Wolf ATEX Transformer and Lamp Apparent Power (VA) and recommended cable lengths.

It is a requirement of the ATEX /IECEx Certification that the transformer is operated in accordance with the ambient temperatures and maximum powers given on the approval label.

Running at more than the prescribed maximum VA in a given ambient temperature, will result in the transformer no longer being certified for use in the hazardous area

Table 1 below contains a list of Wolf lighting products and their VA ratings. total VA is the sum of all products connected to the transformer.

Table 1 Apparent power of Wolf lamps.

Product	Apparent power (VA)			
	<24V	<42V	<48V	110V
LX-400	40VA	48VA	51.2VA	26VA
LX-400E	26VA	26VA	26VA	26VA
WF-300XL	84VA	96VA	104VA	62VA
WF-250XL	42VA	48VA	52VA	31VA

Examples:

If the ambient temperature allows a maximum power of 400VA to be drawn, then a 24V output transformer could be used to power 4 off WF-300 and 2 off LX-400E.

Qty	Product	VA / product	Subtotal VA
2	LX-400E	26 VA	52 VA
4	WF-300XL	84 VA	336 VA
		Total VA	388 VA

Total VA is 388VA which is within the 400VA limit.

Conversely, if the ambient temperature only allows for a maximum power of 250VA then a 24V output transformer could be used to power 2 off WF-300 and 2 off LX-400

Qty	Product	VA / product	Subtotal VA
2	WF-300	84 VA	168 VA
2	LX-400	40 VA	80 VA
		Total VA	248 VA

Total VA is 248VA which is within the 250VA limit.

Note.
Transformers with part numbers suffixed /2FXX are equipped with 2 output fuses, this permits the use of longer cable lengths as the load is distributed across two smaller value fuses. This needs to be accounted for when connecting load to the transformer.

For example, if the transformer is fitted with 2 off 8A gG fuses (instead of a single 16A gG) then there is one fuse per pair of sockets. The user must ensure that the current drawn from each socket pair, does not exceed the rating of a single 8A fuse.

Where apparatus other than Wolf lighting products are connected, its load should be checked to ensure it is suitable for use with type gG (general) fuses.

In the event of a fault in a circuit connected to the transformer, it is important that this fault current is interrupted by the output fuses before overheating causes damage to circuits and a potentially unsafe condition in the safe or hazardous area. The user must, therefore, ensure that the maximum total impedance of the potential fault current flow path, from the source to the point of a fault, will not prevent this happening.

The connected circuit impedance is proportional to the length and conductor area of the cable. Table 2 contains Wolf's recommended maximum cable lengths for given transformer output voltage and fuse fitted. As can be seen from Table 2, reducing the fuse value increases the permitted cable length.

However, transformers fitted with two output fuses, due to the centre tap of the secondary being connected to earth (CTE), will have shorter permitted cable lengths than non CTE versions of the same output voltage.

Check model identification label on lid to establish whether the output of the transformer is CTE connected.

Products with long cable lengths greater than 20m (at 24V) must be checked to ensure the calculated voltage drop will not prevent the apparatus from operating within the specified voltage tolerance (see product instructions).

The total cable length of a string of linkable lights is the combined total of all the lamps in the chain. Where cables with different conductor areas are combined, the maximum cable length should be selected based on the smallest conductor area.

Table 2 Recommended maximum cable lengths for given transformer output voltage and fuse fitted.

2.5mm² Cable			4mm² Cable		
Output Voltage	Output Fuse	Max cable length	Output Voltage	Output Fuse	Max cable length
110V	4A gG	200M*	110V	4A gG	200M*
110V (CTE)	4A gG	200M*	110V (CTE)	4A gG	200M*
42V	10A gG	70M	42V	10A gG	110M
42V	8A gG	100M	42V	8A gG	160M
42V	6A gG	130M	42V	6A gG	200M*
42V	4A gG	180M	42V	4A gG	200M*
24V	16A gG	20M	24V	16A gG	35M
24V	12A gG	25M	24V	12A gG	40M
24V	10A gG	35M	24V	10A gG	55M
24V	8A gG	40M	24V	8A gG	75M
24V	6A gG	60M	24V	6A gG	110M
24V	4A gG	100M	24V	4A gG	150M

1mm² Cable			1.5mm² Cable		
Output Voltage	Output Fuse	Max cable length	Output Voltage	Output Fuse	Max cable length
110V	4A gG	200M*	110V	4A gG	200M*
110V(CTE)	4A gG	100M	110V(CTE)	4A gG	150M
42V	10A gG	30M	42V	10A gG	40M
42V	8A gG	40M	42V	8A gG	60M
42V	6A gG	55M	42V	6A gG	80M
42V	4A gG	75M	42V	4A gG	110M
24V	12A gG	10M	24V	16A gG	10M
24V	10A gG	15M	24V	12A gG	15M
24V	8A gG	20M	24V	10A gG	20M
24V	6A gG	30M	24V	8A gG	30M
24V	4A gG	40M	24V	6A gG	45M
			24V	4A gG	60M

* Maximum practical cable length for transportable products.

For additional advice regarding transformer loading and permissible maximum cable lengths for given transformer output voltage and fuse fitted please e-mail: *info@wolfsafety.com*