

## Model 2415 NiMH

65 W max out • 90-264 VAC input

- Universal input voltage (90-264 VAC)
- Custom specifications on request
- Computer Programmable Microprocessor (CPM)

CPM offers the following charge detection options (one or more):

dV, dT/dt, 0 dV, Timer

Safety timer, dV threshold,

Temperature gradient adjustment

[Link to CPM spec sheet](#)

### Notes:

Desktop unit

Exchangeable DC plugs available

Standard DC output cord (exch. DC plugs):

Female conn. L 1.8m, AWG 18, OD: 2.7 X 5.4 Black w. white line,  
UL 2468

Mounting bracket available



### Available versions On request

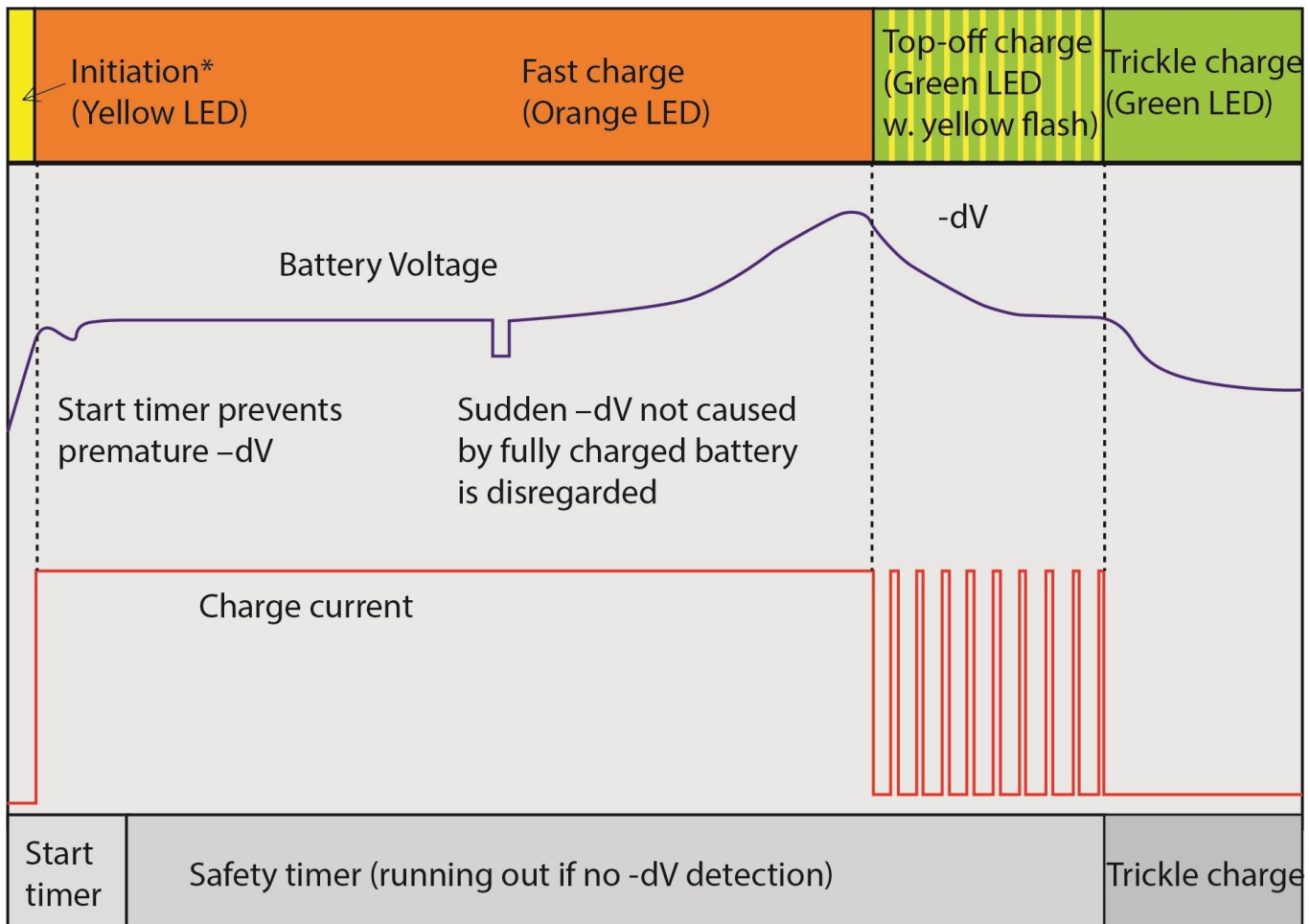
3-6 cells / 4,5A	4-8 cells / 4,0A
5-10 cells / 3,5A	6-12 cells / 3,0A
10-20 cells / 1,8A	12-25 cells / 1,5A
15-30 cells / 1,3A	24-40 cells / 0,9A



