

# DCBS



## DC-HR12280W

Valve-regulated lead-acid battery

## HIGH RATE SERIES

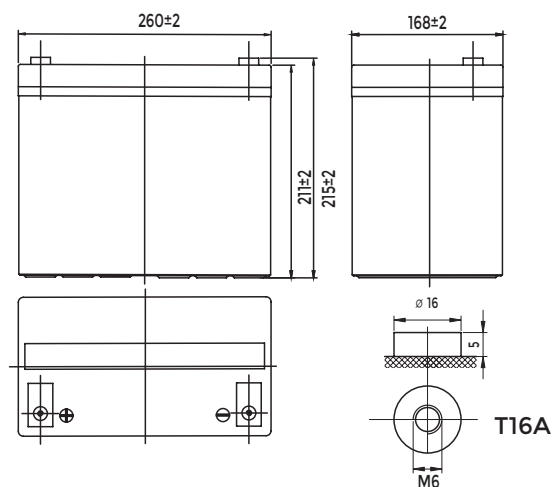
### Characteristics

|   |                       |                         |
|---|-----------------------|-------------------------|
| Nominal voltage                                 | 12V (6 cell per unit) |                         |
| Nominal power at 15 min. rate 1.67V/cell (25°C) | 280W                  |                         |
| Capacity (25°C)                                 | 10 Hours rate/10.8V   | 70Ah                    |
|   | 5 Hours rate/10.8V    | 65.5Ah                  |
| Terminal type                                   | T16A                  |                         |
| Torque  | 5.1±0.6N.m            |                         |
| Approx. internal resistance (25°C)              | 5.0 mΩ                |                         |
| Dimensions                                      | Length                | 260±2mm (10.24inch)     |
|   | Width                 | 168±2mm (6.61inch)      |
|   | Height                | 211±2mm (8.31inch)      |
|   | Total height          | 215±2mm (8.46inch)      |
| Design Life (stand-by)                          | JIS at 25°C           | 10 years                |
|   | Eurobat at 20°C       | 10-12 years             |
| Weight  | 25.30kg (55.76lbs)±3% |                         |
| Nominal operating temperature                   | 25±3°C (77°F±5)       |                         |
| Operating temperature range                     | Discharge             | -15°C~50°C (5°F~122°F)  |
|   | Charge                | -10°C~50°C (14°F~122°F) |
|   | Storage               | -20°C~50°C (-4°F~122°F) |
| Float charging voltage at 25°C                  | 13.5V~13.8V           |                         |
| Cyclic charging voltage at 25°C                 | 14.5V~15.0V           |                         |
| Temperature compensation                        | Float charge          | -18 (mV/°C/Block)       |
|   | Cycle charge          | -30 (mV/°C/Block)       |
| Max. charging current (A)                       | 22.4A                 |                         |
| Max. discharge current for 5 seconds            | 700A                  |                         |
| Self discharge rate (25°C)                      | ≤3%/month             |                         |
| Battery container ABS UL94-HB                   | V-0 optional          |                         |

### Overview

High Rate series batteries are specially de-signed for applications that require high power output. With their high-power density and low internal resistance, the HR series are the right choice for your most demanding applications.

### Dimensions & Terminal Type (mm)



### Construc tion

| Component    | Positive Plate | Negative plate | Container      | Separator | Electrolyte   | Safety valve | Terminal |
|--------------|----------------|----------------|----------------|-----------|---------------|--------------|----------|
| Raw material | Lead dioxide   | Lead           | ABS (V-0 opt.) | AGM       | Sulfuric Acid | Rubber       | Copper   |

