xitanium

Datasheet

Xitanium LED Xtreme drivers – Connected Ready

Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt
9290 039 74706

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 22W 0.2-1.05A SDMP 230V C123 sXt
EOC	872016934334400
Logistic code 12NC	9290 039 74706
EAN1 (GTIN)	8720169343344
Pieces per box	20
Weight	176 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	0.125	A	@ rated output power @ rated input voltage
Rated input power	18.0	W	@ rated output + Vaux power @ rated input voltage
Power factor	0.98		@maximum output power @ rated input voltage
Total harmonic distortion	10	%	@ rated output power @ rated input voltage
Efficiency	89.0	%	@ 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

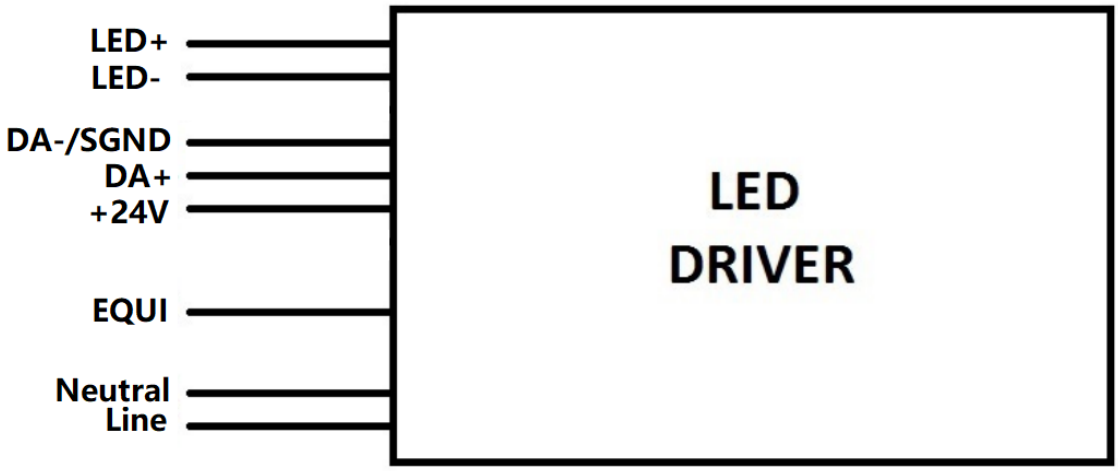
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	8...48	V_{dc}	
Output voltage max.	80	V	Maximum voltage at open load
Output current	50...1050	mA	
Output current min programmable	200	mA	
Min output current	50	mA	
Output current tolerance ±	5	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 4	%	
Output P_{st}^{LM}	≤ 1.0		In entire operating window
Output SVM	≤ 0.4		In entire operating window
Output power	0.4...22.0	W	
Minimum performance output power	6	W	Power factor > 0.9 and THD < 20%

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	

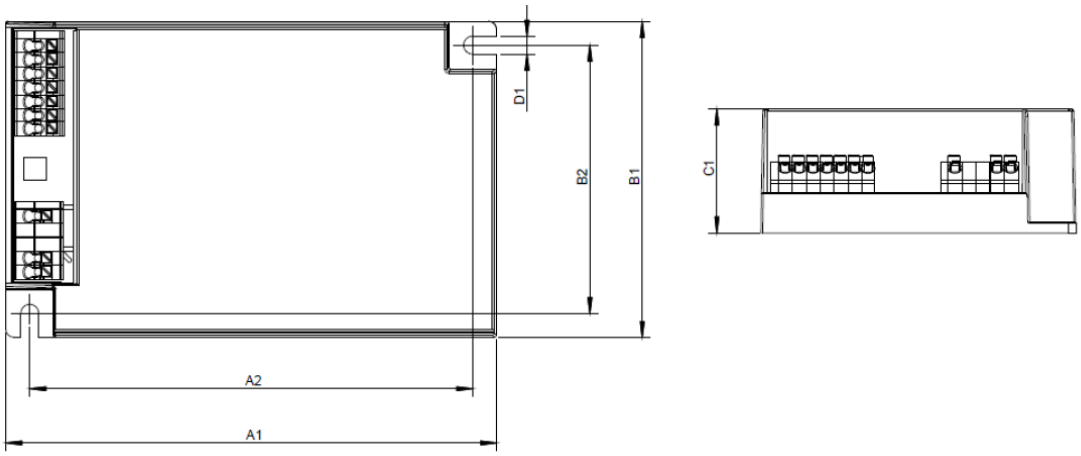


Isolation

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	176	gram	
Housing color	Black		

