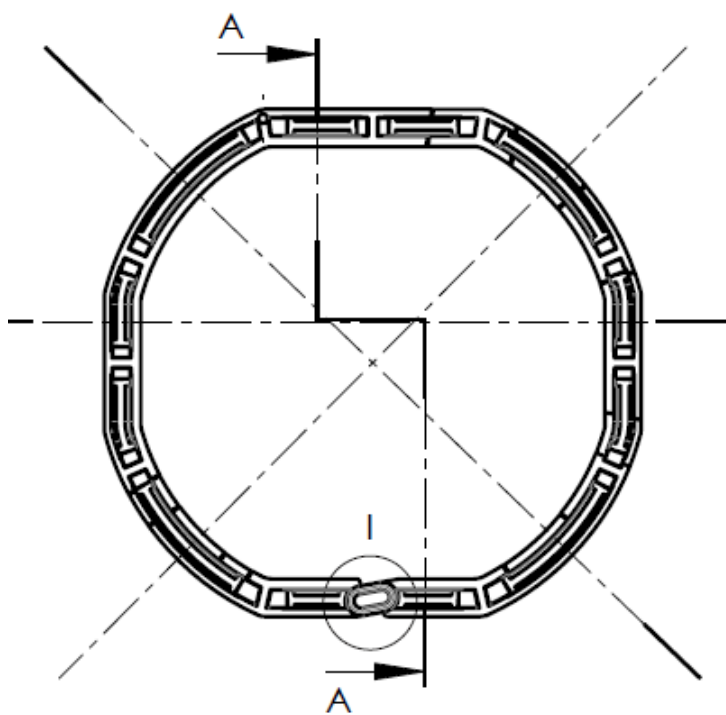
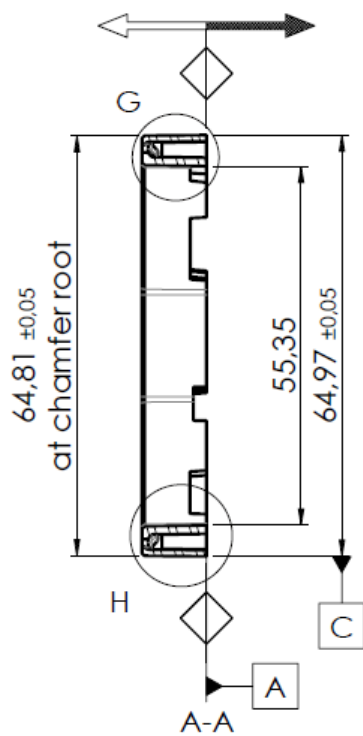
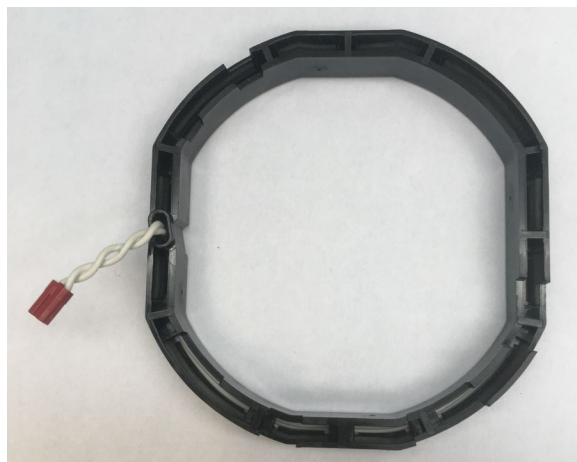




Technical specifications	
Reader type	Contactless
Cards format accepted	ISO/IEC 14443, Type A&B standard EMV specifications Mifare: • Mifare classic 1k / classic 4k • Mifare mini • Mifare Ultralight /Ultralight C “Ultralight C” managed as “Ultralight” (DES authentication not implemented) • Mifare DESFire 2k/4k/8k • Mifare Smart MX (Type A) NFC Master, passive target only of ISO 18092 Calypso
Information processing	Compliant with EMV specifications 4 indicator lights & buzzer
Field measured (OATS)	5.86dBμA/m
Operating volume	Up to 8 cm

Contactless Functional description:

- Specifications: ISO14443
- Modulation: ASK (100%) TYPE A or ASK (10%) TYPE B
- Frequency band: 13.56MHz
- Loop antenna technology (coiling)
- Field measured (OATS): 5.86dBμA/m

The Contactless link is used as a card reader. The Contactless part can accept a reader/writer command according to ISO14443 card interface scheme.

The operating frequency is 13.56MHz (main crystal input frequency 27.12MHz).

The Contactless design is based on the NXP PN5190 Chipset managed by the secure processor via SPI.

ContactLess antenna Technology

The 13.56MHz antenna is based on a loop antenna technology (70.0mm*60.4mm)/coiling. It is a loop antenna type with 2 turns. The 13.56MHz resonant frequency is achieved by a RLC tuning circuit. L is the inductance of the loop antenna and R its resistance. The 13,56MHz RF technology operates by inductive coupling (magnetic field) between two antennas.

The radiated power (Electric field) is very weak because there is not a real radiated element. That's why the 13.56MHz antenna gain is very low (compared with a dipole antenna at 13,56MHz) and difficult to measure. For more details, please refer to LCIE test report N°: 14531571-777341-A.

The antenna is not accessible by the user.