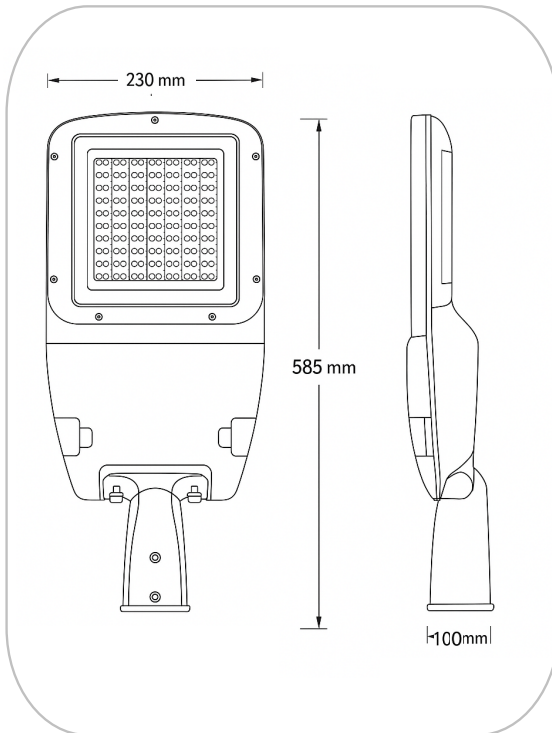




Delta Plus



TYPES OF APPLICATION

- Road & street lighting • Parking lots & outdoor areas
- Industrial zones • Public parks & walkways
- Exterior lighting for commercial buildings



Features

- Up to 150 lm/W luminous efficacy for maximum energy savings
- Long lifespan up to 100,000 hours
- 10 KV surge protection
- IP66-rated for complete protection against dust and water
- High power factor 0.95 with low THD ($\leq 10\%$)
- Operates in extreme temperatures (-30°C to $+50^{\circ}\text{C}$)
- Wide voltage input 100–277 V
- High color consistency (4000K)
- CRI >80 for better visual clarity
- Lightweight, compact structure for easy handling and installation



OPTICAL INFORMATION

Power	100W
CRI	>80
Luminous Flux	15000 lm
Luminous Efficacy	150 lm/W
Beam Angle	SMB (150° x 90°)
CCT	4000k
SDCM	4
Cover	Tempered Glass

ELECTRICAL INFORMATION

Power Consumption	100W
Input Voltage	100-277V
Power Factor	0.95
Surge Protection	10kV
Dimension	585 x 230 x 100 mm
Housing	Die-cast Aluminum
THD	≤ 10%

SYSTEM SPECIFICATIONS

AC Power	100-277V
Mounting	Side Entry with 0-15° adjustable angle
Control Options	1-10V, NEMA, programmable on request
Environment Rating	Outdoor; IP66, IK08
Operating Temperature	-30°C to +50°C
Lifetime	100000 hours
Warranty	5 years

Driver Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	100...277	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.48	A	@ rated output power @ rated input voltage
Max. input current	0.56	A	@ rated output power @ minimum performance input voltage
Rated input power	112	W	@ rated output power @ rated input voltage
Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	90	%	@ rated output power @ rated input voltage @ max. U _{out}
Input voltage AC range	85...305	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Isolation input to output	Basic		

Driver Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	46...143	V _{dc}	
Output voltage max.	220	V	Maximum voltage at open load
Output current	0.3...1.05	A	
Output current min programmable	300	mA	
Output current min dimming	70	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 4	%	Ripple = peak / average @ ≤1KHz
Output current ripple HF	≤ 15	%	
Output P _{st} ^{LM}	≤ 0.12		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	3.3...100	W	



Driver Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		Default: 1-10V. Optional: reversed 1-9V, reversed 0-5V
Dimming range	10...100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

