

Specification for Approval

Customer: _____

Product Material No.: _____

Model No.: _____ **LF-GDE040YP** _____

Version: _____ **V1.1** _____

Customer Approval

Tested by	Checked by	Approved by

Lifud Approval

Tested by	Checked by	Approved by
Lin Kaifan	Liao Xinggao	Zhou Xiaoliang

Full Model Numbers Required by the Customer

Full model No.		Full model No.	
Full model No.		Full model No.	

E.C. List

Version	Description of change	Engineer	Date
1.0	original version	Lin Kaifan	2017-11-30
1.1	Add certificates	Lin Kaifan	2018-01-05

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Model	LF-GDE040YP	Series	EU Standard, 3-in-1 Dimming & Flicker-Free
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1. Product Description



Isolated LED Driver Designed for Class II LED Luminaries

Category: dimmable, flicker-free

Product Properties: 0-10V/PWM/Rx dimming, flicker coefficient $\leq 0.5\%$, active PFC, high PF, high efficiency, low THD

Application: indoor office lighting, decorative lighting, residential lighting and commercial lighting

Warranty: 5 years (Please refer to the warranty condition.)

Certificate: TUV-ENEC, CE, CB, RCM



2. Technical Data

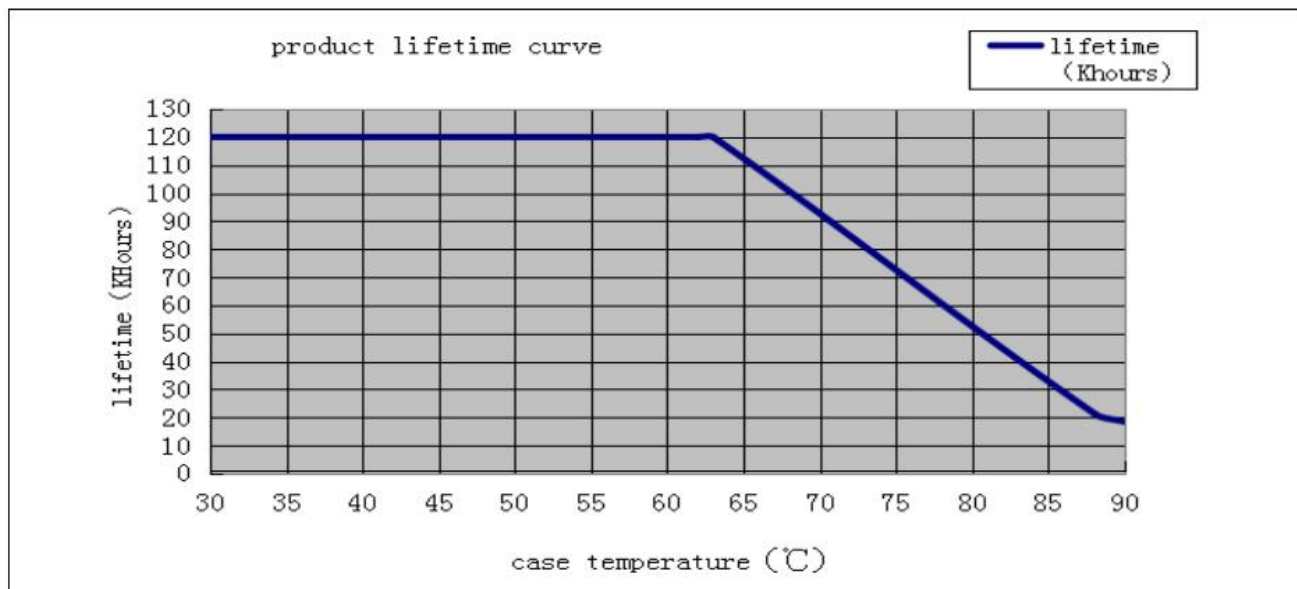
	Full Model Number	LF-GDE040YP0850H	LF-GDE040YP0900H	LF-GDE040YP0950H	LF-GDE040YP1000H	LF-GDE040YP1050H
Output	Output Voltage	25-40VDC				
	Output Current	850mA	900mA	950mA	1000mA	1050mA
		Output current can be adjusted by the DIP switch on the driver. More details are in the "DIP Switch Form".				
	Ripple Voltage	< 1V				
	Current Tolerance	$\pm 5\%$				
	Time to Light	230Vac < 0.5S				
	Temperature Drift	$\pm 10\%$				
Output Line Regulation	$\pm 5\%$					
Input	Input Line Regulation	$\pm 5\%$				
	Rated Input Voltage	220-240Vac (Max input voltage : 200-264Vac)				
	Frequency	50Hz				
	Input Current	0.3A Max				
	Power Factor	$\geq 0.95/230Vac$				
	THD	$\leq 20\%$				
	Efficiency	$\geq 86\%/230Vac$	$\geq 86\%/230Vac$	$\geq 87\%/230Vac$	$\geq 87\%/230Vac$	$\geq 87\%/230Vac$
	In-Rush Current (Peak /Duration)	< 60A/350uS@230Vac				
	Stand-By Power	< 0.5W (when the dimming signal gives "OFF" instruction.)				
Protective Features	No-Load	Max. output voltage (no-load voltage) 55V				
	Short-Circuit	Hiccup mode (auto-recovery)				
Environment Condition	Working Temperature	$-30^{\circ}\text{C} \sim +50^{\circ}\text{C}$				
	Working Humidity	20-90%RH (no condensation)				
	Storage Temperature/ Humidity	$-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ (6 months under the class I environment); 10-90%RH (no condensation)				
	Atmospheric Pressure	86-106KPa				
Safety & Norms	Certificate	TUV-ENEC, CE, CB, RCM				
	Hi-Pot Test	I/P-O/P: 3.75KVac, < 5mA 60S				
	Insulation Resistance	I/P-O/P: 500VDC, > 100M Ω				

