

IDEAL FOR LESS COMPLEX AND COST-SENSITIVE APPLICATIONS



SUITABLE FOR NEARLY EVERY APPLICATION

HIGH QUALITY AND RELIABILITY

GOOD BALANCE IN TERMS OF CAPACITY AND LIFETIME

EXCELLENT DISCHARGE CHARACTERISTICS

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HIGH TEMPERATURE & LONG-LIFE TYPE

(H) TYPE

The expected life of these back-up batteries is about 6 to 10 years and therefore approximately twice the lifetime compared to standard Ni-MH batteries. In addition they are capable of delivering excellent charge characteristics at high temperature (60°C). Recommended applications are for example emergency light, vending machines and back-up for base station.

FEATURES

- High charge efficiency at elevated temperatures
- Small size and light weight
- Long lifetime when using intermittent charge
- Most suitable for exchanging with Nickel-Cadmium batteries*¹
- Long-life and excellent charging performance at 75°C*¹

APPLICATIONS

- Emergency call (E-Call)
- Medical equipment
- Emergency lighting
- Ticketing machine
- POS system
- Solar window shutter
- Shaver
- Guidance light*²
- LED light*², etc.

MODEL NUMBER (EXAMPLE)

BK - 60 A A A H

				High temperature & long-life type
				Diameter: AAA, AA, A
				Multiply this by 10 to obtain the rated capacity (some exceptions)
				Nickel-Metal-Hydride battery

	Model number	Old model number	Dia-meter	Size	Nominal voltage [V]	Nominal capacity [mAh]	Typical capacity [mAh]	Diameter (mm)	Total height (mm)	Weight (g)	IEC
	BK-60AAAH	HHR-60AAAH	AAA	AAA	1.2	500	550	10.5 +0/-0.7	44.5 +0/-1.5	13	HR11/45
NEW	BK-60AAAHU*¹	-	AAA	AAA	1.2	500	550	10.5 +0/-0.7	44.5 +0/-1.5	13	HR11/45
	BK-70AAH	HHR-70AAH	AA	AA	1.2	700	750	14.5 +0/-0.7	49.0 +0/-1.5	18	HR15/49
NEW	BK-110AAH	-	AA	AA	1.2	1,100	1,180	14.5 +0/-0.7	50.5 +0/-1.0	26	HR15/51
NEW	BK-120AAHU*¹	-	AA	AA	1.2	1,200	1,280	14.5 +0/-0.7	50.5 +0/-1.5	23	HR15/51
NEW	BK-150AAH	-	AA	AA	1.2	1,450	1,530	14.5 +0/-0.7	50.5 +0/-1.0	26	HR15/51
	BK-160AH	-	A	4/5A	1.2	1,600	1,720	17.0 +0/-0.7	43.0 +0/-1.5	29	HR17/43
	BK-210AH	HHR-210AH	A	A	1.2	1,900	2,050	17.0 +0/-0.7	50.0 +0/-2.0	36	HR17/50
	BK-370AH	HHR-370AH	A	LFat/A	1.2	3,500	3,700	18.2 +0/-0.7	67.5 +0/-1.5	60	-



HIGH RATE DISCHARGE & HIGH TEMPERATURE TYPE

(PH) TYPE

These state-of-the-art back-up batteries deliver excellent current discharge characteristics at high temperature (60°C). They are able to power applications such as back-up for UPS, POS systems and solar window shutter.

FEATURES

- Excellent large current discharge characteristics at 60°C
- Small size and light weight
- Energy saving
- Making large discharging current possible, long-life and excellent charging performance at 75°C*¹

APPLICATIONS

- Medical equipment
- Power tool
- Garden tool
- Robot cleaner
- Electric vehicle
- Motive power*³
- Elevator*³
- Emergency light*³, etc.

*¹ New back-up type which can be operated at high ambient temperatures up to 75 °C. Not in mass production yet.

*² New back-up battery types BK-60AAAHU and BK-120AAHU are particular designed to power this application.

*³ New back-up battery types BK-220SCHU and BK-310CHU are particular designed to power this application.