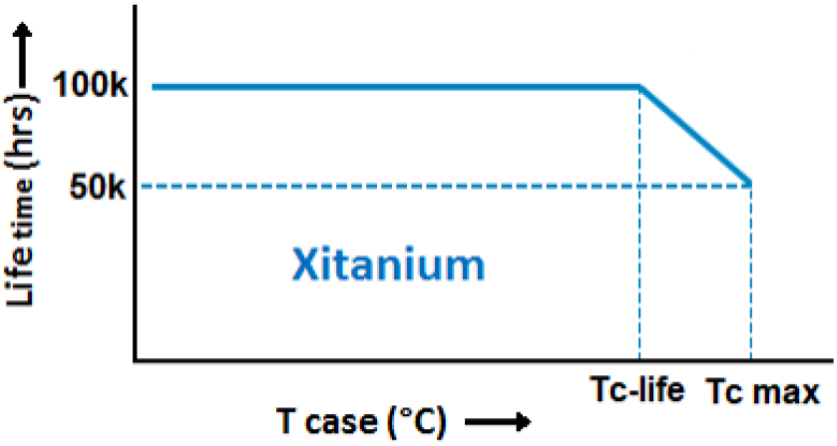


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+60	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-max	80	°C	Maximum temperature measured at Tcase-point
Tcase-life	70	°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

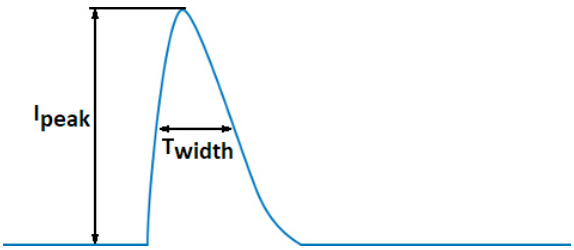
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	Programmable, SimpleSet	700 mA	
Driver Temperature Limit (DTL)	Yes	ON	
Adjustable Light Output (ALO)	Yes	OFF	
Adjustable Light Output (ALO) min level	Yes	OFF	
Constant Light Output (CLO)	Yes	OFF	
Adjustable Start-up 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	21.6	A	Input voltage 230V
Inrush peak width	131	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 46	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 piece

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

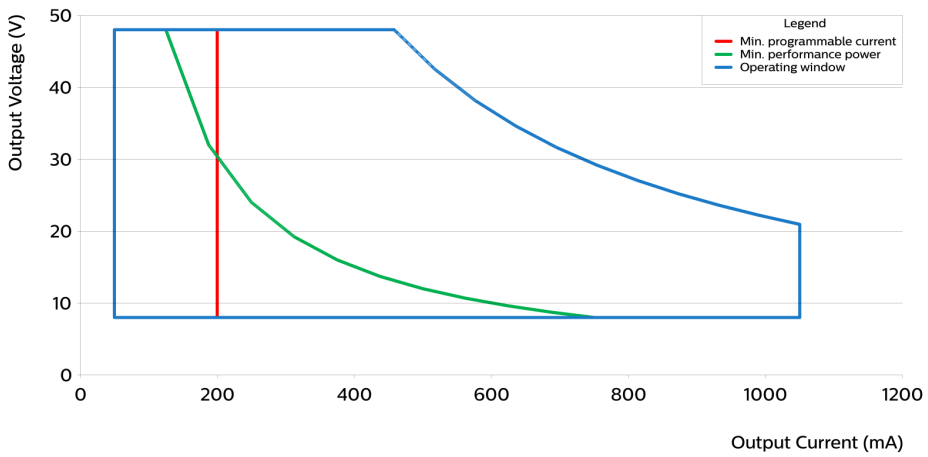
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	6	kV	L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	10	kV	L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us,8/20us
Control surge immunity (diff. mode)	0.8	kV	DALI part 151
Control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