SPECIFICATIONS for MASCOT type 2215:	3-6 cells	4-8 cells	5-10 cells	6-12 cells	10-20 cells	12-25 cells	15-30 cells
Top-off timer	1 hour						
Safety timer	2 hour						
	The charger switch to trickle charge if no $-\Delta V$ is detected before the safety timer has run out.						
Switch frequency	40kHz.						
Temperature range	-20 to +40°C (these values are only for the charger, not for the batteries).						
Charge control	- $\Delta V$ principle. Fast charging stops when the voltage has dropped 0.5% below its maximum recorded level.						
Voltage changes during charging	- $\Delta V$ detection is disabled if the voltage changes quickly. This to avoid false $-\Delta V$ if an external load kicks in during charging.						
Battery analyzing	Max. 20 sec after mains connection / battery connection (yellow LED).						
Efficiency	Appr. 78%.						
Fuses	Fuse at input. Polyswitch fuse at the output protects the unit against wrong polarity.						
Insulation class	Class II.						
Electrical safety	EN 60601-1, EN 60950-1, EN 60335-2-29.						
EMC-standards	EN 61000-6-3, EN 61000-6-1, EN 60601-1-2.						
Insulation voltage (prim-sec)	4000V AC / 5700V DC.						
Mains connection	2-pins IEC 320 mains connector.						
Output terminals	Secondary cable with exchangeable plugs.						
LED-indication	Initialization/no batt.: Yellow Fast charge: Orange Top off charge: Green with short yellow flashes Trickle charge: Green Battery voltage low: Red-Green flashing (error mode)						
Resetting	A new charging cycle starts by reconnecting a battery at the output, or by disconnecting and connecting the mains voltage.						
IP-grade	IP 41.						
Dimensions	135 x 80 x 44mm.						
Weight	390g.						
Other	Possible options on request: +dT/dt, 0dV and timer charge. The charger may be both software and hardware programmable.						

Technical drawing





# EU Declaration of Conformity



## We, the responsible manufacturer;

Company Name:	Mascot Electronics AS		
Postal Address:	P.O.Box 177, N-1601 Fredrikstad, NORWAY		
Visiting Address:	Mosseveien 109, N-1624 Gressvik, NORWAY		
Telephone:	(+47) 69 36 43 00	E-mail:	sales@mascot.com
		WEB:	www.mascot.com

declare that this Declaration is issued under our sole responsibility and belongs to the following product(s):

