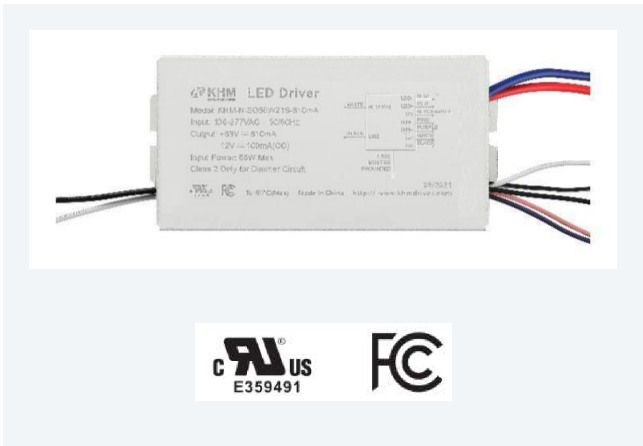


PRODUCT OVERVIEW

The NISG50W series is a 50W constant-current LED driver for North American input voltages. It delivers high conversion efficiency, supports several dimming methods with full dim-to-off, and includes an isolated 12V / 0.1A auxiliary output. Suited to high bay, industrial and grow-light fixtures.

FEATURES

- Efficiency up to 92%
- Isolated dimming with dim-to-off
- Isolated 12V / 0.1A auxiliary power output
- Surge protection: 4kV differential mode, 6kV common mode
- Standby power < 0.5W
- Protection: short circuit (SCP), over-temperature (OTP)
- UL 8750 (cURus, File E359491); FCC Part 15 Class B
- 5-year warranty



MODEL LIST

MODEL	INPUT VOLTAGE	MAX OUTPUT POWER	OUTPUT VOLTAGE	OUTPUT CURRENT	THD (TYP)	PF (TYP)	EFFICIENCY (TYP)	MAX CASE TEMP
KHM-NISG50W21*-810	100-277Vac	51W	63V	0.78-0.84A	10%	0.93	92%	90°C
KHM-NISG50W21*-770	100-277Vac	48.5W	63V	0.74-0.80A	10%	0.93	91%	90°C
KHM-NISG50W21*-730	100-277Vac	46W	63V	0.69-0.77A	10%	0.93	91%	90°C
KHM-NISG50W21*-680	100-277Vac	42.8W	63V	0.65-0.71A	10%	0.93	90%	90°C
KHM-NISG50W21*-560	100-277Vac	35.3W	63V	0.54-0.58A	10%	0.93	90%	90°C
KHM-NISG50W21*-450	100-277Vac	29W	63V	0.43-0.46A	10%	0.93	90%	90°C
KHM-NISG50W21*-460	100-277Vac	30W	63V	0.44-0.47A	10%	0.93	90%	90°C

Notes: (1) Test conditions: 277Vac input, full load, Ta = 25°C. (2) Performance is guaranteed within the recommended operating voltage range; performance across the output voltage range must be verified with the complete fixture. "*" = function suffix (see table below). Highlighted row: KHM-NISG50W21S-460 (30W).

FUNCTION SUFFIX OPTIONS ("*")

SUFFIX	DIMMING	LIGHT CONTROL	12V AUX OUTPUT
S	✓	✓	✓
C	✓	✓	
M	✓		✓
D	✓		

SUFFIX	DIMMING	LIGHT CONTROL	12V AUX OUTPUT
P		✓	✓
L		✓	
A			✓
N			

INPUT PERFORMANCE

PARAMETER	MIN	TYP	MAX	NOTES
Rated input voltage range	120Vac	-	277Vac	
Input voltage range	100Vac	-	305Vac	
Input frequency range	47Hz	50/60Hz	63Hz	
Maximum input current	-	-	0.65A	100Vac, full load
Maximum input power	-	-	65W	100Vac, full load
Inrush current peak (120Vac)	-	-	45A	Cold start
Inrush current peak (277Vac)	-	-	100A	Cold start
Standby power	-	-	0.5W	
Power factor (PF)	0.95	0.99		120Vac / 60Hz, full load
Power factor (PF)	0.90	0.93		277Vac / 60Hz, full load
Total harmonic distortion (THD)		5%	10%	120Vac / 60Hz, full load
Total harmonic distortion (THD)		10%	20%	277Vac / 60Hz, full load

OUTPUT PERFORMANCE

Values below are published for the 63V / 0.81A (810 mA) configuration.

