

Loop/Network Wiring Specification

LuxIntelligent requires data cabling to be suitable for the nature and size of the installation. The lower quantity of lights and shorter loops results in a narrower (and less expensive) gauge of cable being required.

Radial vs loop (ring) circuit wiring

Regarding the wiring circuit used to connect devices to the LuxIntelligent panel, it is possible but **not recommended to use a radial circuit**.

Radial circuits severely hinder identification of earth faults, continuity or short circuit issues. It is **highly recommended that loop (ring) circuits are always used**.

TOP TIP

In some instances where a radial circuit is suitable, such as running a radial down a stairwell, it is important to ensure that any drawings as fitted are clearly marked as to where the radial originates.

Signalling circuits

All cables are Belden twisted pair (or equivalent). Please note:

- 8762, 8760 & 8719 types are screened, twisted pair and are recommended where a high level of high frequency electrical noise is prevalent in the installation.
- 8205, 8461, 8471 types are unscreened, twisted pair and are suitable for use in environments where there is no risk of contamination by high frequency asymmetrical electrical noise.
- Where the installation requires cables with low smoke and fume emissions, please use Belden LSF cables, types 8762NH, 8760NH, 8719NH, 8205NH, 8461NH & 8471NH.

The table below quotes the recommended maximum runs for the specified load conditions. All distances are quoted in metres and the maximum circuit length should be no greater than 1500m unless stated.

Cable types are defined by their Belden equivalents (universally referenced)

Cable	Cable size		Voltage rating	Conductor Ω (per Pr)	Maximum Cable Run (in metres per installed number of PLU modules)								
	AWG	mm ²			≤ 50	≤ 75	≤ 100	≤ 125	≤ 150	≤ 175	≤ 200	≤ 225	≤ 249
PLU (LXP) Radial / Loop													
8762 / 8205	20	0.5	300	71.6 Ω /km		1500	1200	1000	800	700	600	550	500
8760 / 8461	18	0.8	300	45.4 Ω /km				1500	1300	1100	950	850	750
8719 / 8471	16	1.3	600/300	28.6 Ω /km							1500	1350	1200
8720 / 8473	14	2.0	600/300	19.0 Ω /km									1500
I/O (LXP-110) Radial / Loop⁵													
8762 / 8205	20	0.5	300	71.6 Ω /km	600								
8760 / 8461	18	0.8	300	45.4 Ω /km	950								
8719 / 8471	16	1.3	600/300	28.6 Ω /km	1500								
8720 / 8473	14	2.0	600/300	19.0 Ω /km	1500								