xitanium

Datasheet

Xitanium LED Xtreme drivers – Connected Ready

Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt
9290 039 74806



Enabling outdoor connectivity

Philips LED Xtreme Connected Ready drivers fully comply with D4i certification which also covers the DALI-2 certification. It is the ideal solution to turn your outdoor luminaires into smart luminaires offering all control and power requirements with its dual integrated power supplies for controllers and sensors. In addition, these intelligent LED drivers offer the capability to store and report a wide range of luminaire, energy and diagnostics data in a standardized format.

Benefits

- Ideal for lighting IoT and external DALI outdoor applications (up to 15 meters extra/inter-luminaire use)
- Best-in class driver efficiency enabling high energy savings
- High flexibility: 1 code covering complete operating range and extremely compact for easy luminaire integration
- Reduced environmental impact: no potting, reduced weight and size compared to similar types, 100% recycled plastic housing, high efficiency, produced in Europe, Environmental Product Declaration

Application

- Road and street lighting
- Decorative lighting
- Industrial lighting
- Tunnel lighting

Features

- D4i and DALI-2 certified (DALI parts 150, 250, 251, 252 and 253)
- DALI interface with elevated surge immunity per DALI Part 151
- One code per wattage, covering 200-1050mA
- High 10/6kV surge immunity (CM/DM)
- Long lifetime and robust protection
- SimpleSet®, wireless NFC configuration interface
- Configurable drivers (AOC, CLO, AST, ALO ..)
- Autonomous dimming via Integrated DynaDimmer
- 100% recycled plastic housing
- Thermal driver protection (DTL)
- End-Of-Life indicator (EOL)
- OEM Write Protection (OWP)

Logistical data

Specification item	Value
Product name	Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt
EOC	872016934336800
Logistic code 12NC	9290 039 74806
EAN1 (GTIN)	8720169343368
Pieces per box	20
Weight	181 gram

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	202...254	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency	47...63	Hz	Performance range
Rated input current	0.21	A	@ rated output power @ rated input voltage
Rated input power	47.0	W	@ rated output + Vaux power @ rated input voltage
Power factor	0.98		@maximum output power @ rated input voltage
Total harmonic distortion	6	%	@ rated output power @ rated input voltage
Efficiency	91.0	%	@ rated output power @ rated input voltage @ 700mA Iout
Input voltage AC	198...264	V_{ac}	Safety operational range, see MainsGuard graph
Input frequency AC	45...66	Hz	Safety operational range
Standby Power (W)	0.5	W	
Isolation input to output	SELV		

Electrical output data

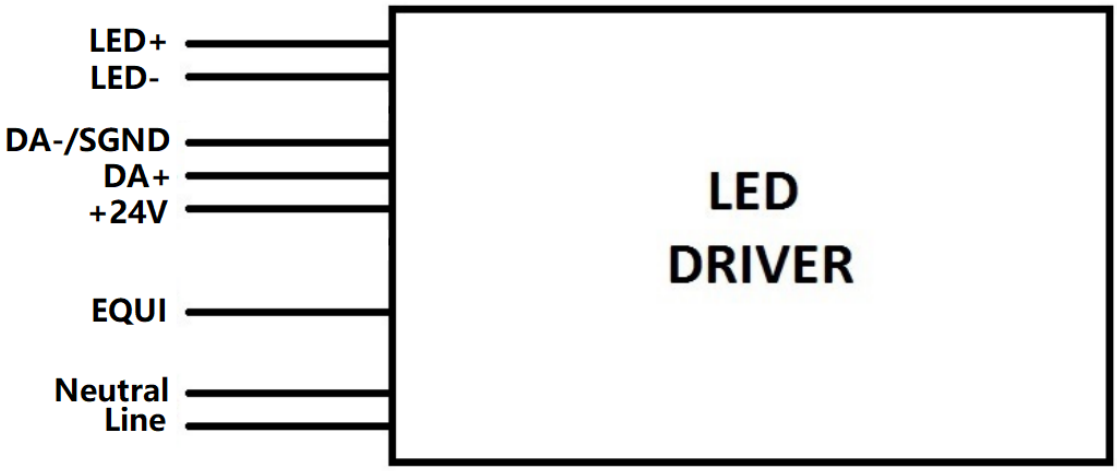
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	20...77	V_{dc}	
Output voltage max.	100	V	Maximum voltage at open load
Output current	50...1050	mA	
Output current min programmable	200	mA	
Min output current	50	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 4	%	
Output P_{st}^{LM}	≤ 0.8		In entire operating window
Output SVM	≤ 0.1		In entire operating window
Output power	1.0...40.0	W	
Minimum performance output power	11	W	Power factor > 0.9 and THD < 20%
Number of output channels	1		