PARAMETER	MIN	TYP	MAX	NOTES
Output voltage range	47V	-	63V	
Rated output voltage	50V		63V	
Rated output current	0.78A	0.81A	0.84A	
Maximum no-load output voltage			100V	
Efficiency @ 120Vac	90%	91%		Output 63V, 0.81A
Efficiency @ 277Vac	91%	92%		Output 63V, 0.81A
Current accuracy	-5%		+5%	
Start-up current overshoot			10%	Full load
Start-up time			700 ms	120Vac, full load
Line regulation	-5%		+5%	
Load regulation	-5%		+5%	
Short circuit protection			5W	No damage under sustained short circuit; constant-current mode

AUXILIARY OUTPUT & DIMMING

PARAMETER	MIN	TYP	MAX	NOTES
12V auxiliary output: voltage	11V	12V	13V	
12V auxiliary output: current			0.1A	
0-10V dimming (optional): recommended dimming voltage	0V		10V	
0-10V dimming (optional): dimming output range			100% Iomax	
Resistance dimming (optional): external resistance	0kΩ		100kΩ	
Resistance dimming (optional): dimming range	0% Iomax		100% Iomax	DIM+ output current is 100μA
PWM dimming (optional): input amplitude	1.8V		10V	
PWM dimming (optional): input frequency	0.1kHz		5kHz	
PWM dimming (optional): duty cycle	1%		99%	
PWM dimming (optional): detection threshold		1.2V		

GENERAL

PARAMETER	VALUE	NOTES
Average lifetime	50,000 hours	Case temperature ≤ 75°C, full load
MTBF (estimated)	50,000 hours	Case temperature 75°C
Moisture rating	Suitable for damp locations	
Max case temperature (Tc)	90°C	
Warranty	5 years	Case temperature 75°C
Weight	225 g	
Dimensions (L × W × H)	109 × 51.2 × 27.6 mm	

All performance figures are typical values measured at Ta = 25°C unless otherwise noted.

ENVIRONMENTAL

PARAMETER	MIN	TYP	MAX	NOTES
Operating temperature	-40°C		+50°C	
Storage temperature	-40°C	25°C	+85°C	
Operating humidity	20% RH		85% RH	
Storage humidity	10% RH		95% RH	

SAFETY & EMC STANDARDS

ITEM	STANDARD	CERTIFIED
Safety	UL 8750	✓

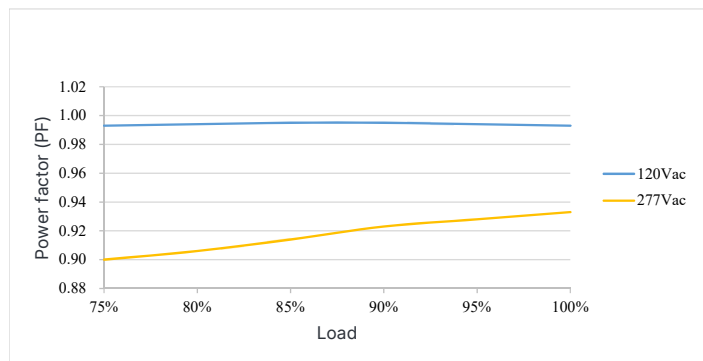
EMI / EMS	STANDARD	LEVEL
Conducted EMI	FCC Part 15 Subpart B	Class B
Radiated EMI	FCC Part 15 Subpart B	Class B
Surge	IEC/EN 61000-4-5	DM 4kV, CM 6kV

SAFETY TEST	LIMIT	CONDITION
Insulation	UL 8750	
Input to output	/	
Input to case	5 mA @ 350Vac	
Output to case	5 mA @ 350Vac	
Grounding impedance	$\leq 0.1\Omega$	25A / 1 min
Leakage current	≤ 0.75 mA	277Vac

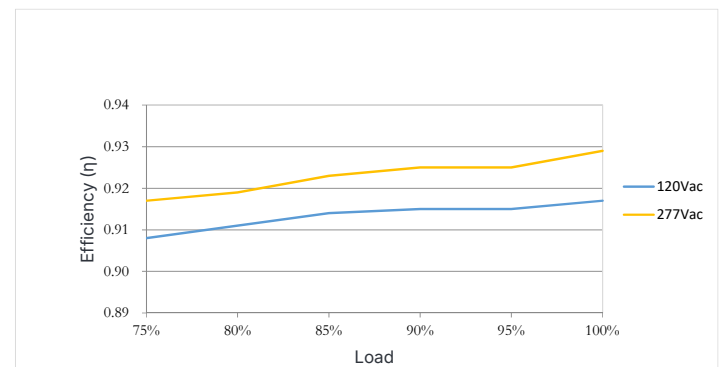
Notes: (1) The driver meets the applicable EMC standards; as a component, final EMC compliance must be confirmed in the complete fixture. (2) For hi-pot (withstand voltage) testing, short L and N together on the input side, and short LED+ and LED- together on the output side.