Driver Wiring and Connections

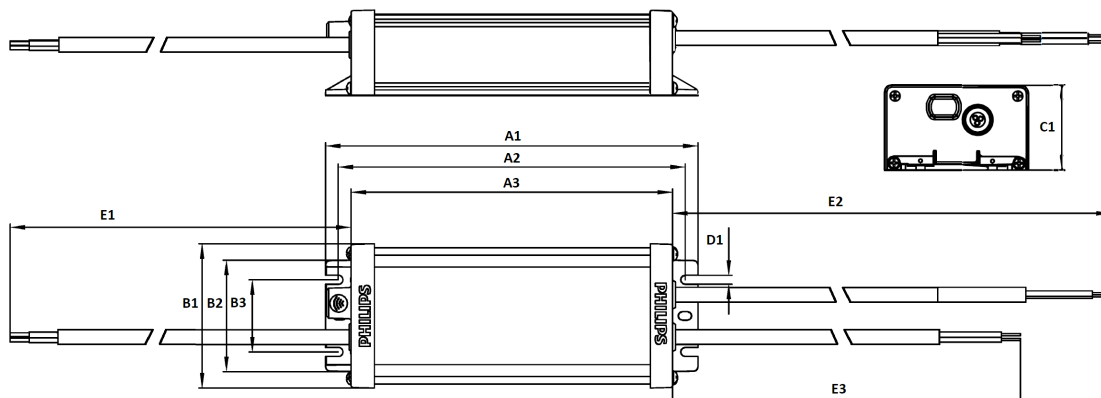
Specification item	Value	Unit	Type
Input wire cross-section	1	mm ²	3x 1.0mm ² stranded wires, waterproof cable
Output wire cross-section	1	mm ²	2x 1.0mm ² stranded wires, waterproof cable
Control wire cross-section	1	mm ²	2x 1.0mm ² stranded wires, waterproof cable
Maximum cable length	2	m	Total length of wiring including LED module, one way

Driver Insulation

Insulation per IEC61347-1	Input	Output	1-10V&Aux	Ground
Input		Basic	Basic	Basic
Output	Basic		Basic	Basic
1-10V&Aux	Basic	Basic		Basic
Ground	Basic	Basic	Basic	

Driver Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	155	mm	± 1
Mounting hole distance (A2)	143	mm	± 1
Length (A3)	131	mm	± 1
Width (B1)	68	mm	± 0.5
Width (B2)	52.4	mm	± 0.5
Width (B3)	34	mm	± 0.3
Height (C1)	40	mm	± 1
Mounting hole diameter (D1)	4.2	mm	± 0.2
Input cable length (E1)	450	mm	± 30
Output cable length (E2)	450	mm	± 30
Control cable length (E3)	250	mm	± 30
Weight	640	gram	



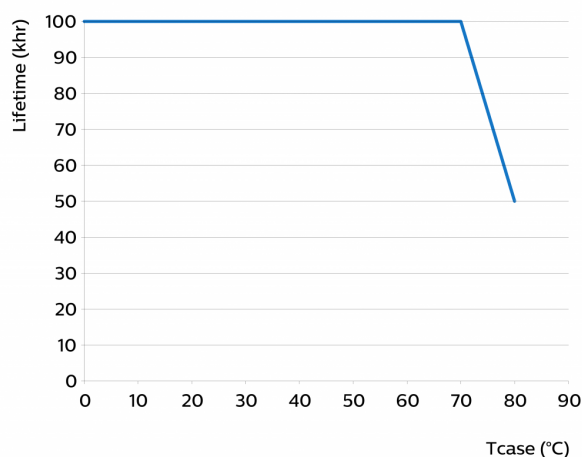


Driver Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	Maximum temperature measured at T _{case} -point
Tcase-life	70	°C	Measured at T _{case} -point
Maximum housing temperature	130	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Driver Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max. Maximum failures = 10%



Driver Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+80	°C	
Relative humidity	5...95	%	Non-condensing

Driver Programmable features

Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	SimpleSet	700 mA	
Adjustable Light Output (ALO)	Yes		
Constant Light Output (CLO)	Yes		
1-10V	Yes		
Dynadimmer	Yes		



