

# INTERNATIONAL STANDARD

# IEC 60086-2

2000

AMENDMENT 1  
2001-07

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Amendment 1

**Primary batteries –**

**Part 2:  
Physical and electrical specifications**

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International Electrotechnical Commission  
Telefax: +41 22 919 0300

3, rue de Varembe Geneva, Switzerland  
e-mail: [inmail@iec.ch](mailto:inmail@iec.ch)

IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

**G**

*For price, see current catalogue*

## FOREWORD

This amendment has been prepared by IEC technical committee 35: Primary cells and batteries.

The text of this amendment is based on the following documents:

FDIS	Report on voting
35/1157/FDIS	35/1163/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2002. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this amendment may be issued at a later date.

*This amendment replaces the data corresponding to R03, R6C, R6P, R6S, R14C, R14P, R14S, R20C, R20P, R20S, LR03, LR6, LR14, LR20, 6F22, 6LR61.*

*Replace pages 11, 12, 13, 14 and 41 of IEC 60086-2, tenth edition, by the following new pages:*

PHYSICAL AND ELECTRICAL SPECIFICATIONS											CATEGORY 1 BATTERIES					
Electro-chemical system	Designation	Vn V	Dimensions mm									Discharge conditions			MAD <sup>a</sup> (initial)	Applications
			A Max.	B Min.	C Min.	E Max.	F Max.	G Min.	∅		∅P Max.	R Ω	Daily period	EV V		
(see note)	R1	1,5	30,2	29,0	5,0	0,2	4,0	0,5	12,0	10,9	0,5	300	12 h	0,9	76 h	Hearing aids
												5,1	5 min	0,9	57 min	Portable lighting
	R03	1,5	44,5	43,3	4,3	0,5	3,8	0,8	10,5	9,5	0,4	5,1	b	0,9	45 min	Portable lighting
												10	1 h	0,9	1,4 h	Personal cassette player and tape recorder
												75	4 h	0,9	20 h	Radio
												24	15 s per min 8 h per day	1,0	4 h	Remote control
												3,6	c	0,9	120 pulses	Pulse test
	R6C (high capacity)	1,5	50,5	49,2	7,0	0,5	5,5	1,0	14,5	13,5	0,5	43	4 h	0,9	25 h	Radio
												3,9	1 h	0,8	47 min	Motor/toy
												10	1 h	0,9	3,5 h	Personal cassette player and tape recorder
												24	15 s per min 8 h per day	1,0	10,9 h	Remote control
												1,8	c	0,9	46 pulses	Pulse test
	R6P (high power)	1,5	50,5	49,2	7,0	0,5	5,5	1,0	14,5	13,5	0,5	43	4 h	0,9	27 h	Radio
												3,9	1 h	0,8	60 min	Motor/toy
												10	1 h	0,9	4,1 h	Personal cassette player and tape recorder
												24	15 s per min 8 h per day	1,0	11 h	Remote control
	R6S (standard)	1,5	50,5	49,2	7,0	0,5	5,5	1,0	14,5	13,5	0,5	1,8	c	0,9	75 pulses	Pulse test
												43	4 h	0,9	22 h	Radio

NOTE Delayed discharge performance after 12 months is 80 % of MAD.

a Standard conditions.  
b 4 min beginning at hourly intervals for 8 h per day.  
c 15 s on, 45 s off for 24 h per day.

PHYSICAL AND ELECTRICAL SPECIFICATIONS											CATEGORY 1 BATTERIES					
Electro-chemical system	Designation	Vn V	Dimensions mm									Discharge conditions			MAD <sup>a</sup> (initial)	Applications
			A	B	C	E	F	G	Ø		R Ω	Daily period	EV V			
			Max.	Min.	Min.	Max.	Max.	Min.	Max.	Min.				Max.		
(see note)	R14C (high capacity)	1,5	50,0	48,6	13,0	0,9	7,5	1,5	26,2	24,9	1,0	3,9	b	0,9	250 min	Portable lighting
												6,8	1 h	0,9	7 h	Tape recorders
												20	4 h	0,9	25 h	Radio
												3,9	1 h	0,8	2,5 h	Toy
	R14P (high power)	1,5	50,0	48,6	13,0	0,9	7,5	1,5	26,2	24,9	1,0	3,9	b	0,9	300 min	Portable lighting
												6,8	1 h	0,9	9 h	Tape recorders
												20	4 h	0,9	30 h	Radio
												3,9	1 h	0,8	4,8 h	Toy
	R14S (standard)	1,5	50,0	48,6	13,0	0,9	7,5	1,5	26,2	24,9	1,0	3,9	b	0,9	120 min	Portable lighting
												6,8	1 h	0,9	3,0 h	Tape recorders
												20	4 h	0,9	15 h	Radio
												3,9	1 h	0,8	1,5 h	Toy
	R20C (high capacity)	1,5	61,5	59,5	18,0	1,0	9,5	1,5	34,2	32,3	1,0	2,2	b	0,9	300 min	Portable lighting (1)
												3,9	1 h	0,9	9 h	Tape recorders
												10	4 h	0,9	30 h	Radio
												2,2	1 h	0,8	4 h	Toy
1,5												4 min per 15 min 8 h per day	0,9	130 min	Portable lighting (2)	

NOTE Delayed discharge performance after 12 months is 80 % of MAD.