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	Surge Level	Comply with IEC61000-4-5(L-N:2KV)
	EMI	Comply with EN55015, EN61000-3-2
	EMS	Comply with EN61000-4-2,3,4,5,6,8,11; EN61547
Others	Packing (Weight)	Carton Size: 460*280*210mm(L*W*H) Net weight : 163g±5%/pcs ; 10.25kg±5%/carton ; 56PCS/Carton
	IP Level	IP20
	Warranty Condition	5 years (Max. case temperature must not exceed 80°C).
Testing Equipment	AC power source: CHROMA6530, digital power meter: CHROMA66202, Oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber, lightning surge generator: Everfine EMS61000-5B, rapid group pulse generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, hi-pot tester: TH9201B, flicker-free tester (flicker-free coefficient tester) 60N-01, etc.	
Test Conditions	The parameters above including the power factor, THD, efficiency are all tested under the ambient temperature 25°C and humidity 50%, AC input 230V and 90% output load.	
Additional Remark	<ol style="list-style-type: none"> In the power supply circuit, it is recommended that the customer should install an over-under-voltage protection and surge protection device to ensure the safety of using electricity. The PC cover, shell, end caps used together with the LED driver inside the LED lamp must meet the UL94V-0 fire rating level or above. As an accessory, the LED driver is not the only factor determining the EMC performance of the LED light fixture. The structure and the wire routing of the light fixture are also relevant. Thus we strongly recommend the manufacturer of the finished LED light fixture re-confirm the EMC of the LED light fixture. 	

