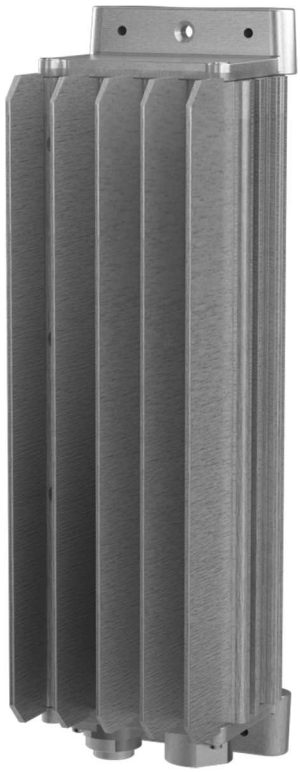
High efficiency and reliable IP65 power modules



With the rollout of 4G, LTE and other broadband services, the telecom infrastructure is installed closer to where people are. The challenge for the operators is to provide an optimal service without having a significant visual impact in the city streets, shopping malls or sports arenas.

The Chameleon 48/650 HE is targeting these applications. A compact and insignificant exterior and a powerful interior well protected by an IP65 housing. It is prepared for mounting close to the Telecom equipment on a pole or wall. The plugs provide fast connection without breaking the IP protection.

The Chameleon 48/650 HE 200ms improves quality of service in grids having short dips. The universal input Chameleon 48/650 UI can be powered from a $400V_{DC}$ remote feed in addition to normal AC mains.

Chameleon Standalone

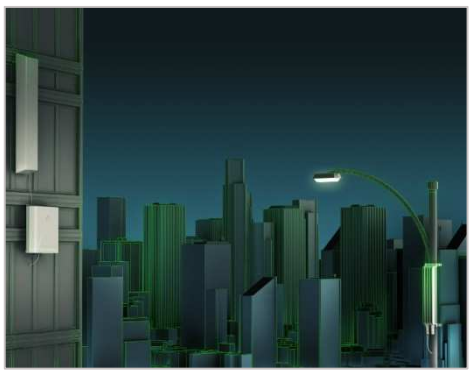
48/650 HE, 48/650 HE 200ms & 48/650 HE UI

Doc 241125.1xx.DS3 – v3

APPLICATIONS

TELECOM – MOBILE / WIRELESS

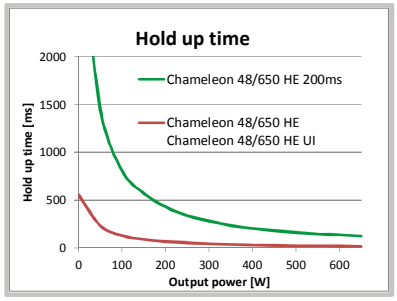
- Small cell
  - LTE
  - 3G
  - 4G
  - WiMAX



CHAMELEON 48/650 HE 200ms

KEY FEATURES

- SURGE PROTECTION ON INPUT AND OUTPUT
- CONVECTION COOLING – NO FANS
- IP 65 PLUG AND PLAY CONNECTORS
- HIGH EFFICIENCY (HE)
- WIDE TEMPERATURE RANGE
- POLE OR WALL MOUNT
- GLOBAL COMPLIANCE (CE, UL)
- TELECOM SPECIFICATIONS