Control interfaces

Specification item	Value	Unit	Condition
Control method	DALI		Output current amplitude dimming. Please refer to design-in guide at www.philips.com/oem for more controllability details.
Dimming range	10...100	%	Acc. D4i. See www.digitalilluminationinterface.org/products
Isolation controls input to output	Supplementary		acc. IEC61347-1
D4i Power Supply max voltage.	22.5	V	
D4i output current	52	mA	
D4i Power Supply max current source	60	mA	

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.5...1.5 / 20...16	mm^2 / AWG	solid / stranded wire
Input wire strip length	8.5...9.5	mm	
Output wire cross-section	0.5...1.5 / 20...16	mm^2 / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5 / 20...16	mm^2 / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	

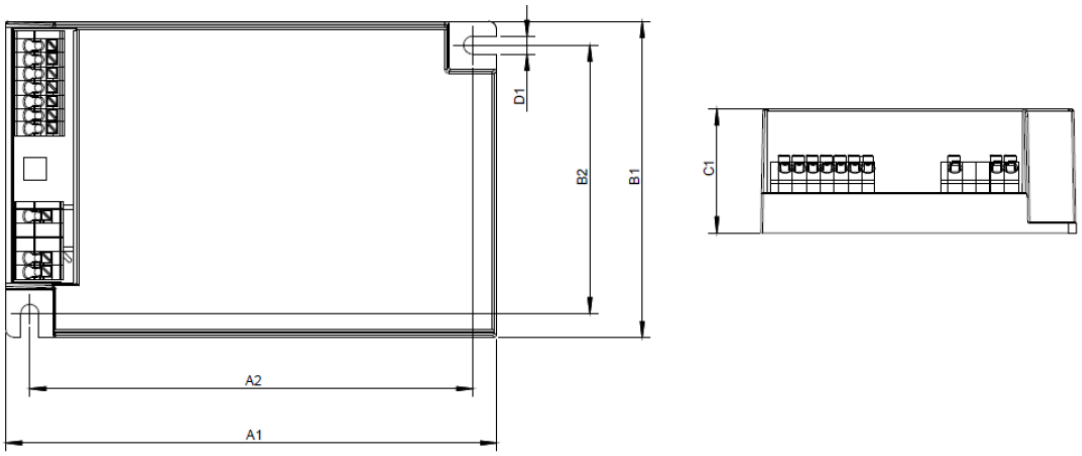


Isolation

Insulation per IEC61347-1	Input	Output	DALI + AUX	EQUI
Input	-	SELV	Reinforced	Reinforced
Output	SELV	-	Supplementary	Basic
DALI + AUX	Reinforced	Supplementary	-	Basic
EQUI	Reinforced	Basic	Basic	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	123	mm	± 0.3
Mounting hole distance (A2)	111	mm	± 0.2
Width (B1)	79	mm	± 0.3
Width (B2)	67	mm	± 0.2
Height (C1)	31	mm	± 0.5
Mounting hole diameter (D1)	4.5	mm	± 0.2
Weight	181	gram	
Housing color	Black		

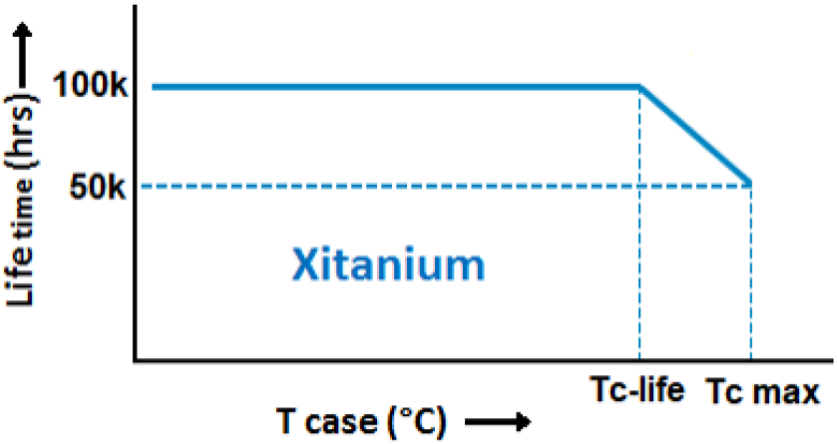


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	85	°C	Maximum temperature measured at Tcase-point
Tcase-life	75	°C	Measured at Tcase-point measured at T_c-point
Maximum housing temperature	120	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	100,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%