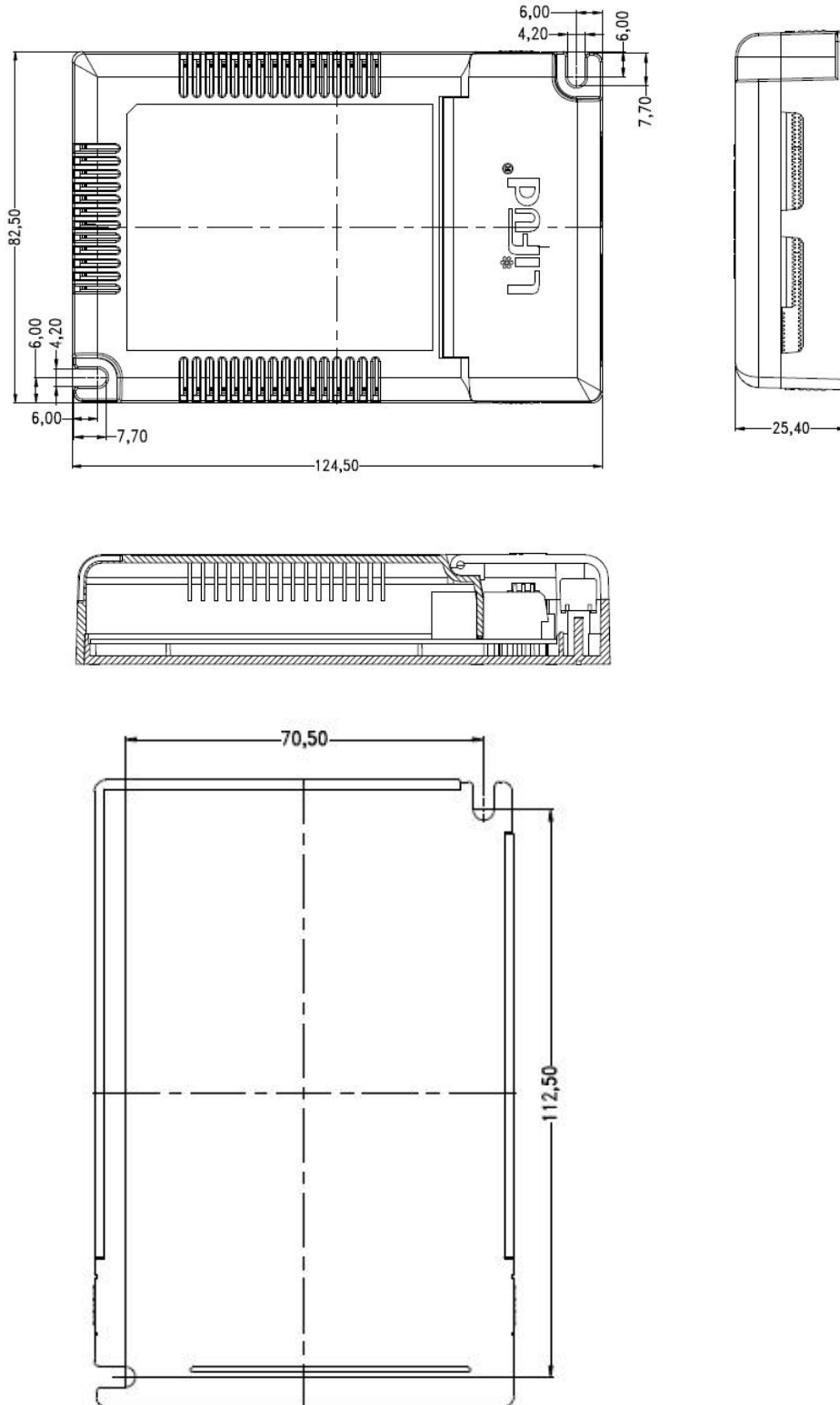
3. Product Referenced Lifetime Curve

The curve below illustrates the driver's lifetime data when the LED driver's Max. case temperature reaches 40°C, 50°C, 60°C, 70°C and 80°C.