<sup>a</sup> Standard conditions.

<sup>b</sup> 4 min beginning at hourly intervals for 8 h per day.

PHYSICAL AND ELECTRICAL SPECIFICATIONS												CATEGORY 1 BATTERIES				
Electro-chemical system	Designation	Vn V	Dimensions mm									Discharge conditions			MAD <sup>a</sup> (initial)	Applications
			A	B	C	E	F	G	Ø		ØP	R	Daily period	EV		
			Max.	Min.	Min.	Max.	Max.	Min.	Max.	Min.	Max.	Ω		V		
(see note 1)	R20P (high power)	1,5	61,5	59,5	18,0	1,0	9,5	1,5	34,2	32,3	1,0	2,2	b	0,9	320 min	Portable lighting
												3,9	1 h	0,9	13 h	Tape recorders
												10	4 h	0,9	35 h	Transistor radios
												2,2	1 h	0,8	6 h	Toys
												1,5	4 min per 15 min 8 h per day	0,9	137 min	Portable lighting (2)
	R20S (standard)	1,5	61,5	59,5	18,0	1,0	9,5	1,5	34,2	32,3	1,0	2,2	b	0,9	100 min	Portable lighting
												3,9	1 h	0,9	4 h	Tape recorders
												10	4 h	0,9	18 h	Transistor radios
												2,2	1 h	0,8	2 h	Toys
												1,5	4 min per 15 min 8 h per day	0,9	32 min	Portable lighting (2)
2R10	3,0	74,6	71,5	9,0	0,8	6,8	1,0	21,8	20,0		6,8	5 min	1,8	85 min	Portable lighting	
NOTE 1 Delayed discharge performance after 12 months is 80 % of MAD.																
(see note 2)	LR8D425	1,5	42,5	41,5	2,3 <sup>c</sup>	0,1	3,8	0,7	8,3	7,7	0,1	5,1	5 min	0,9	90 min	Lighting
												75	1 h	1,1	22 h	Laser pointer
												75	1 h	0,9	27 h	Service output test
	LR1	1,5	30,2	29,1	5,0	0,2	4,0	0,5	12,0	10,9	0,5	300	12 h	0,9	130 h	Hearing aids
												5,1	5 min	0,9	94 min	Portable lighting
												3 000	d	0,9	888 h	Paging test
NOTE 2 Delayed discharge performance after 12 months is 90 % of MAD.																
<sup>a</sup> Standard conditions. <sup>b</sup> 4 min beginning at hourly intervals for 8 h per day. <sup>c</sup> This battery does not fulfil the requirement C > F due to constructional constraints. <sup>d</sup> 24 h per day, plus 10 Ω for 5 s at hourly intervals for 24 h per day.																

PHYSICAL AND ELECTRICAL SPECIFICATIONS											CATEGORY 1 BATTERIES					
Electro-chemical system	Designation	Vn V	Dimensions mm									Discharge conditions			MAD <sup>a</sup> (initial)	Applications
			A	B	C	E	F	G	∅	∅P	R Ω	Daily period	EV V			
			Max.	Min.	Min.	Max.	Max.	Min.	Max.	Min.	Max.					
L (see note)	LR03	1,5	44,5	43,3	4,3	0,5	3,8	0,8	10,5	9,5	0,4	5,1	b	0,9	130 min	Portable lighting
												24	15 s per min 8 h per day	1,0	14,5 h	Remote control
												10	1 h	0,9	5 h	Personal cassette player and tape recorder
												75	4 h	0,9	44 h	Radio
												(current drain) 600 mA	c	0,9	140 pulses	Photo flash
	LR6	1,5	50,5	49,2	7,0	0,5	5,5	1,0	14,5	13,5	0,5	43	4 h	0,9	60 h	Radio
												3,9	1 h	0,8	4 h	Motor/toy
												10	1 h	0,9	11,5 h	Personal cassette player and tape recorder
												(current drain) 1 000 mA	c	0,9	200 pulses	Photo flash
												24	15 s per min 8 h per day	1,0	31 h	Remote control
	LR14	1,5	50,0	48,6	13,0	0,9	7,5	1,5	26,2	24,9	1,0	3,9	b	0,9	770 min	Portable lighting
												6,8	1 h	0,9	23 h	Tape recorders
												20	4 h	0,9	77 h	Radio
												3,9	1 h	0,8	12 h	Toy
	LR20	1,5	61,5	59,5	18,0	1,0	9,5	1,5	34,2	32,3	1,0	2,2	b	0,9	810 min	Portable lighting (1)
												3,9	1 h	0,9	25 h	Tape recorders
10												4 h	0,9	81 h	Radio	
2,2												1 h	0,8	15 h	Toy	
1,5												4 min per 15 min 8 h per day	0,9	450 min	Portable lighting (2)	

NOTE Delayed discharge performance after 12 months is 90 % of MAD.

a Standard conditions.

b 4 min beginning at hourly intervals for 8 h per day.

c 10 s on, 50 s off for 1 h per day.