H	ICR	2600	5.2	2013	45	65	18.4	(http://www.batterybro.com/best-18650-battery/spec-sheet/samsung-icr-18650-26H)	
LG	ICR18650HE2	ICR	2500	20	2013	48	65.2	18.5	(http://www.batterybro.com/best-18650-battery/spec-sheet/LG-icr-18650-he2)	(http://batterybro.com/products/lg-chem-18650-he2)
LG	ICR18650HE4	ICR	2500	20	2013	47	65.2	18.5	(http://www.batterybro.com/best-18650-battery/spec-sheet/LG-icr-18650-HE4)	(http://batterybro.com/products/lg-chem-18650-he4)
Samsung	INR18650-25R5	INR	2500	20	2015	45	65.85	18.33		(http://batterybro.com/products/samsung-inr18650-25r5)
Samsung	INR18650-25R	INR	2500	20	2013	45	64.85	18.33	(http://www.batterybro.com/best-18650-battery/spec-sheet/samsung-18650-25r)	(http://batterybro.com/products/samsung-inr18650-25r)
Sony	US18650VTC5	NMC	2500	20	2013	44.3	65.2	18.35	(http://www.batterybro.com/best-18650-battery/spec-sheet/sony-vtc5)	
Panasonic	NCR18650CH	NCR	2250	10						
LG	ICR18650MF	ICR	2200	20						
LG	ICR18650S3	ICR	2200	4.3						
Panasonic	NCR18650CG	NCR	2200	6.2						
Samsung	ICR18650-22P	ICR	2200	10						
GP	GP1865T220		2150	2.1		44	65.5	18.5	(https://cdn.shopify.com/s/files/1/0674/3651/files/GP_Battery.PDF?845)	
LG	ICR18650HD2C	ICR	2100	25	2014	48	65.2	18.5	(https://batterybro.com/best-18650-battery/spec-sheet/LG-18650-HD2C)	(https://batterybro.com/products/lg-chem-18650-hd2)
LG	ICR18650HD2	ICR	2000	25	2012	48	65.2	18.5	(https://batterybro.com/best-18650-battery/spec-sheet/LG-icr-18650-hd2)	(https://batterybro.com/products/lg-chem-18650-hd2)
Samsung	INR18650-20R	INR	2000	22						(http://batterybro.com/products/samsung-18650-20r)
Sony	US18650VTC4	NMC	2000	30	2012				(http://www.batterybro.com/best-18650-battery/spec-sheet/sony-vtc4)	
Sanyo	UR18650-RX		1950	20	2011	44.3	64.8	18.1	(http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-18650-RX)	
Sony	US18650VTC3	LMO	1600	30					(http://www.batterybro.com/best-18650-battery/spec-sheet/sony-vtc3)	
Sony	US18650VTC2		1550	30	2012				(http://www.batterybro.com/best-18650-battery/spec-sheet/sony-vtc2)	
LG	ICR18650HB2	ICR	1500	30	2010	48	65.2	18.4	(http://www.batterybro.com/best-18650-battery/spec-sheet/icr-18650-hb2)	(http://batterybro.com/collections/all/products/lg-chem-18650-hb2)
MNKE	IMR18650	IMR	1500	20						
Samsung	INR18650-15Q	INR	1500	18						(http://batterybro.com/products/samsung-18650-15q)
Sanyo	UR18650SA		1250	10		44.3	64.8	18.1	(http://www.batterybro.com/best-18650-battery/spec-sheet/panasonic-ur-18650-SA)	

What is the best 18650 battery?

The best battery depends on your application. A high capacity rating (http://batteryuniversity.com/learn/article/how_to_calculate_battery_capacity) is good for long duration applications like in electric vehicles and flashlights. On the other hand, a high discharge rating (http://batteryuniversity.com/learn/article/discharge_methods) is good for high power applications like in vaporizers and power-tools.

Sometimes the size of your batteries are important when building a pack or fitting them inside of a device. Weight is a good way to quickly check whether your batteries are authentic. Chemistry (http://batteryuniversity.com/learn/article/explaining_lithium_ion_chemistries) will tell you how safe the battery is, and what kind of protection circuitry you will need if any. Panasonic is the market leader, but Samsung, Sony, and LG all produce very high-quality cells.

