

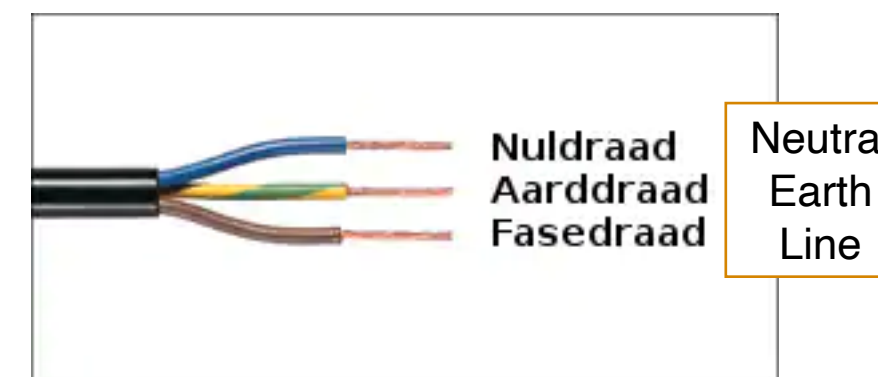
# The difference between 1 phase and 3 phase track lighting

If you're looking for track lighting, you must have heard about 1 or 3 circuits or phases already. On this page, we'll explain the difference between those two.

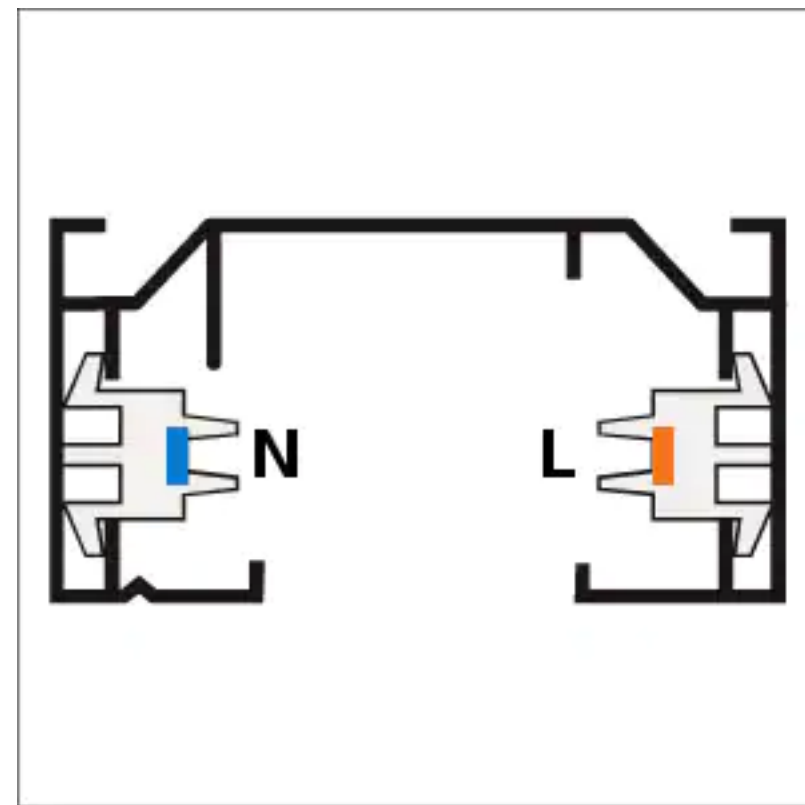
## What is a phase?

In a standard power cable with three veins, you'll find a phase, a neutral wire and a protective earth/ground wire.

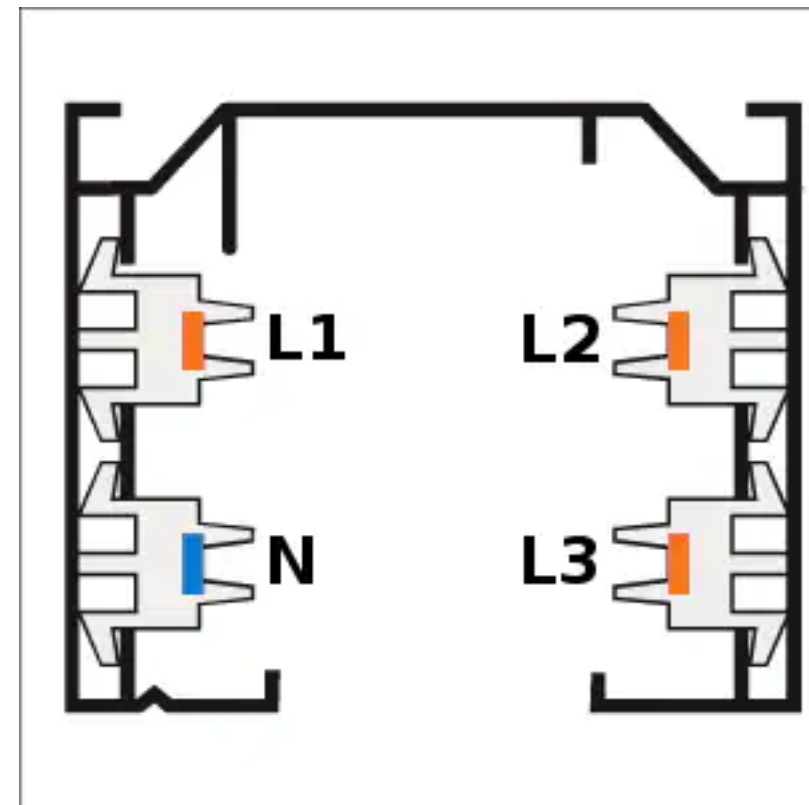
The phase is the wire that's under voltage relative to the neutral and protective wire. The phase leads the electrical current, together with the neutral wire, from and to connected equipment.



## 1 phase vs. 3 phases



In a 1 phase rail (or 1 circuit rail) the electricity runs between just two wires, the phase (L for line) and the neutral wire (N). This means that all light sources on the rail are controlled together and will always be switched on and off together.



3 phase rails have three phases (L1, L2, L3), which can be combined separately with the neutral wire (N). This creates the possibility to have three different circuits on your track. These can all be controlled separately.

To be able to use the three circuits on the rail, the rail has to be connected to a power cable with five veins.

## Pros and cons

Both systems have their advantages, but at dmLights we prefer to work with the 3 phase system. Let us walk you through the advantages and disadvantages of this system.

### Pros:

- As mentioned before, 3 phase rails offer the possibility to create three different circuits. These circuits can be controlled separately.
- The choice in 3 phase fixtures is much bigger than that in 1 phase fixtures.
- A 3 phase rail is easier to install. There's more space to tuck away your cables. Because they're bigger, they also cover the hole from which your connection cable exits better. Furthermore, they're sturdier and more stable.
- You don't need to create three different circuits with your 3 phase rail. You can also use them as a 1 phase rail (or 2 phase, but that's less common). To use a 3 phase rail as a 1 phase rail, you have to connect L1, L2 and L3 to each other. Then it doesn't matter anymore in which position you turn the spots' switch, they'll always shine.
- A 3 phase rail supports three times the power of a 1 phase rail (interesting for stores with many spots on long rails).

### Cons:

- 3 phase rails are a bit more expensive than 1 phase rails.
- Esthetically, 3 phase systems look a bit less refined, because there's a switch on their base to choose the phase to which they have to connect.

### 1 phase rail



### 3 phase rail



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