### Constant current discharge characteristics at 25°C

(Ampere/cell)

| F.V/Time   | 10min  | 15min  | 20min  | 30min | 45min | 60min | 2h    | 3h    | 4h    | 5h    | 6h    |
|------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V/cell | 210.45 | 163.50 | 124.80 | 92.54 | 65.83 | 51.60 | 27.40 | 19.70 | 15.80 | 13.80 | 11.80 |
| 1.67V/cell | 201.25 | 158.05 | 119.60 | 89.60 | 63.65 | 50.30 | 27.20 | 19.50 | 15.70 | 13.60 | 11.70 |
| 1.70V/cell | 195.50 | 153.69 | 117.52 | 87.96 | 62.50 | 49.60 | 27.00 | 19.40 | 15.60 | 13.60 | 11.60 |
| 1.75V/cell | 187.45 | 148.24 | 113.36 | 85.78 | 61.05 | 48.60 | 26.60 | 19.30 | 15.50 | 13.50 | 11.60 |
| 1.80V/cell | 177.10 | 140.61 | 107.12 | 82.62 | 58.76 | 47.10 | 25.90 | 18.70 | 15.10 | 13.10 | 11.20 |

### Constant power discharge characteristics at 25°C

(Watts/cell)

| F.V/Time   | 10min  | 15min  | 20min  | 30min  | 45min  | 60min | 2h    | 3h    | 4h    | 5h    | 6h    |
|------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| 1.60V/cell | 378.40 | 289.00 | 237.93 | 175.48 | 128.10 | 99.60 | 53.40 | 38.70 | 31.20 | 27.30 | 23.30 |
| 1.67V/cell | 361.90 | 281.00 | 228.66 | 170.13 | 123.90 | 97.10 | 53.00 | 38.40 | 30.90 | 27.00 | 23.10 |
| 1.70V/cell | 352.00 | 272.00 | 223.51 | 170.13 | 121.80 | 95.60 | 52.70 | 38.20 | 30.80 | 26.90 | 23.00 |
| 1.75V/cell | 336.60 | 263.00 | 216.30 | 162.64 | 118.65 | 93.70 | 51.90 | 38.00 | 30.60 | 26.70 | 22.90 |
| 1.80V/cell | 317.90 | 249.00 | 204.97 | 156.22 | 114.45 | 90.90 | 50.50 | 36.80 | 29.70 | 25.90 | 22.20 |

The above characteristics represent average values and can be obtained within three charge and discharge cycles. The batteries must be fully charged before testing. The data in this document is subject to change without notice and become contractual only after written confirmation. Please contact DCBS for the latest available version.

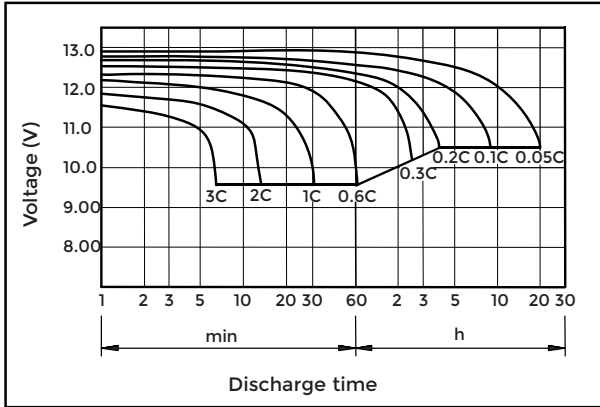
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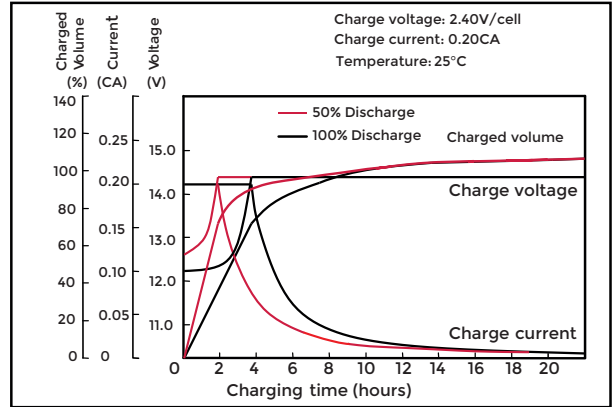
# HIGH RATE