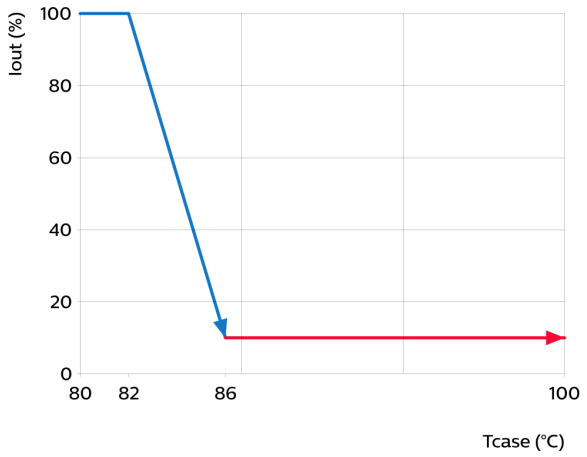
Operating window



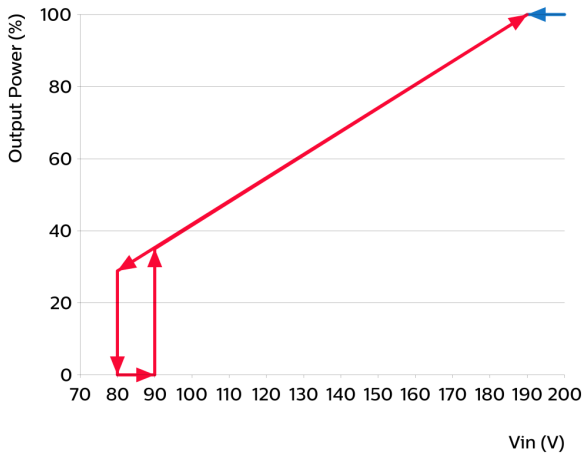
Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	200	8	48	9.6
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	250	8	48	12
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	300	8	48	14.4
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	350	8	48	16.8
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	400	8	48	19.2

Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	450	8	48	21.6
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	500	8	44	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	550	8	40	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	600	8	36	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	650	8	33	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	700	8	31	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	750	8	29	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	800	8	27	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	850	8	25	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	900	8	24	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	950	8	23	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	1000	8	22	22
Xi CR 22W 0.2-1.05A SDMP 230V C123 sXt	1050	8	20	22

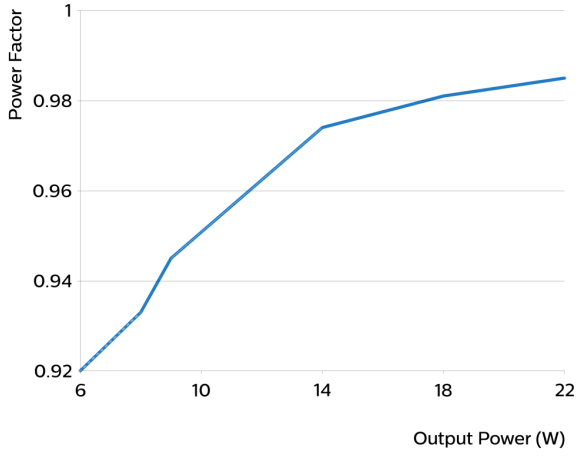
Thermal Guard



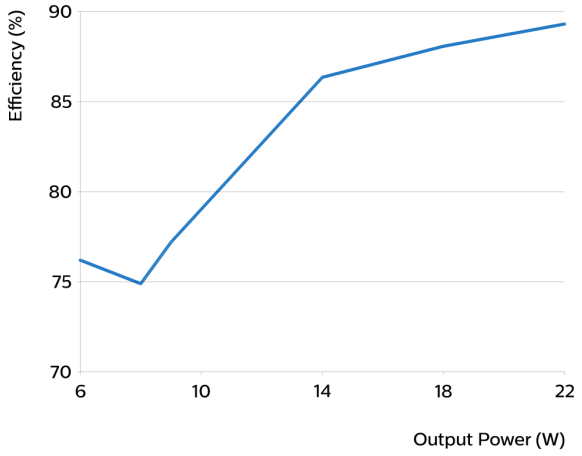
Mains Guard



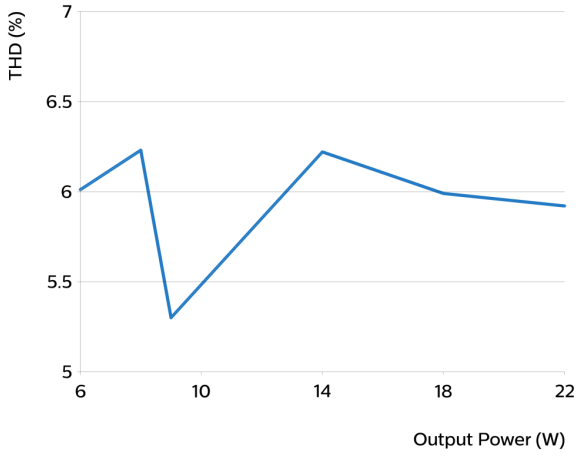
Power factor versus output power



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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