Product and intended purpose:	Desktop Battery Chargers for NiCd/NiMH-Batteries (also for medical equipment)																		
Brand(s):	and/or <b>MASCOT</b> (may also carry additional customer name, logo or trade mark)																		
Type(s)/Model(s)/UDI-DI:	2415																		
Batch / Serial No./UDI-PI:	all CE-marked products produced from the date indicated below (for production date: see marking on the product)																		
Description:	<p><b>Data:</b></p> <table border="0"> <tr> <td><b>Input:</b></td> <td>1.3A 100 - 250VAC 50-60 Hz, Class II</td> </tr> <tr> <td><b>Output:</b></td> <td>3 - 6 cells version: 3.7 - 10.8VDC 4.5A (12.8 ±0.7VDC at no-load)</td> </tr> <tr> <td></td> <td>4 - 8 cells version: 5.0 - 14.4VDC 4.0A (16.5 ±1.0VDC at no-load)</td> </tr> <tr> <td></td> <td>5 - 10 cells version: 6.2 - 18.0VDC 3.5A (21 ±1.2VDC at no-load)</td> </tr> <tr> <td></td> <td>6 - 12 cells version: 7.5 - 21.6VDC 3.0A (24.7 ±1.5VDC at no-load)</td> </tr> <tr> <td></td> <td>10 - 20 cells version: 12.5 - 32VDC 2A (41 ±2VDC at no-load)</td> </tr> <tr> <td></td> <td>12 - 25 cells version: 15.0 - 45VDC 1.5A (51 ±2VDC at no-load)</td> </tr> <tr> <td></td> <td>15 - 30 cells version: 18.8 - 49.5VDC 1.3A (55 ±3VDC at no-load)</td> </tr> <tr> <td></td> <td>20 - 40 cells version: 25 - 66VDC 0.6A (69 ±3VDC at no-load)</td> </tr> </table> <p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>- Versions with output voltage &gt;42.4VDC are not within the scope of standard EN 60335-2-29 Cl.10.101.</li> <li>- For compliance with EN 60601-1 output terminals &gt;60VDC must be inaccessible to the operator.</li> <li>- For EN 60950-1 output voltages &gt;60VDC are regarded ELV and may not be accessible or interconnected.</li> <li>- Versions with output voltage &gt;42.4 VDC are not within the scope of standard EN 60335-2-29 Ed.4 (ref. Cl.10.101).</li> </ul>	<b>Input:</b>	1.3A 100 - 250VAC 50-60 Hz, Class II	<b>Output:</b>	3 - 6 cells version: 3.7 - 10.8VDC 4.5A (12.8 ±0.7VDC at no-load)		4 - 8 cells version: 5.0 - 14.4VDC 4.0A (16.5 ±1.0VDC at no-load)		5 - 10 cells version: 6.2 - 18.0VDC 3.5A (21 ±1.2VDC at no-load)		6 - 12 cells version: 7.5 - 21.6VDC 3.0A (24.7 ±1.5VDC at no-load)		10 - 20 cells version: 12.5 - 32VDC 2A (41 ±2VDC at no-load)		12 - 25 cells version: 15.0 - 45VDC 1.5A (51 ±2VDC at no-load)		15 - 30 cells version: 18.8 - 49.5VDC 1.3A (55 ±3VDC at no-load)		20 - 40 cells version: 25 - 66VDC 0.6A (69 ±3VDC at no-load)
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The product(s) described above are in conformity with the relevant European Union harmonisation legislation:

2014/35/EU	EU Directive - Safety of electrical equipment ("Low-Voltage Directive") (LVD) recast, repealing Directives 2006/95/EC & 73/23/EEC
2014/30/EU	EU Directive - Electromagnetic Compatibility (EMC) recast, repealing Directives 2004/108/EC & 89/336/EEC
93/42/EEC	EU Directive - General Medical Devices (MDD), Risk Class I Device will from 05.05.2020 be repealed by Regulation (EU) 2017/745
2009/125/EC	EU Directive - Energy Related Products, Ecodesign (ERP) recast, repealing Directive 2005/32/EC (EUP)
2015/863/EU	EU Directive - Restriction on use of Hazardous Substances in EEE ("RoHS3") recast, repealing Directives 2002/95/EC, 2008/35/EC & 2011/65/EU

The following harmonised standards and technical specifications have been applied:

(International editions and comments indicated in brackets)

### Electrical Safety (to LVD- & MDD-Directives):

EN 60950-1	EN 60950-1:2006 + /A1:2010, + /A11:2009, + /AC:2011, + /A12:2011 + /A2:2013 (IEC 60950-1:2005 modified + /A1:2009 modified + /A2:2013 modified, Edition 2.2) (will from 20.06.2019 be replaced by standard EN 62368-1:2014 + /AC:2015, Edition 2.0 A/V, ITE & COMM. Equipm.) (IEC 62368-1:2014, Edition 2.0)	IT-equipment (ITE), Edition 2.2
EN 60335-1	EN 60335-1:2012 + /AC:2014 + /A11:2014 (IEC 60335-1:2010 modified, Edition 5.0)(also IEC 60335-1:2010 modified + /A1:2013 + /A2:2016, Edition 5.2)	Household and similar appliances-General requirements, Edition 5.0
EN 60335-2-29	EN 60335-2-29:2004 + /A2:2010 (IEC 60335-2-29:2002 + /A1:2004 + /A2:2009, Edition 4.2) (also IEC 60335-2-29:2016, Edition 5.0)	Household and similar appliances-Requirements for battery chargers, Edition 4.2