MODEL NUMBER (EXAMPLE)

B K - 330 A P H

			High rate discharge & high temperature type
			Diameter: A, SC, C
			Multiply this by 10 to obtain the rated capacity (some exceptions)
			Nickel-Metal-Hydride battery

	Model number	Old model number	Dia- meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
	BK-330APH	HHR-330APH	A	LFat/A	1.2	3,200	3,300	18.2 +0/-0.7	67.5 +0/-1.5	60	-
NEW	BK-220SCHU*1	-	SC	SC	1.2	2,200	2,400	23.0 +0/-1.0	43.0 +0/-1.5	55	HR23/43
	BK-250SCH	HHR-250SCH	SC	SC	1.2	2,500	2,650	23.0 +0/-1.0	43.0 +0/-1.5	55	HR23/43
	BK-310CH	-	C	C	1.2	3,100	3,300	25.8 +0/-1.0	50.0 +0/-2.0	80	HR26/50
NEW	BK-310CHU*1	-	C	C	1.2	3,100	3,300	25.8 +0/-1.0	50.0 +0/-2.0	80	HR26/50



BUTTON TOP TYPE

B TYPE

The Panasonic button type batteries are compatible with dry batteries such as Alkaline and can be used up to 1,800 times based on JIS standards. Besides they provide a high capacity level and a low self-discharge. Last but not least they can power applications which require superior low temperature characteristics.

FEATURES

- Offers long charge / discharge cycle life, about 1,800 times
- High capacity level and low self-discharge
(still have 90% capacity after storage for 1 year)
- Offers excellent temperature characteristics especially in low temperature

APPLICATIONS

- Flash light
- Personal digital assistant
- Toothbrush
- Shaver
- Remote control, etc.

MODEL NUMBER (EXAMPLE)

B K - 80 A A A B

			Cap shape: button top type
			Diameter: AAA, AA
			Multiply this by 10 to obtain the rated capacity (some exceptions)
			Nickel-Metal-Hydride battery

	Model number	Old model number	Dia- meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
	BK-65AAAB*2	-	AAA	AAA	1.2	650	700	10.5 +0/-0.7	44.5 +0/-1.0	12	HR11/45
	BK-80AAAB*2	HHR-80AAAB	AAA	AAA	1.2	750	780	10.5 +0/-0.7	44.5 +0/-1.0	13	HR11/45
	BK-110AAB*3	HHR-110AAB	AA	AA	1.2	1,000	1,050	14.5 +0/-0.7	50.5 +0/-1.0	20	HR15/51
	BK-200AAB*3	-	AA	AA	1.2	1,900	2,000	14.5 +0/-0.7	50.5 +0/-1.0	29	HR15/51

*1 New back-up type which can be operated at high ambient temperatures up to 75 °C. Not in mass production yet.

*2 Compatible with consumer AAA size. *3 Compatible with consumer AA size.



STANDARD TYPE

(N) TYPE

Ni-MH battery technology is nowadays the Ni-Cd (Nickel-Cadmium) successor technology for rechargeable and portable devices. These batteries are ideal for less complex and cost sensitive applications. For example medical equipment and distance meter.

FEATURES

- High quality and reliability
- Good balance in terms of capacity and lifetime

MODEL NUMBER (EXAMPLE)

B K - 7 0 A A

Diameter: AAA, AA, A
Multiply this by 10 to obtain the rated capacity (some exceptions)
Nickel-Metal-Hydride battery

APPLICATIONS

- Medical
- Communication
- Shaver
- Toothbrush
- Navigation device
- Torchlight
- Measurement, etc.

Model number	Old model number	Dia-meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
BK-65AAAK	HHR-65AAAK	AAA	AAA	1.2	650	700	10.5 +0/-0.7	44.5 +0/-1.5	12	HR11/45
BK-70AAAJ	HHR-70AAAJ	AAA	AAA	1.2	700	730	10.5 +0/-0.7	44.5 +0/-1.5	12	HR11/45
BK-90AAA	-	AAA	L-AAA	1.2	830	880	10.5 +0/-0.7	50.5 +0/-1.5	14	HR11/67
BK-120AA	HHR-120AA	AA	4/5AA	1.2	1,150	1,220	14.5 +0/-0.7	43.0 +0/-1.5	23	HR15/43
BK-70AA	HHR-70AA	AA	AA	1.2	700	780	14.5 +0/-0.7	49.0 +0/-1.5	18	HR15/49
BK-110AAO	HHR-110AAO	AA	AA	1.2	1,100	1,180	14.5 +0/-0.7	50.5 +0/-1.5	26	HR15/51
BK-150AA	HHR-150AA	AA	AA	1.2	1,500	1,580	14.5 +0/-0.7	50.5 +0/-1.5	26	HR15/51
NEW BK-200AAP	-	AA	AA	1.2	1,900	2,000	14.5 +0/-0.7	50.5 +0/-1.5	29	HR15/51
BK-200A	HHR-200A	A	4/5A	1.2	2,000	2,040	17.0 +0/-0.7	43.0 +0/-1.5	32	HR17/43
BK-210A	HHR-210A	A	A	1.2	2,100	2,200	17.0 +0/-0.7	50.0 +0/-2.0	38	HR17/50
BK-380A	HHR-380A	A	L-A	1.2	3,700	3,800	17.0 +0/-0.7	67.0 +0/-2.0	53	HR17/67
BK-450A	HHR-450A	A	LFat/A	1.2	4,200	4,500	18.2 +0/-0.7	67.5 +0/-1.5	60	-