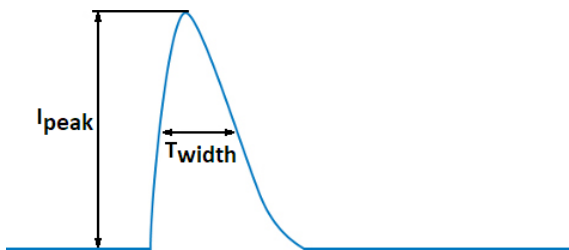
Delta Plus | CHARACTERISTICS

Driver Features

Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Overtemperature protection	Yes		Automatic recovering
Diagnostics	Yes		

Driver Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	48	A	Input voltage 230V
Inrush current T_{width}	278	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 9	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	0.7	mA rms	Acc. IEC60598-1. LED module contribution not included

Driver Surge immunity

Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us

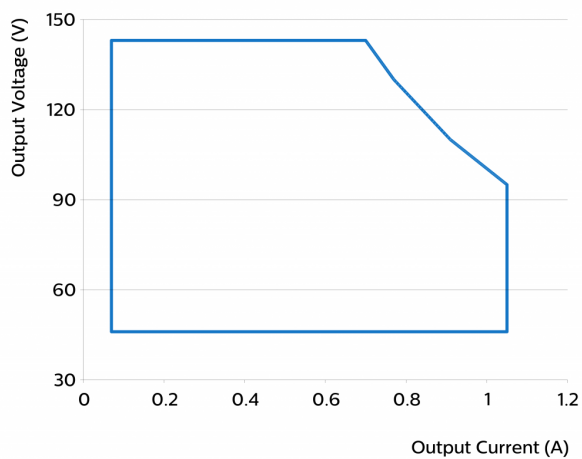


Driver Application Info

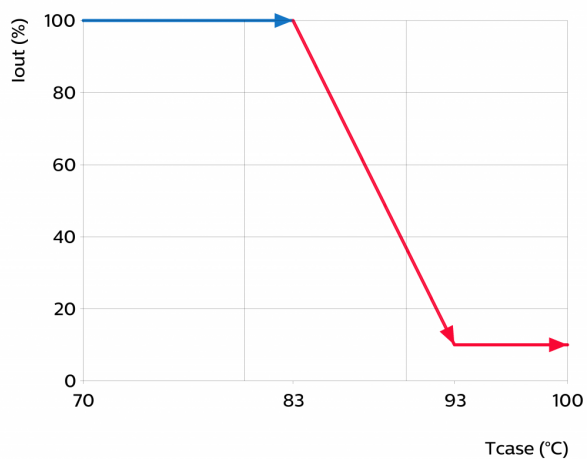
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / UKCA
Ingress Protection classification (IP)	67
Application	Outdoor
Mounting Type	Independent