CHARACTERISTIC CURVES

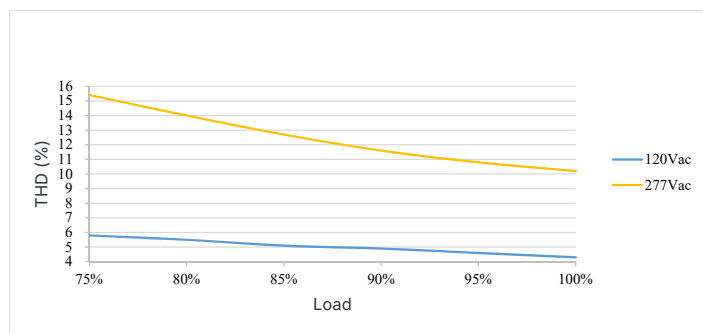
Power Factor vs Load



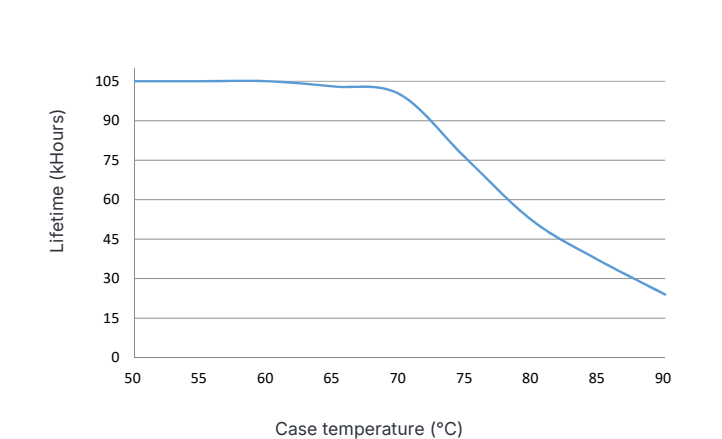
Efficiency vs Load



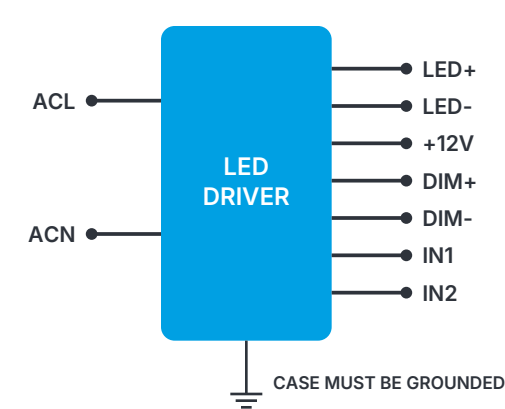
Total Harmonic Distortion vs Load



Lifetime vs Case Temperature



WIRING DIAGRAM



AC input leads
Style 1332, 18 AWG, OD 1.8 mm. Black: AC L • White: AC N • Green: Ground

DC output leads
Style 1332, 18 AWG, OD 1.8 mm. White: LED+ • Gray: LED-

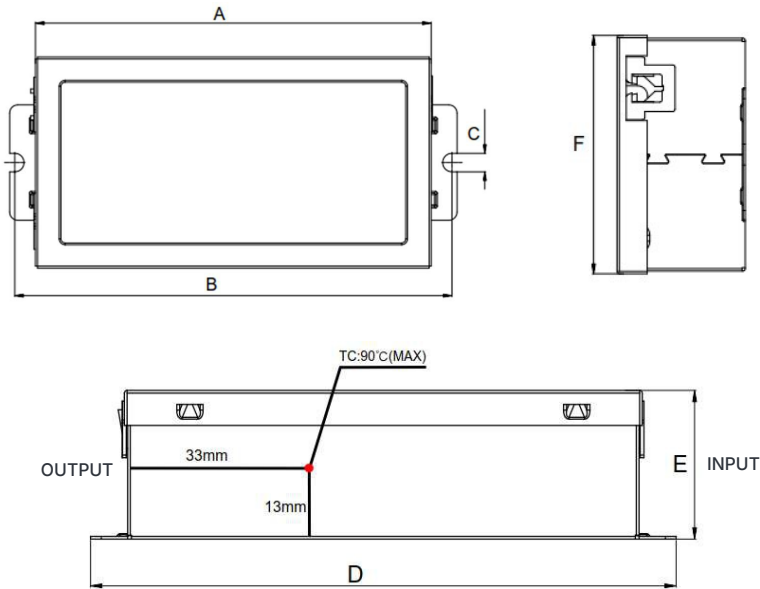
Dimming & auxiliary leads
Style 3266, 24 AWG, OD 1.37 mm. Black/White: +12V • Purple: DIM+ • Gray: DIM- • Red: IN1 • Black: IN2

Lead specifications and colors are customizable.

DIMENSIONS

Units: mm

Table with 3 columns: CODE, DESCRIPTION, MM. Rows include dimensions A (Case body length), B (Mounting hole spacing), C (Mounting hole diameter), D (Overall length), E (Height), and F (Width).



HANDLING, TRANSPORT & STORAGE

- Caution: the driver output is high voltage. Allow the output to fully discharge after testing before handling or packaging.
- Transport: suitable for road, sea and air freight. Keep covered and out of direct sun; handle with care.
- Storage: product stored for more than 1 year must be re-inspected and pass inspection before use. Store in accordance with GB 3873-83.