HIGH RATE DISCHARGE & RAPID CHARGE TYPE

(P) TYPE

These battery types provide excellent current discharge characteristics and are designed for rapid charging. They are most suitable for power tools, robot cleaners and electric vehicles.

FEATURES

- Excellent large current discharge characteristics
- Rapid charge-capable

MODEL NUMBER (EXAMPLE)

B K - 3 0 0 S C P

High rate discharge & rapid charge type
Diameter: SC
Multiply this by 10 to obtain the rated capacity (some exceptions)
Nickel-Metal-Hydride battery

APPLICATIONS

- Medical equipment
- Power tool
- Garden tool
- Robot cleaner
- Electric vehicle, etc.

Model number	Old model number	Dia-meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
BK-200SCP*1	HHR-200SCP	SC	4/5SC	1.2	1,900	2,100	23.0 +0/-1.0	34.0 +0/-1.5	42	HR23/34
BK-260SCP*1	HHR-260SCP	SC	SC	1.2	2,450	2,700	23.0 +0/-1.0	43.0 +0/-1.5	55	HR23/43
BK-300SCP*1	HHR-300SCP	SC	SC	1.2	2,800	3,050	23.0 +0/-1.0	43.0 +0/-1.5	57	HR23/43



LOW TEMPERATURE TYPE

L TYPE

This Panasonic battery type is especially designed for low temperature discharge down to -30°C. Thus these batteries are ideal to power two way radios and other outdoor applications.

FEATURES

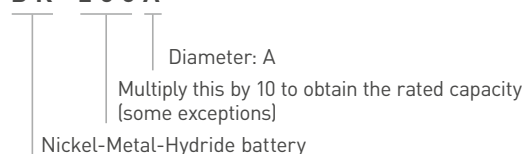
- Designed for applications which require low temperature discharge down to -30°C

APPLICATIONS

- Two way radio
- Construction sites signaling
- UPS, etc.

MODEL NUMBER (EXAMPLE)

B K - 2 5 0 A



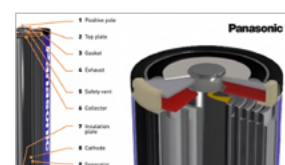
Model number	Old model number	Dia-meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
BK-250A	-	A	A	1.2	2,450	2,600	17.0 +0/-0.7	50.0 +0/-2.0	40	HR17/50

3D ILLUSTRATION*2

- Exhaust gas hole
- Safety vent
- Insulation plate
- Tube
- Anode (hydrogen - absorbing alloy)
- Separator
- Cathode (Nickel Hydroxide)
- Negative pole (cell can)
- Positive pole
- Top plate
- Gasket
- Collector



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*1 For high power use application such as power tools. *2 The illustration shows only one example of Ni-MH battery structure.



INFRASTRUCTURE TYPE

These battery types offer high capacity on the one hand and an outstanding efficiency even at low temperature environments on the other. They are particular designed for power storage and auto-mated guided vehicles (AGV).

FEATURES

- Realisation of lightweight and space-saving
- Alternative compared to VRLA batteries
- By using Nickel-Metal-Hydride battery, power supply provides high efficiency even at a low temperature

APPLICATIONS

- UPS
- Green energy
- Solar window shutter
- Wind turbine
- Energy storage
- Floating machine, etc.