# EU Declaration of Conformity



EN 60601-1	EN 60601-1:2006 + /AC:2010 + /A1:2013 (IEC 60601-1:2005 + /A1:2012)	Medical electrical equipment, Edition 3.1
<b>Electromagnetic Compatibility (to EMC- &amp; MDD-Directives):</b>		
EN 61000-6-1	EN 61000-6-1:2007 (IEC 61000-6-1:2005, Edition 2.0) (also IEC 61000-6-1:2016, Edition 3.0, not yet an EN-norm)	Immunity-residential, comm. & light-industrial environment, Edition 2.0
EN 61000-6-3	EN 61000-6-3:2007 + /A1:2011 & /AC:2012 (IEC 61000-6-3:2007 + /A1:2010)	Emission-residential, comm. & light-industrial environment, Edition 2.1
EN 55014-1	EN 55014-1:2006 + /A1:2009 & /A2:2011 (CISPR 14-1:2005 + /A1:2008 & /A2:2011, Edition 5.2) (also CISPR 14-1:2016, Edition 6.0, but not yet an EN-norm)	Emission-household appliances, Edition 5.2
EN 55014-2	EN 55014-2:1997 + /AC:1997, /A1:2001, /A2:2008 (CISPR 14-2:1997 + /A1:2001 & /A2:2008, Edition 1.2) (also CISPR 14-2:2015, Edition 2.0, but not yet an EN-norm)	Immunity-household appliances, Edition 1.2
EN 55022	EN 55022:2010 + /AC:2011 (CISPR 22:2008 modified, Edition 6.0)(Note: CISPR 22 is now replaced by CISPR 32:2012)	Emission-IT-Equipment, Edition 6.0
EN 55024	EN 55024:2010 (CISPR 24:2010, Edition 2.0) (also CISPR 24:2010 + /Corr.1:2011 + /A1:2015, Edition 2.1, but not yet an EN-norm)	Immunity-IT-Equipment, Edition 2.0
EN 55032	EN 55032:2012 + /AC:2013 (CISPR 32:2012 + /Corr.1:2012 + /Corr 2:2012, Edition 1.0) (also CISPR 32:2015, Edition 2.0, but not yet an EN-norm)	Emission-Multimedia Equipment, Edition 1.0
EN 60601-1-2	EN 60601-1-2:2007 from 31/12/2018: EN 60601-1-2:2015 (IEC 60601-1-2:2007 modified, Edition 3.0)(Note: for IEC: Edition 3.0 is replaced by IEC 60601-1-2:2014, Edition 4.0)	Medical equipment, EMC - Requirements and tests, Edition 3.0 Medical equipment, EMC - Requirements and tests, Edition 4.0

### Ecodesign (to ERP-Directive):

Commission Regulation (EC) No 278/2009	implementing Directive 2005/32/EC with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies (Note: not applicable to Battery Chargers, ref. Article 1.2 item c )
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### Additional Information:

Compliance with harmonised standards and technical specifications may have been verified by the manufacturer, by third party testing or by a Certification Body (NCB).

The products are considered Risk Class I devices according to the General Medical Devices Directive.

The product(s) may be produced at production sites (for specific product: see "Made in"-marking on the product):

Mascot Electronics AS P.O.Box 177, N-1601 Fredrikstad, NORWAY	Mascot Baltic OÜ Taevakivi 15 EE-13619 Tallinn ESTONIA	Mascot Power Supplies (Ningbo) Co.,Ltd No.128 Jinchuan Road, Zhenhai Ningbo 315221 CHINA
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The production sites are certified to standard EN 29001:2015 (ISO 9001:2015):

Mascot Electronics AS: Kiwa Teknologisk Institutt certificate ref. 044	Mascot Baltic OÜ: Metrosert certificate ref. K-144	Mascot Power Supplies (Ningbo) Co.,Ltd: DNV-GL certificate ref. 179027-2015
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The most recent issue of this Declaration is available at [www.mascot.com](http://www.mascot.com).

Fredrikstad, Norway	2018-02-22	Signed on behalf of Mascot Electronics AS  Finn-Erik Wailin, Compliance Manager
Place of issue	Date of issue	Name, function, signature