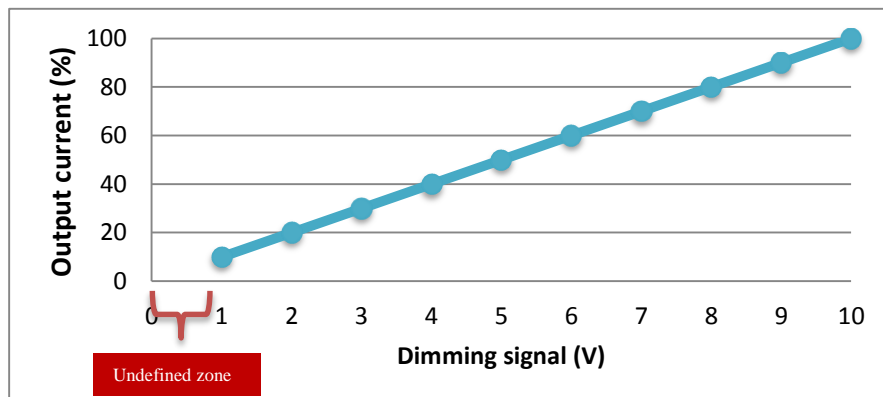


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## Difference between DC 1-10V or 0-10V dimming methods in MW dimmable LED driver

### DC 1-10V:

Meanwell LED driver offer dimming function to fit the modern lighting control demand. LED driver will change its output current based on 3 different input signal/setup including DC 1-10V, PWM and 100K ohm resistor dimming. PWM signal and resistor type of dimming is rather straightforward and not the scope of this article. The principle of DC1-10V dimming is also a simple method describing output of driver is fully on i.e. 100% in case the dimming signal is given with 10V externally or just simply make the dimming wires open whereas output level is set at 10% in case the dimming signal is given at 1V. 100% is the maximum of driver and 10% is the minimum level. The dimming response can be found in the figure below. The 0.1mA current is sourcing out from the dimming wire of LED driver and therefore it is perfect for passive electronic dimmer application. On the other hand it is also possible for using any active dimmer to control the output of LED driver. The output status is not guaranteed when the dimming signal is less than 1V or even short the dimming wires. The output of LED driver could be completely switched off or there is still some light coming out of LED module. In case application would require to completely turn off the driver, one switch at AC mains of driver is required.



DC1-10V Output vs Dimming input

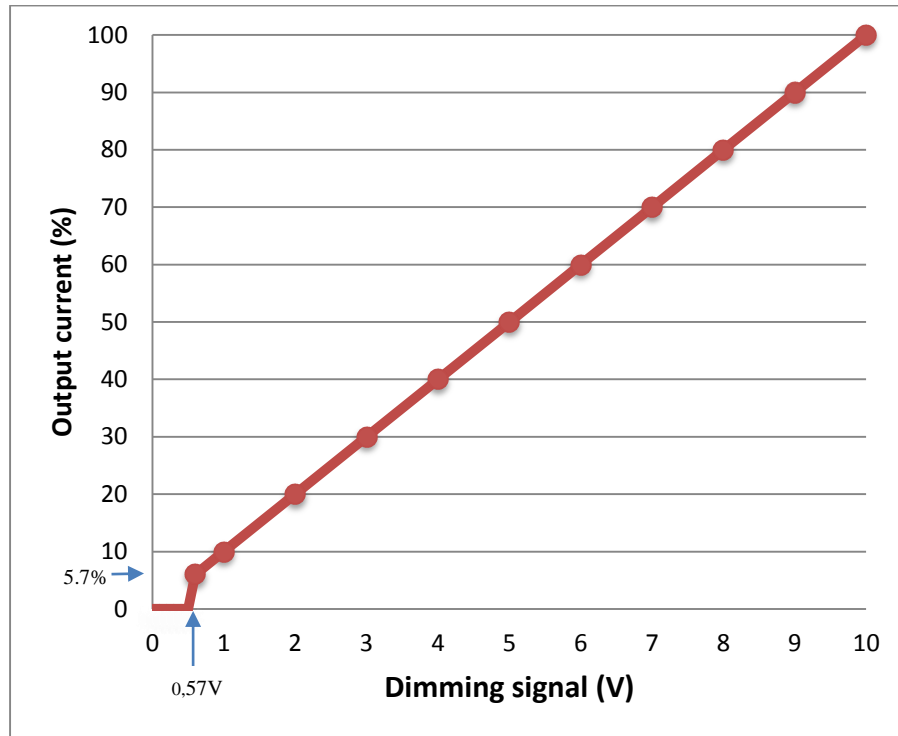
### DC 0-10V:

DC 0-10V is considered as the second generation of 3 in one dimming. PWM and 100K resistor dimming is still same as first generation. Difference between DC0-10V and DC1-10V is addressed here.

The maximum level is still 100% in case the dimming signal is given at 10V or open the dimming wires. However the minimum level for DC0-10V is 5.7% in case the dimming



signal is given at 0.57V. In case the dimmer is giving lower than 0.57V or user just short the dimming wires, the LED driver will cut off the output current resulting no light output in the LED module. The dimming response can be found in the figure below.



DC0-10V Output vs Dimming input

**Summary:**

DC 0-10V is considered as the second generation of dimming method providing the minimum dimmable level is 5.7% and output level is zero (output completely switch off guaranteed) in case the input signal is less than 0.57V. The table in below shows the comparison.

	Max. output level (%)	Min. output level (%)	Output level when dimming signal less than 0.57V	Output level when dimming wire is shorted
<b>DC1-10V</b>	100	10	Not defined	Not defined
<b>DC0-10V</b>	100	5.7	0	0