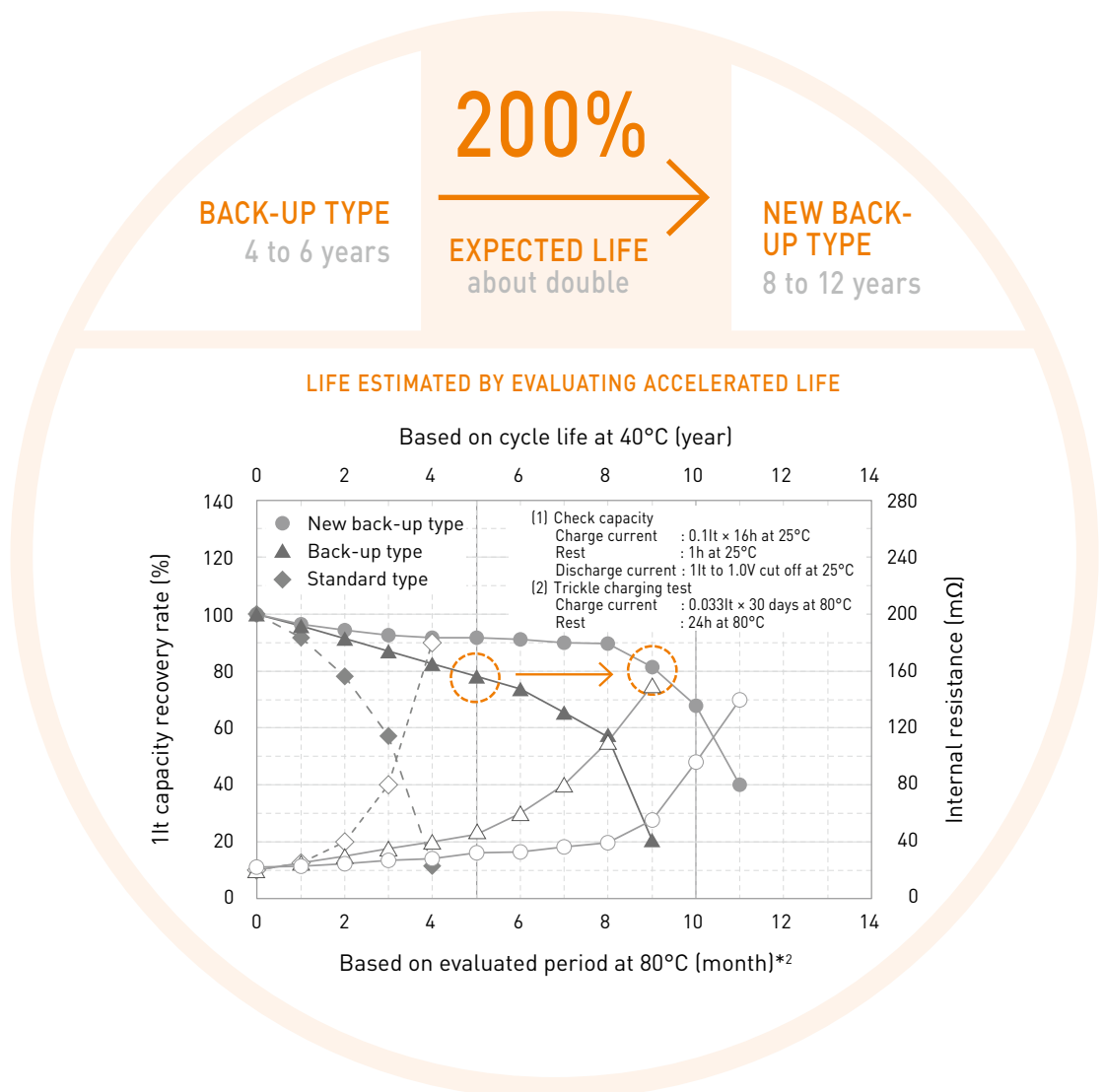
	Model number	Old model number	Dia-meter	Size	Nominal voltage (V)	Nominal capacity (mAh)	Typical capacity (mAh)	Diameter (mm)	Total height (mm)	Weight (g)	IEC
NEW	BK-06V1S1	-	V	V	1.2	60,000	63,000	62.6 +1.0/-1.0	136.9 +1.0/-1.0	1,100	-
	BK-10V1S1	-	V	V	1.2	90,000	95,000	62.6 +1.0/-1.0	188.7 +1.0/-1.0	1,700	-
NEW	BK-06V10T1	-	Pack	Pack	12.0	60,000	63,000	428.0 x 159.0	220.0	16,000	-
	BK-10V10T1	HHR-10V10T	Pack	Pack	12.0	90,000	95,000	428.0 x 159.0	270.0	23,000	-

Ni-MH TECHNOLOGIES

NEW BACK-UP TYPE*¹

New battery type which provides high temperature durability and long-life adapted to the IEC-U standard.