Chameleon Standalone

Doc 241125.1xx.DS3 – v3

Model	48/650 HE	48/650 HE 200ms	48/650 HE UI
Part number	241125.105	241125.155	241125.185
INPUT DATA			
Voltage (nominal)	185 - 275 V_{AC}		300 - 400 V_{DC} / 185 - 275 V_{AC}
Voltage (operating range)	85 - 305 V_{AC}		200 - 400 V_{DC} / 85 - 305 V_{AC}
Frequency	45 - 66 Hz		0 Hz, 45 - 66 Hz
Current (maximum)	4.6 A_{RMS}		2.7 A_{DC} / 4.6 A_{RMS}
Power Factor	> 0.99 at full load		-
Surge	IEC 61000-4-5 (Test level X: 8 kV)[1]		
Protection	Fuse in L & N, Shutdown above 305 V_{AC} / 410 V_{DC}		
OUTPUT DATA			
Voltage (default)	53.5 V_{DC}		
Voltage (adjustable range)	43.5 - 57.6 V_{DC}		
Power @ 230 VAC	650 W @ Vin > 185 V_{AC}		650 W @V_{IN} > 300 V_{DC}/185 V_{AC}
Power (de-rated)	440 W @V_{IN} = 115 V_{AC}		500 W @V_{IN} = 200 V_{DC} 440 W @V_{IN} = 115 V_{AC}
Current	13.5 A @48 V_{DC}		
Current sharing, active via CAN bus	< ±5% of maximum current from 10 to 100% load		
Static Voltage regulation (10 - 100% load)	±0.5%		
Dynamic Voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms		
Hold up time, VOUT > 42 VDC	>20ms @ 650W load	>200ms @ 400W load	> 20ms @650W load
Ripple	< 150 mV peak to peak, 30 MHz bandwidth		
Surge	IEC 61000-4-5 (Test level X: 8 kV)		
Protection	ORing FET, Short circuit proof, High temperature protection		
OTHER SPECIFICATIONS			
Efficiency @ nominal input	< 95.5 %		
Isolation	3.0 kV_{AC} – input to output, 1.5 kV_{AC} – input to ground, 710 V_{DC} – output to ground		
Alarms, alarm relay (NO) Switching capacity max 75V/2A/60W	Open (no power available on output): low/high Mains or Temperature shutdown, Module Failure and Overvoltage Shutdown on output		
Cooling	Convection		
Altitude	4000m (~13000ft)		
Environmental Protection	Anodized aluminum chassis, IP65, vent		
Operating temperature	-45 to + 70°C [-49 to +158°F] [2][3]		
Dimensions[WxHxD] / Weight [excluding brackets]	96 x 321 x 107mm < 2.8 kg (6.2 lbs)	96 x 450 x 107mm < 3.8 kg (tbd lbs)	96 x 321 x 107mm < 2.8 kg (6.2 lbs)

DESIGN STANDARDS	
Electrical safety	EN 60950-1:2006+A11:2009+A1:2010+A12:2011, EN 60950-22:2006+A11:2008[4] UL 60950-1:2011, UL 60950-22:2011[4]
EMC	ETSI EN 300 386 v.1.6.1, FCC Part 15 Subpart 109:2013 EN 61000-6-1:2007, -6-2:2005, - 6-3:2007 + A1:2010, - 6-4:2007 + A1:2010
Environment	ETSI EN 300 019: -2-1 (Class 1.2), -2-2 (Class 2.3) & -2-4 (Class 4.1E & 4.2H) RoHS (2011/65/EU) and WEEE (2012/19/EU) compliant Seismic Zone 4 (Telcordia GR 63 Core)

1) Test voltage > 6kV and load below 1A, performance criteria B (reset and automatically restart).
3) RAL installation required for temperatures above 60°C [140°F].
2) Full sun radiation combined with ambient temperatures above 55°C [131°F] without wind/rain will lead to linear de-rating of maximum output power to 450 W @ 70°C [+158°F].
4) Internal surge protection does not comply with IEC 61643, so for applications where the product may be subject to transient overvoltages exceeding those for Overvoltage Category II, an AC Overvoltage Protection Device (OVP) complying with IEC 61643-series must be installed on the AC supply.

Model	Part number
Connectors for AC/input by outer cable diameter (Screw terminal max 2.5mm^2)	7-17mm: 343665 (Binder 99-4222-300-04) 6-9.5mm: 334321 (Binder 99-4222-00-04) 8-10mm: 334322 (Binder 99-4222-110-04) 10-12mm: 334323 (Binder 99-4222-14-04) 12-14mm: 314804 (Binder 99-4222-160-04)
Connectors for DC/output by outer cable diameter (Screw terminal max 1.5mm^2)	7-17mm: 343667 (Binder 99-4217-300-07) 6-8mm: 334328 (Binder 99-4217-00-07) 8-10mm: 334329 (Binder 99-4217-110-07) 10-12mm: 334330 (Binder 99-4217-14-07) 12-14mm: 314805 (Binder 99-4217-160-07)
Pole mount kits	40-135mm Ø clamps: 241125.910

Specifications are subject to change without notice.