# SERIES

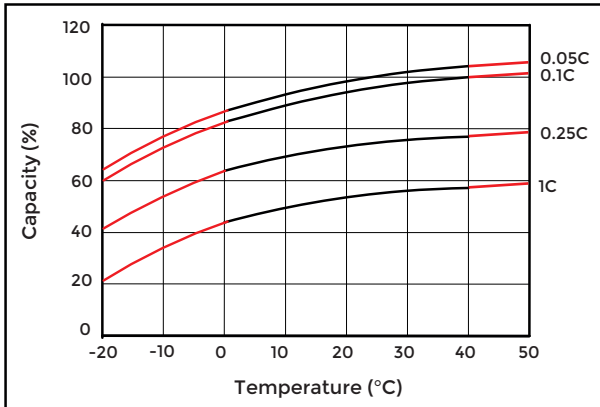
### Discharge characteristics (25°C)



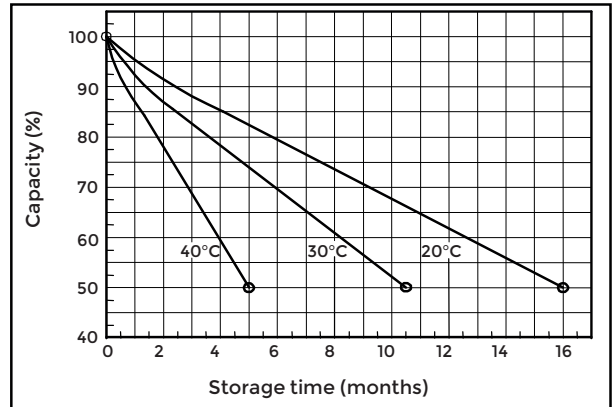
### Charging characteristics (25°C)



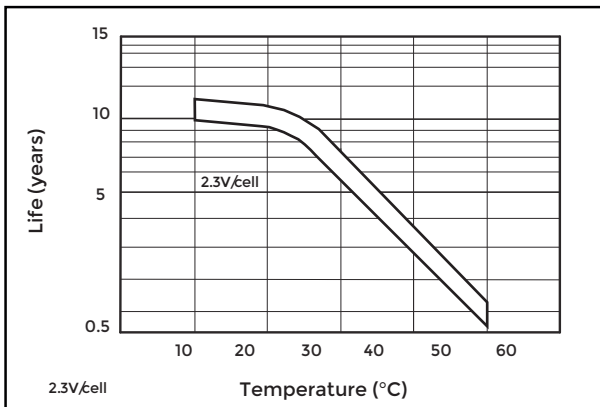
### Temperature effects on capacity



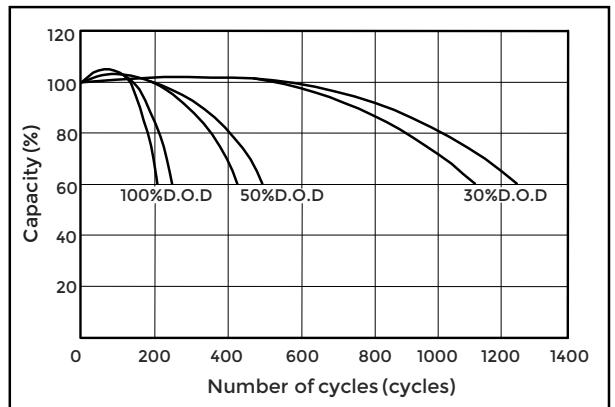
### Self-discharge characteristics



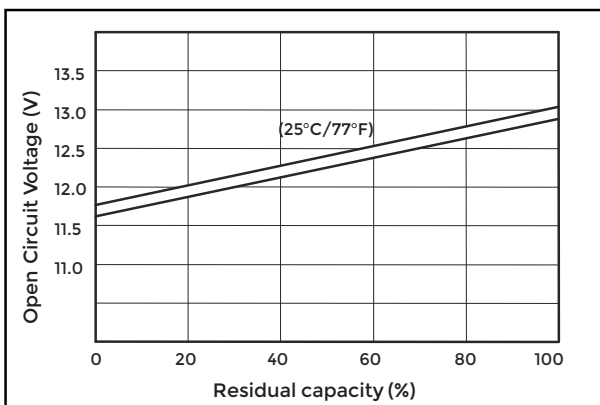
### Floating life on temperature



### Cycle life on D.O.D (25°C)



### Relationship for OCV and capacity (25°C)



### Charging voltage VS temperature

