

# NOTE FOR LOEVSCHALL DIMMABLE LED DRIVER

## NOTE FOR LOEVSCHALLS DÆMPBARE DRIVER

(14-320d/14-320d-ip44)

---

The Loevschall dimmable LED driver is rated at a maximum wattage of 14W. How can the dimmable LED driver be connected to 6pcs ID-LED spots, at a rating of 2.5W each?

På Loevschall nye dæmpbare driver er den maksimale effekt opgivet til 14W. Hvordan hænger det sammen, når denne driver kan trække ID Spots, hver på 2,5W?

---





The European norm EN62347 states, that the maximum output current must be within +/- 10%. For a dimmable LED driver the output current will always fluctuate. The output current is depending on the number of spots, which are connected.

*The more spots connected, the lower the current.*

On the rim of Loevschall ID-LED spot it states that the spot can withstand maximum 350mA. When connected to 350mA, the spot will use a maximum wattage of 2.5W.

If a dimmable LED driver is marked with 350mA, then the interval, for which the current varies, will be over 350mA which it is designed for according to the norm (350mA + 10%). However this will cause the spot to become defective.

We have therefore designed our dimmable LED driver so, that two ID-LED spots connected to the Loevschall driver, will be supplied with 340mA and six ID-LED spots connected to the Loevschall driver will be supplied with about 305mA. Is the average current then set at 320mA, then the current output will be within +/- 10%, and at the same time the dimmable LED driver will not supply more than 350mA at any given time.

**The wattage used in a resistor (or an ID-LED spot) can be calculated using the formula below:**

Wattage (W) = Voltage (V) x Current (I)

$W = V \times I$

#### **Six spots:**

In each spot the wattage is:  $W = 7 \times 0,305 = 2,135W$

In total for six spots the wattage is:  $W = 6 \times 2,135W = 12,81W$

#### **Two spots:**

In each spot the wattage is:  $W = 7 \times 0,34 = 2,38W$

In total for two spots the wattage is:  $W = 2 \times 2,38W = 4,76W$

*Since the dimmable LED driver can supply 14W, then we are well below the maximum rating for the dimmable LED driver.*



Det er den europæiske norm EN62347, som foreskriver, at udgangsstrømmen maksimalt må afvige +/- 10%. For en dæmpbar driver vil udgangsstrømmen altid afvige. Udgangsstrømmen afhænger blandt andet af antallet af spots. *Jo flere spots, jo lavere strøm.*

Som det kan ses på kanten af Loevschall ID-LED spot, kan spotten maksimalt holde til 350mA. 350mA giver en effekt i spotten på maksimalt 2,5W.

Hvis vi skriver 350mA på driveren, vil det interval, inden for hvilken strømstyrken varierer, ligge langt over de 350mA, som den er designet til (350mA +10%), hvilket vil ødelægge spotten.

Vi har derfor fået designet vores drivere således, at to ID-LED spots forbundet til Loevschalls driver, vil blive forsynet med 340mA og seks styk ID-LED spots forbundet til Loevschalls driver vil blive forsynet med cirka 305mA. Fastlægges middelstrømmen derfor til 320mA, vil strøm-outputtet fra driveren aldrig variere mere end +/- 10% som normen fremskriver, og samtidig vil driveren ikke levere mere end 350mA på noget tidspunkt.

**Elektrisk effekt afsat i en modstand (eller en spot) kan beregnes ved hjælp af formlen:**

Den afsatte effekt (P) = Spændingen (U) x Strømmen (I)

$$P = U \times I$$

#### **Seks spots:**

I hver spot afsættes  $P = 7 \times 0,305 = 2,135W$

I alt i 6 spots afsættes  $P = 2,135W = 12,81W$

#### **To spots:**

I hver spot afsættes  $P = 7 \times 0,34 = 2,38W$

I alt i 2 spots afsættes  $P = 2 \times 2,38W = 4,76W$

*Da driveren maksimalt kan levere 14W, er vi langt under maksimal belastning, som driveren kan holde til.*