

LV CCA Wire

Inquiry and validation checklist

For individual wires in an LV concentric neutral. A service phase conductor is a separate duty and follows its own requirements.

1. Start with the construction you have

- Target country / market and the customer or utility document issue (or Not yet decided).
- Existing copper-wire drawing: wire diameter, count, actual metallic area and wire length / cable length factor k.
- Known R20 limit, core material / temper, copper fraction with vol.% or wt.% basis, trial quantity and spool needs.
- Conductor position and required ENEL / EPM construction, where applicable; keep nominal area separate from measured metal.

2. Candidate specification and inspection records

Send your existing copper-wire drawing for a candidate wire specification. Diameter, core material, temper, copper-fraction basis and guaranteed properties are agreed in the proposed specification.

Ask which material inspection records are available for your proposed specification.

Evidence stages: wire-tested / cable-trial / customer-qualified / production-supply. A wire test is not a finished-cable release.

3. A labelled model reference — RT-WIRE-COMP-1

Treating nominal 8 mm^2 as actual area only for this illustration: $R_{\text{max}} = 3.08 \text{ ohm/km}$ and $k = 1$ require 69.97159091 %IACS. This is calculated, not an ENEL material-conductivity limit.

Geometry check: 12 round wires of diameter 0.5 mm contain 2.35619449 mm^2 of metal, not 8 mm^2 .

The online tool also compares mass and wire cost. Without actual prices, quotation dates and matching currency / tax / freight basis, no saving percentage is given. Ideal densities 8.96 g/cm^3 copper and 2.70 g/cm^3 aluminum are model parameters only.

Equal resistance does not establish equal fault duty. Recheck wire count, space, outside diameter, connections and finished-cable requirements.

From drawing review to project validation

1. Drawing and cost review

Your team: Current copper-wire arrangement or drawing, target market, known resistance and quantity.

Raytron / agreed support: Candidate wire specification, comparison basis, missing inputs and trial proposal.

Gate: Agree the application, candidate material and sample task before ordering a trial.

2. Wire and machine trial

Your team: Agree trial quantity, spool, process checks and the cable-machine trial owner.

Raytron / agreed support: Agree inspection items, sample charges, responsibilities and the adjustment route if a trial does not meet the agreed requirements.

Gate: Meet the agreed wire and processing criteria. Wire results alone do not release a finished cable.

3. Cable and accessory validation

Your team: Cable maker and project parties confirm fault, connection and environmental test scope, institution, costs and release owner.

Raytron / agreed support: Provide the agreed material inputs for the project validation plan.

Gate: The responsible project parties approve the finished-cable and accessory evidence; timing is agreed per project.

Supply conditions and the applicable reference issue

Sample quantity, charges, lead time, packaging and joint policy are confirmed for the proposed wire specification in the quotation.

ENEL — GSCC014 Rev.00 — Amendment 01/2025; PDF pp. 55, 59, 60

Grupo EPM — ET-TD-ME01-18 Rev.2 — published 2018; PDF pp. 1, 2, 6

Original links checked 2026-10-20. Historical publication is not confirmation of the current project issue. CENS catalogue content could not be verified; ask for the controlled project version.

[Open the LV concentric neutral wire inquiry form](#)