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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

A candidate wire specification defines diameter, core material, temper, copper content and its measurement basis, together with electrical and mechanical requirements.

Wire inspection covers dimensions, copper-layer continuity, electrical resistance and mechanical properties against the selected 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: Rmax = 3.08 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.

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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 technical support: Candidate wire specification, resistance and mass comparison, and a sample trial proposal.

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

Next stage: 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 technical support: Provide the agreed material inputs for the project validation plan.

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

Supply conditions and the applicable reference issue

The quotation sets sample quantity, charges, packaging, delivery and joint requirements for the selected wire specification.

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

Source editions: ENEL GSCC014 Rev.00 Amendment 01/2025 and EPM ET-TD-ME01-18 Rev.2 (2018). Apply the document issue and cable construction specified for the project.

Open the LV concentric neutral wire inquiry form