Graphs

Driver Operating window

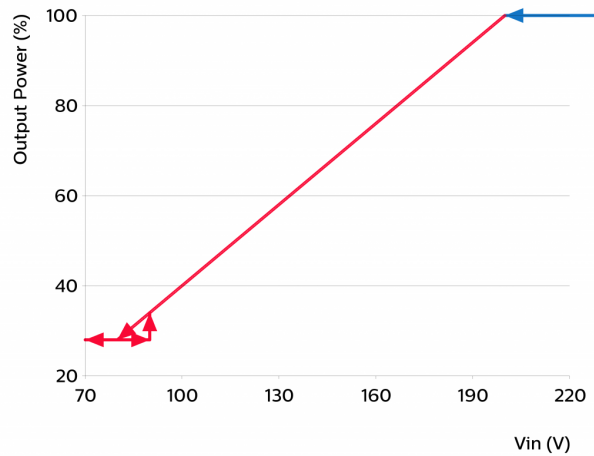


Driver Thermal Guard

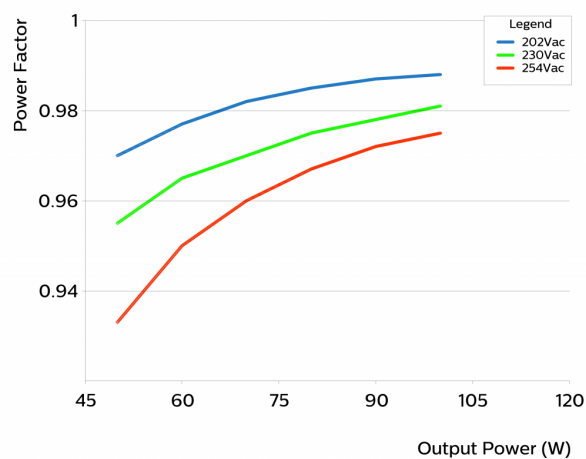




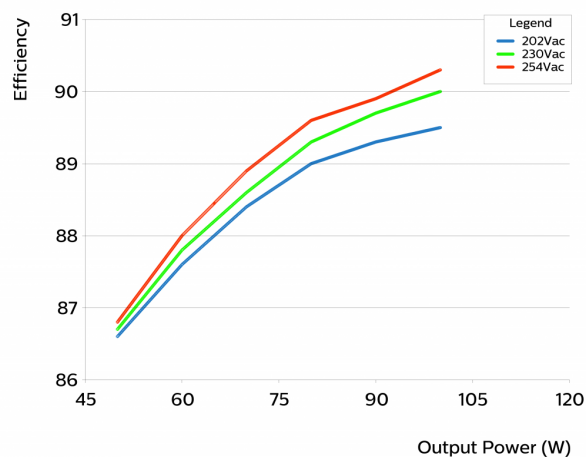
Driver Mains Guard



Driver Power factor versus output power

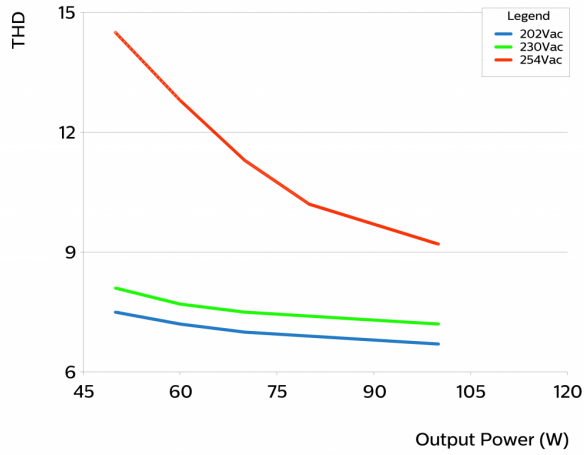


Driver Efficiency versus output power

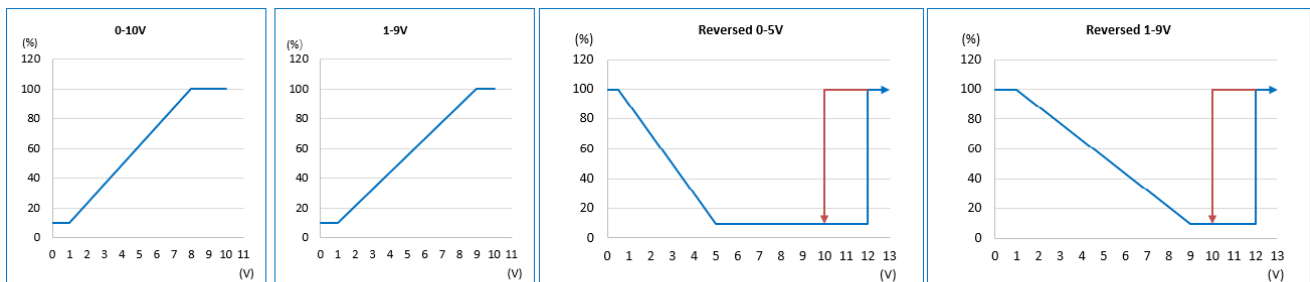




Driver THD versus output power



I_{out} as function of 1-10V interface



Note:
During reversed dimming mode, when the DIM+/DIM- is open, the driver will be at maximum output current.