Maximum failures = 10%

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

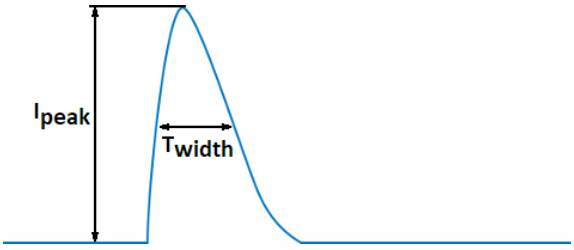
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	700 mA	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Adjustable Start-up Time (AST)	Yes	1 s	
Dynadimmer	Yes		
Min Dim Level (%)	Yes	10 %	
End Of Life indicator (EOL)	Yes	OFF	
OEM Write Protection (OWP)	Yes	OFF	
DALI Power Supply (DALI part 250)	Yes	ON	
Luminaire Info (DALI part 251)	Yes		
Luminaire maintenance (DALI part 253)	Yes		

Non-programmable 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 and II	per IEC60598
+24V Auxiliary Power Supply (DALI part 150)	Yes	24VDC
Box configuration	Yes	
Energy metering (DALI part 252)	Yes	+/-4 % at full power
Diagnostics (DALI part 253)	Yes	
Diagnostics via Signify tool	Yes	

Inrush current

Specification item	Value	Unit	Condition
Inrush current	35.4	A	Input voltage 230V
Inrush peak width	122	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 30	pcs	Input voltage 230V



Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces

a correction factor of 80% has to be applied to the rated current

Driver touch current / protective conductor current / earth leakage current

Specification item	Value	Unit	Condition
Typical Touch Current (ins. Class II)	0.35	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

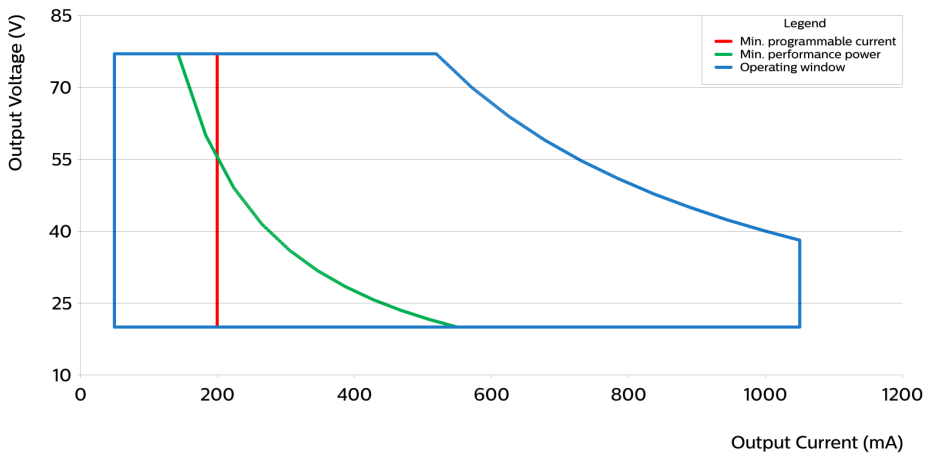
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us,8/20us
Control surge immunity (diff. mode)	0.8	kV	acc. to DALI part 151
Control surge immunity (comm. mode)	4	kV	DA / Vaux - L/N acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us
Control surge immunity (comm. mode)	4	kV	DA / Vaux - EQUI acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	CCC / CE / D4i / DALI 2 / EAC / ENEC / RCM / SELV / UA / UKCA
Ingress Protection classification (IP)	20
Application	Outdoor
Mounting Type	Built-in

