Nickel-Metal Hydride Batteries
Backup for Infrastructure/Long Life (U)

July 2024

Panasonic Energy Co., Ltd.

This data in this document is for descriptive purposes only and is not intended to make or imply any guarantee and warranty.

Nickel-Metal Hydride Batteries Backup for Infrastructure/Long Life (U)

Panasonic ENERGY

Long life and suitable for infrastructure/security devices

■ Value Proposition

1) Long life of 8-10 years
2) Excellent charging efficiency under high temperature (75℃)
3) Low self-discharge characteristics (appx.15% at 20℃ per 1 year)

■ Panasonic Original Technique

1) Achieves long life with high corrosion resistance hydrogen storage alloy
2) Achieves higher charging efficiency under high temperature and long life by optimizing both positive electrode additive and electrolyte

Panasonic Only

Benchmark

Item \ Product	Panasonic infrastructure backup(long life type)(U)	Panasonic infrastructure backup(general type)(H)	Panasonic standard type (N)
Expected life	+++ 8～10years	++ 4～6years	+ 2years
Operating temperature range	+++ Max 75℃	++ Max 60℃	++ Max 65℃

Applications

- Emergency lights/guide lights
- Elevators
- ATM(Cash dispenser)
- Base stations
- Solar system

etc.

Schedule

Mass production

Before

Infrastructure backup
General type (H)

Enables trickle charging suitable for replacement from Ni-Cd batteries
Long life (4-6 years)
Enables to use in wide temperature range (-10℃～60℃)

Expected life 4-6 years

Charging efficiency under high temperature 46%

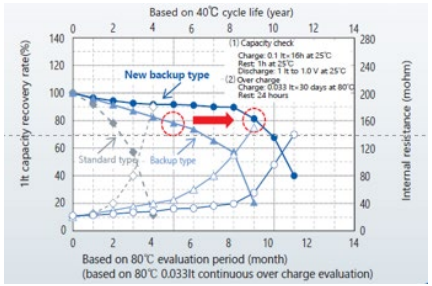
After

Infrastructure backup
long life type (U)

Expected life 8-10 years

Example of life estimation by accelerated life evaluation

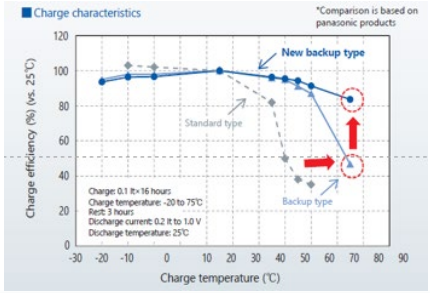
appx. 2x



Superior charging efficiency at high temperature(75℃) 84%

Example of charging characteristic

appx. 1.8x



Nickel-Metal Hydride Batteries Backup for Infrastructure/Long Life (U) Line up

Panasonic ENERGY

Line up

Size	Model	Nominal voltage (V)	Discharge capacity (mAh)		Dimensions with tube (mm)		Mass (g)	Operating temperature range(℃)	
			Rated (min.)	Average (Typ.)	Diameter(mm)	Height(mm)		Charge	Discharge
AAA	BK60AAAHU	1.2	500	550	10.5+0/-0.7	44.5+0/-1.5	12	-10 ～ 75	-20 ～ 75
AA	BK120AAHU		1,200	1,280	14.5+0/-0.7	50.5+0/-1.5	24	-20 ～ 75	
SC	BK220SCHU		2,200	2,300	23.0+0/-1.0	43.5+0/-1.5	52		
C	BK310CHU		3,100	3,300	25.8+0/-1.0	50.0+0/-2.0	78		
F	BK1100FHU		11,000	12,000	33.0+0/-1.0	91.0+0/-2.5	245		-20 ～ 85※3

※1：0.2 It discharge capacity after charging at 0.1 It for 16 hours.
※2：Lifespan compared with Panasonic standard type battery life cycle (3 to 5 years) charging using intermittent charging method.
※3：Please consult Panasonic when anticipating usage in operating temperature between 75℃ and 85℃.
*1It(A)=Rated capacity［Ah］/［h］

Panasonic Nickel-Metal Hydride Batteries Lineup

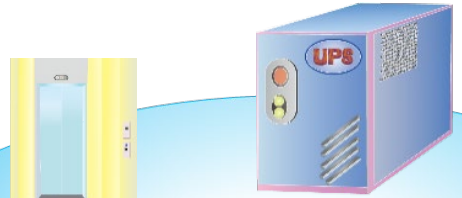
Panasonic ENERGY

U Infrastructure back-up (Long-life type)	• Best performance and longest life (8- 10 years) for backup usage among lineup • Excellent recharging performance in high temperature (up to 75℃)	 Emergency lights /Guide lights  ATM Security system Emergency broadcasting equipment  Ventilators ,Dialysis machines AED etc.  Storage system  Solar system
H Infrastructure back-up (General type)	• Long life (4-10 years) for backup usage • Enables to use in a wide range temperature (-10 to 60℃)	
PH Infrastructure back-up (High-rate Discharge type)	• Long life (4-10 years) for backup usage • Enables to use in a wide range temperature (-10 to 60℃) • High rate discharge	
V Large-type for Infrastructure Applications	• Designed for extra-large capacity • Highly efficient power supply capacity even in low temperature	 Transport machinery  Railroad vehicles Base stations UPS
W Automotive Back up	• Long life and high performance at wide range temperature • Designed for automotive application back up	 E-call/T-box  Trunk light  Drive recorder
N Standard	• High safety and reliability • Wide product range	 RF receiver  Home appliance
P High-rate Discharge	• Excellent high current discharge characteristic • Rapid charging capacity	 Power tool Cable less vacuum
B Button Top	• Compatible with alkaline battery • Low self-discharge and long storage life	 controller  RF receiver

Nickel-Metal Hydride Batteries Backup for Infrastructure/Long Life (U)

Panasonic ENERGY

Applications



UPS

Elevators

ATM (Cash dispenser),

Vending machines

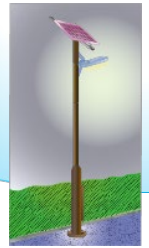
Emergency lights /Guide lights

Values of Panasonic long-life batteries (U type)

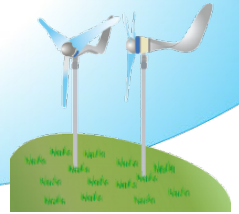
- ✓ Long life
- ✓ Excellent charging efficiency under high temperature
- ✓ Discharge large current

Base stations

Solar system



Solar light



Wind power generation

Buoys

Panasonic ENERGY

Please feel free to contact us

Panasonic Energy Website for Business Products