What is the best battery for vapes and mods?

In our expert opinion the best battery for vapes and mods is the Samsung 25R (https://cdn.shopify.com/s/files/1/0674/3651/files/Samsung_INR18650-25R.pdf?835). It has a great balance of capacity (2500 mAh) and power (20A max. continuous discharge). It has a proven track record and is considered safe to use in high pulse applications.

Are any 18650 batteries rated higher than 30A?

No. The highest continuous discharge rating for any 18650 battery is 30A. Some companies claim higher ratings like 40A or 60A. These are however based purely on pulse discharge ratings or fabricated out of thin air.

Also note that pulse ratings are completely meaningless without noting their duration. The Samsung 25R for example has the following pulse specifications when written *correctly*: The 25R can safely be discharged at a continuous 20A (amps). Pulse discharge levels are [95A - .5 sec, 65A - 1 sec, 40A - 5 sec, 30A - 6 sec].

What is a rewrapped battery?

An 18650 battery is a set of chemicals inside a protective steel case. Then PVC shrink wrap is applied over the steel case, which gives the 18650 its color. Some companies buy cells from large manufacturers like Panasonic, and rewrap it with their own custom-branded PVC tube. The following companies rewrap cells:

- Efest
- Vamped
- Keppower
- AW
- Ultrafire
- Trustfire
- Orbtronic
- EH
- GTL
- Robiton
- Imren
- MXJO
- Nitecore
- AWT
- EagleTac
- AmpMax
- Basen
- BattEnergy
- EnerPower
- Fenix
- Intl-outdoor
- Redilast
- Xtar

Rewrapped cells can be used for good or for evil. Some companies add value by providing quality control or adding protective circuitry when needed. However the darker side is it opens the doors for deception - exaggerated or completely fabricated battery specifications.

More Resources

Here are some of the best 18650 battery resources on the web:

- Candlepower Forums - Batteries (<http://www.candlepowerforums.com/vb/forumdisplay.php?9-Flashlight-Electronics-Batteries-Included>) is the best place on the internet to discuss 18650 batteries.
- Lygte Battery and Charger Reviews (<http://www.lygte-info.dk/info/indexBatteriesAndChargers%20UK.html>) creates the best, most comprehensive 18650 reviews.
- Battery University (<http://www.batteryuniversity.com>) is the internet authority on lithium ion cells and batteries in general.
- Steam Engine - Battery drain (<http://www.steam-engine.org/batt.asp>) is an excellent free tool to calculate battery drain on mods and vapes.
- Dampfakkus.de (http://www.dampfakkus.de/akku_liste-nach-groesse.php?size=18650) It's German, but it's an essential 18650 list - it even has rewrapped cells.
- Tests by Mooch (<https://www.e-cigarette-forum.com/forum/blog-entry/list-of-battery-tests.7436/>) A blog dedicated to testing and comparing vape cells

What is an 18650 battery?

Most people are familiar with the A, AA, and AAA battery sizes, but have never heard of an 18650. Manufacturers that produce lithium ion cells have a special battery called the 18650, named after its size as it is 18 mm wide and 65 mm tall. The nominal voltage is more than twice that of AA cells - at 3.6V each.



Lithium-ion

Lithium-ion is the battery chemistry with the most potential and fastest growth. Out of all metals, lithium provides the largest energy density for weight.



Commodity cell

The 18650 is the most economical of all li-ion cells. Standardization from the laptop and electric vehicle industries continues to drive the price down.



Low maintenance

Li-ion is a truly low maintenance battery that has no memory, requires no scheduled cycling, and has a very low self-discharge rate.



Rechargeable

Lithium ion is part of a new generation of rechargeable batteries that has been in development and improving since the 1990s.



Research & Development

Researchers are constantly improving lithium ion cells. New chemical combinations are introduced bi-annually and progress is made quickly.



Very high current applications

Specialty applications like vaporizers and power-tools have created a line of batteries with very high amperage discharge ratings.