Graphs

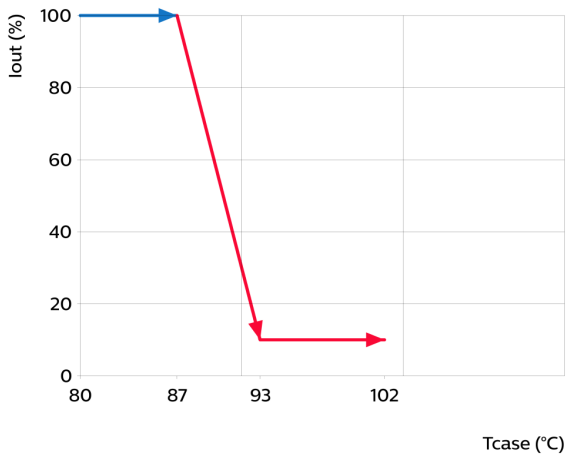
Operating window



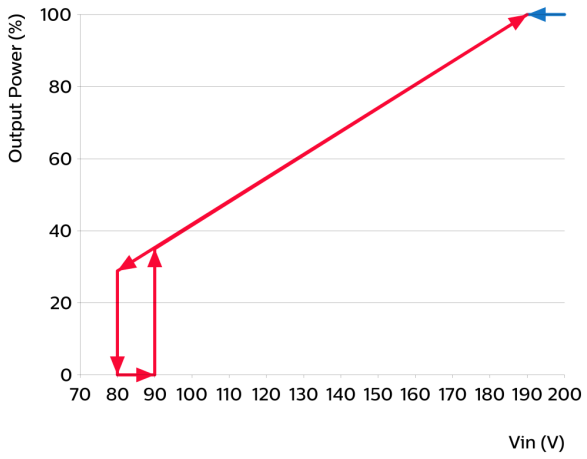
Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	200	20	77	15.4
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	250	20	77	19.25
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	300	20	77	23.1
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	350	20	77	26.95
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	400	20	77	30.8

Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	450	20	77	34.65
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	500	20	77	38.5
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	550	20	72	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	600	20	66	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	650	20	61	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	700	20	57	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	750	20	53	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	800	20	50	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	850	20	47	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	900	20	44	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	950	20	42	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	1000	20	40	40
Xi CR 40W 0.2-1.05A SDMP 230V C123 sXt	1050	20	38	40

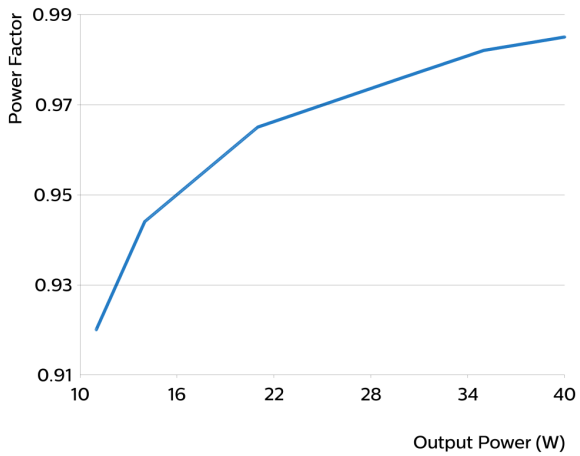
Thermal Guard



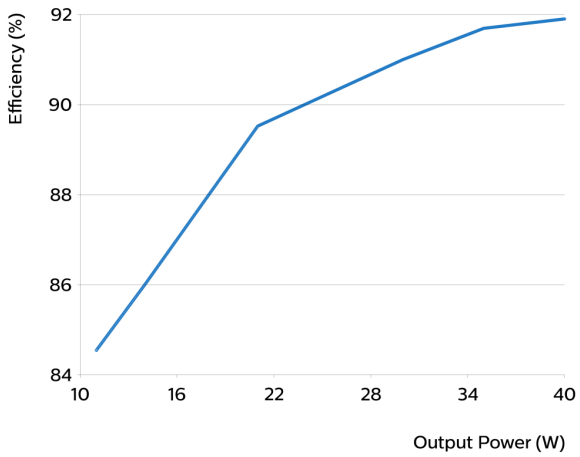
Mains Guard



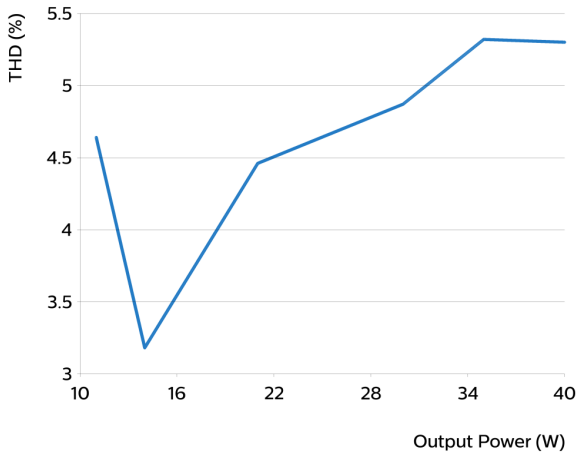
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Important info about dual power supplies:

1: DA power supply and Vaux supply are short-circuit proof.

2: The DA supply is specified with a guaranteed supply current of 52mA and a maximum supply current of 60mA. Voltage is depending on loading and will vary between 12V and 20VDC. The DA supply is turned on by factory default and can be switched off through MultiOne software.

3: Auxiliary supply Vaux supplies 24VDC and is able to deliver 3W average power. Peak power capacity is 10W with 25% duty cycle (T=5.2ms). This supply cannot be switched off.

4: DA supply and Vaux share the same common negative terminal.

5: Do not connect multiple Vaux supplies in parallel.

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