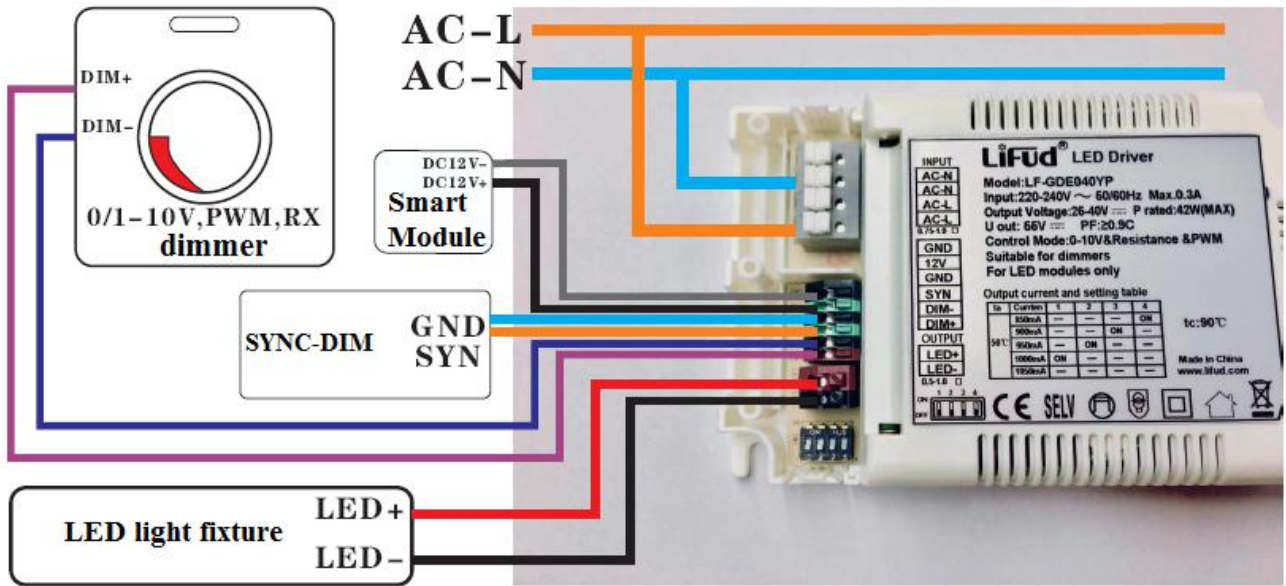
Model	LF-GDE040YP	Series	EU Standard, 3-in-1 Dimming & Flicker-Free
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4. Dimensional Drawing (unit: mm, the tolerance is ± 0.5 mm)



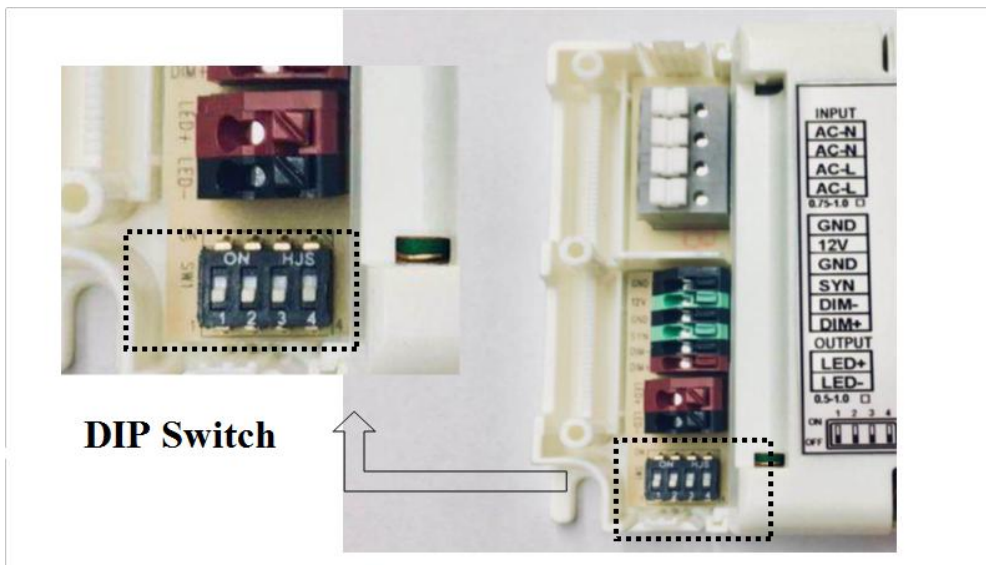
Model	LF-GDE040YP	Series	EU Standard, 3-in-1 Dimming & Flicker-Free
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5. Wire Connection Diagram:



6. Dimmable Feature (The test data below are for your reference only.)

1) DIP Switch (Take 1050mA as an example. When the 4 switches are “OFF”, the output current is 1050mA/100%.)



DIP Switch Form (50mA/gear)					
TA	Current	1	2	3	4
50° C	850mA	-	-	-	ON
	900mA	-	-	ON	-
	950mA	-	ON	-	-
	1000mA	ON	-	-	-
	1050mA	-	-	-	-

2) 3 dimming modes in one driver.

