

# CDNEs for CISPR15/16 testing

CDNEs specifically designed to measure radiated emissions from Luminaires

- Alternative technique for radiated emissions measurements in accordance with EN 55015 compliance requirements.
- Avoids the need for emission measurements on Open Area Test Sites
- Fully compliant with CISPR16.
- High specification .. No compromises.
- Available in M2 and M3 models.
- Improved repeatability and accuracy in comparison with IEC61000-4-6 CDNs



These Coupling/Decoupling Networks (CDNE) facilitate the measurement of EMC RF emissions by coupling RF directly from the power cables connected to the equipment under test.

This technique is now specified in EN 55015 ed 9, as an acceptable alternative to the use of a conventional OATS test technique, involving antennas and calibrated test sites.

*Photo shows CDNE-M2 model*

**Comprehensive** Both M2 and M3 models available.

**Compliance** The these CDNEs are 100% compliant with the specifications detailed in CISPR15, ed 9, CISPR16-1-2 and CISPR16-2-1. Frequency range is 30MHz to 300MHz.

**Safety** These CDNEs are fitted with shrouded 4mm safety connectors, easy to connect and entirely safe.

**Integrity** These CDNEs offer direct connection from the cable under test to the receiver/analyser. They avoid all the uncertainties related to the use of OATS. Measurements are consistent and repeatable.

LAPLACE INSTRUMENTS LTD



# CDNEs for radiated RF emissions measurements according to EN 55015 ed 9

Previous editions of EN 55015 allowed the use of IEC61000-4-6 CDNs for the measurement of radiated emissions up to 300MHz. CISPR 15 edition 9 has now changed that requirement so that CDNs are no longer considered acceptable and CDNEs should be used instead. Using a CDNE instead of CDN offers improved measurement reproducibility due to standard's requirements for more restrictive limits of asymmetrical impedance, phase angle, symmetrical impedance and internal attenuation  
The CDNEs must offer:

- Reduced common mode (CM) impedance tolerance
- an additional phase tolerance requirement
- a 100R differential mode impedance.
- Longitudinal Conversion Loss (LCL) of >20dB to prevent symmetrical signals on the cable affecting measurement results.

Note that CDNE limits between 200 MHz and 300 MHz are more stringent than the limits given in previous editions of CISPR 15 to incorporate an additional margin (lower limits) for frequencies above 200MHz.

CISPR 15 edition 9 also specifies that the mains supply cable of the EUT should be terminated with a CDNE positioned on the reference-ground plane for the OATS, SAC or FAR measurement method.

## Technical Specifications

Frequency range:	30 to 300 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to line):	520 V
AC max voltage (Line to ground)	300V (M3 only)
DC max. voltage:	300 V
Current max:	10 A
Test voltage:	2000 V AC, 2 s
Mains sockets (EUT- and AE port):	4 mm, safety
Common mode impedance (EUT port):	150 Ω +10 / -20 Ω
Phase angle (EUT port):	0° ±25°
Differential mode impedance (EUT port):	100 Ω ±20 Ω
Coupling path (EUT / RF port)	
Connection (RF port):	BNC, 50 Ω
RF voltage (generated from EUT):	<10 V
Transducer factor / Voltage division factor (EUT / RF port) incl. internal 10 dB attenuator:	20 dB ±1.5 dB
Insertion Loss (EUT / AE port), f <400 Hz:	>0.1 dB
Decoupling of CM disturbance (RF port / AE):	>30 dB

### Mechanical specifications

Size (W x H x D) in mm:	105 x 75 x 125
Weight:	approx. 700 g

### Model no. and options

Part number	Description
CDNE-M2	CDNE M2, 10 A, 30 to 300 MHz (banana), L, N, Coupling Decoupling Network for Emissions measurement, conform with CISPR 16-1-2 and CISPR 15
CDNE-M3	CDNE M3, 10 A, 30 to 300 MHz (banana), L, N, E. Coupling Decoupling Network for Emissions measurement, conform with CISPR 16-1-2 and CISPR 15
CDNE-TC	Traceable calibration (ISO17025), order only with the device
CAS CDNE	Calibration kit for CDNE, traceable calibration and certificate included



CDNE-M3

Available from:

Distributed by:  
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