- Excellent charging and discharging performance in different environments (-20°C to 75°C)
- Long-life in trickle charging (most suitable for replacing Nickel-Cadmium batteries)
- Fit well for various equipments and applications
- Small, light-weight and space-saving

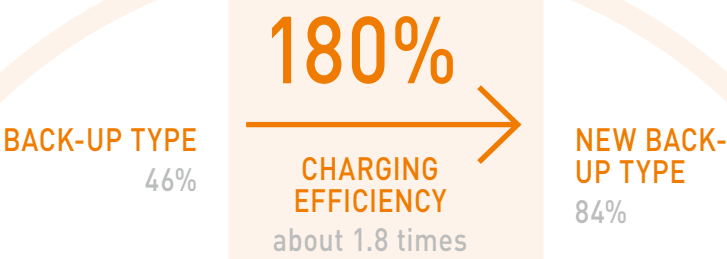


LONG-LIFE (IN TRICKLE CHARGING)

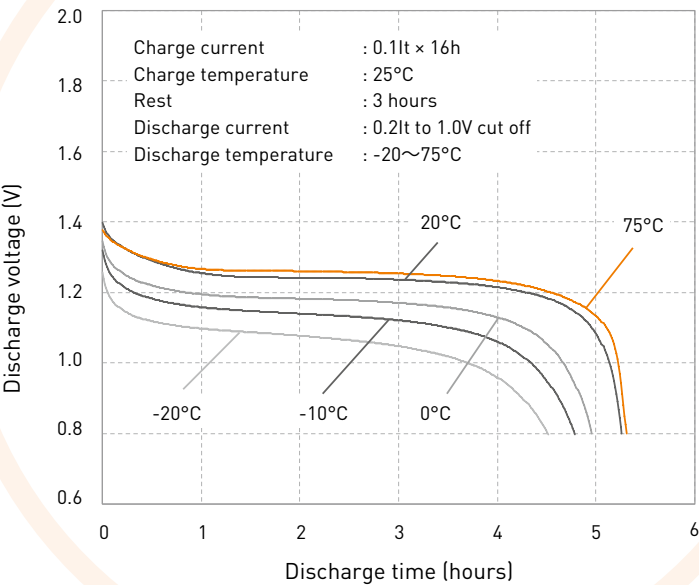
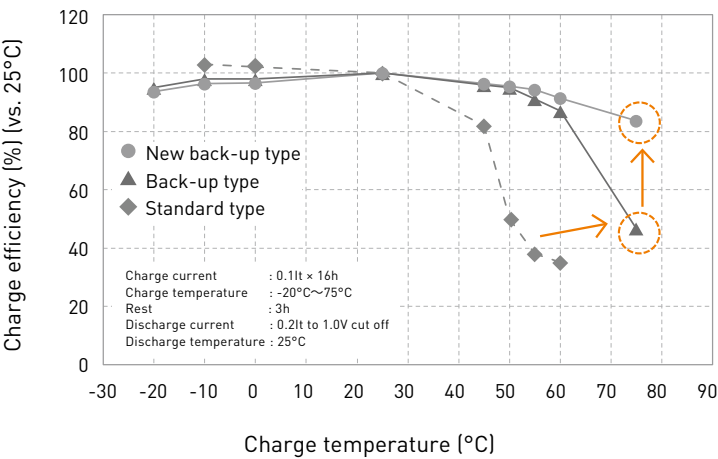
*¹ New back-up type which can be operated at high ambient temperatures up to 75 °C. Not in mass production yet.

*² It is accelerated evaluation on the condition that trickle charging current is 0.033It at 80°C.

EXCELLENT CHARGING PERFORMANCE AT HIGH TEMPERATURE
ENVIRONMENT UP TO 75°C



CHARGING CHARACTERISTICS



TYPICAL DISCHARGE CHARACTERISTICS