I. 0-10V dimmable: dimming range 10%~100%. (Tested with LIFUD 0-10V dimmer.)

Voltage signal	0V	0.5V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Iout percentage	OFF	ON	8%	18%	29%	40%	51%	62%	73%	84%	95%	100%	95%-105%

II. PWM dimmable: dimming range 10%~100%. The voltage amplitude is 10V and the frequency of PWM signal is 300Hz~3KHz. (Tested with PWM signal generator: RIGOL.)

PWM signal	0-5%	6%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Iout percentage	OFF	ON	10%	24%	36%	48%	59%	70%	80%	88%	96%	100%	95%-105%

III. Resistor dimming: dimming range 10%~100%. The resistance range: 10kΩ~100kΩ. (Tested with LEVITON.)

Resistance	0-5K	6K	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN
Iout percentage	OFF	ON	15%	27%	38%	49%	60%	71%	82%	94%	99%	99%	95%-105%

Remark: The “Iout percentage” above are typical values.

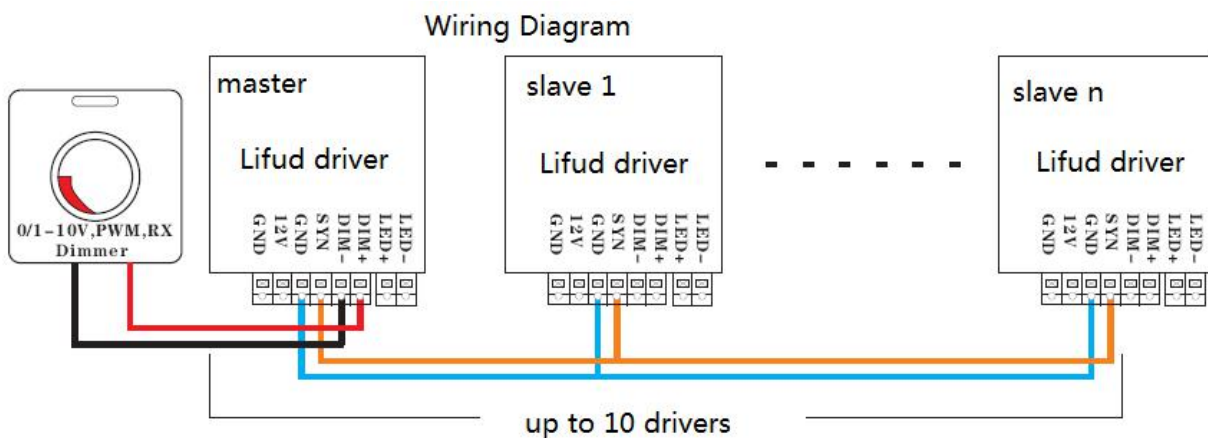
7. SYNC Dim Instructions

Up to 10 drivers can be connected and dimmed synchronously, as long as the wire between each two drivers is within 20 meters.

Q: How to connect these 10 drivers?

A: (The wiring diagram is shown as below.) The DIM+ and DIM- terminals of the driver are connected to the dimmer and this LED driver is as a master. Connect the GND terminal (in the middle, not the lateral one) of the “master” driver with the GND terminal (in the middle, not the lateral one) of the 1st “slave” driver. Connect the GND terminal (in the middle, not the lateral one) of the 1st slave driver with the GND terminal (in the middle, not the lateral one) of the 2nd slave driver and so on. Connect the SYN terminal of the “master” driver with the SYN terminal of the 1st “slave” driver. Connect the SYN terminal of the 1st slave driver with the SYN terminal of the 2nd slave driver, and so on.

Dimming signals include: PWM/0-10V/Resistance signals.



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Remarks:

- 1) The “master” driver is the one connected with dimmer (sending out the dimming signal). It can be automatically recognized by the IC of the LED driver.
- 2) The dimming wires (around 22AWG) between each driver must not exceed 20 meters.
- 3) NEVER WIRE LED LIGHT FIXTURES WITH LIVE CONDUCTORS. Switch off the power first and make wire connection. Make sure the connection is correct before powering up the LED light because wrong connection will lead to damage of the LED driver or dimmer.

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