Xitanium

Datasheet

Xitanium LED drivers – DALI SELV

Xitanium 40W R 0.3-1.05A 54V TD/I
9290 028 01206



Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications. Reliability is enhanced by features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal derating. Most drivers feature central DC operation. In the coming years LEDs will continue to increase in efficiency, creating challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer stable lumen output and light quality levels that specifiers and architects demand. The adjustable output current also enables operation of various LED PCB solutions from different manufacturers.

Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - can also be used for other manufacturers' modules or OEMs' own PCB designs

Features

- Configurable operating windows (AOC) via DALI or with LEDset
- Corridor Mode (CM)
- Touch & Dim (TD)
- OEM Write Protection (OWP)
- Luminaire Data (DALI part 251)

Application

- Retail
- Office

Logistical data

Specification item	Value
Product name	Xitanium 40W R 0.3-1.05A 54V TD/I
EOC	871951425108300
Logistic code 12NC	9290 028 01206
EAN1 (GTIN)	8719514251083
EAN3 (box)	8719514251090
Pieces per box	18
Weight	160 gram

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V_{ac}	Performance range
Rated input voltage	230	V_{ac}	
Rated input frequency	50...60	Hz	Performance range
Rated input current	0.2	A	@ rated output power @ rated input voltage
Rated input power	45.0	W	@ rated output power @ rated input voltage
Power factor performance range	≥ 0.90 C		@ rated output power @ rated input voltage@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	88.0	%	@ rated output power @ rated input voltage @ max. Iout
Rated input voltage DC	186...250	V_{dc}	Performance range. About different DC input forms, please refer to Design in Guide.
Rated input current DC	≤ 0.22	A_{dc}	Performance range
Input voltage AC	198...264	V_{ac}	Operational range
Input frequency AC	45...66	Hz	Operational range
Input voltage DC	168...275	V_{dc}	Operational range. About different DC input forms, please refer to Design in Guide.
Standby Power (no load)	0.43	W	
Isolation input to output	SELV		

Electrical output data

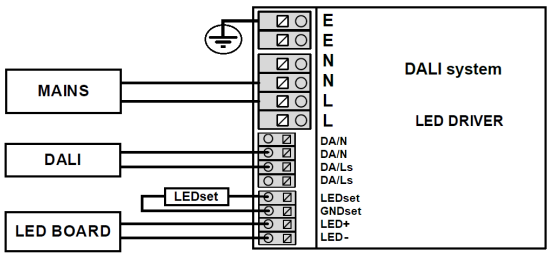
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	24...54	V_{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	300...1050	mA	Full output operating window
Output current min programmable	300	mA	
Min output current	15	mA	
Output current tolerance ±	8	%	@full load
Output current ripple LF	≤ 4	%	Ripple = peak / average, < 3kHz
Output P_{st}^{LM}	≤ 0.3		
Output SVM	≤ 0.1		
Output power	13.0...40.0	W	

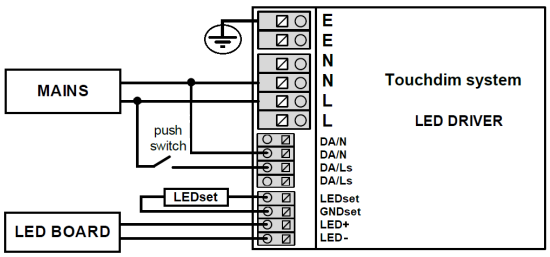
Control interfaces

Specification item	Value	Unit	Condition
Control method	DALI, TD		See design-in guide at www.philips.com/oem for more controllability details.
Dimming range	5...100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	0.75...2.5 / 18...14	mm^2 / AWG	solid / stranded wire
Input wire strip length	10...11	mm	
Output wire cross-section	0.5...1.5	mm^2 / AWG	solid / stranded wire
Output wire strip length	8.5...9.5	mm	
Control wire cross-section	0.5...1.5	mm^2 / AWG	solid / stranded wire
Control wire strip length	8.5...9.5	mm	
Maximum cable length	2	m	Total length of wiring including LED module, one way
Loop Through	Input & Control		



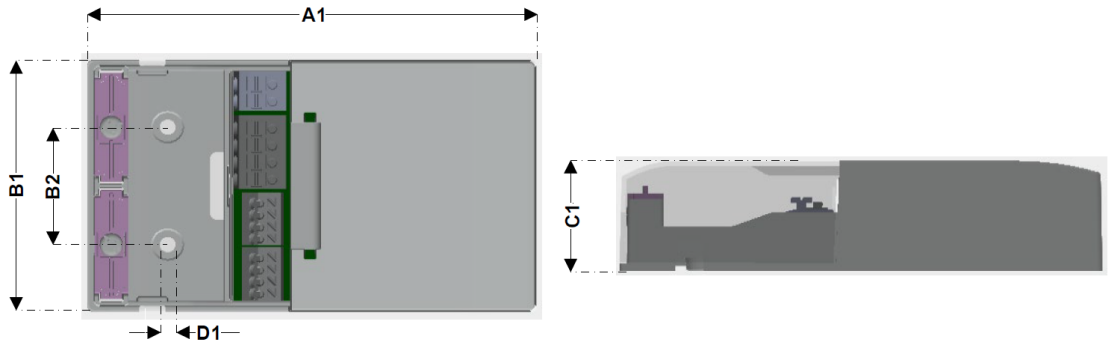


Isolation

Insulation per IEC61347-1	Input	Output	DALI	LEDset
Input	-	SELV	Basic	Reinforced
Output	SELV	-	Basic	Reinforced
DALI	Basic	Basic	-	Reinforced
LEDset	Reinforced	Reinforced	Reinforced	-

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	127.6	mm	
Width (B1)	74	mm	
Width (B2)	34.5	mm	
Height (C1)	30	mm	
Mounting hole diameter (D1)	4.1	mm	
Weight	160	gram	
Housing color	White (RAL 9016)		

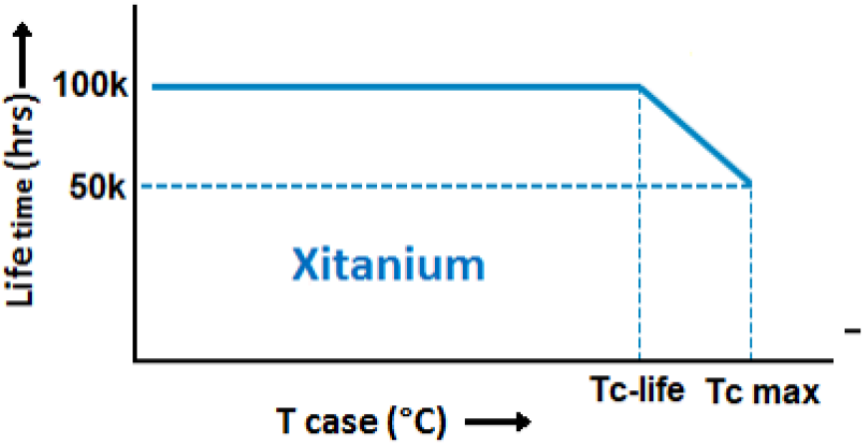


Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°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	110	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

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



Maximum failures = 10%

Temperature [°C]	Lifetime	Unit	Condition
80	25000	hr	
75	35000	hr	
70	50000	hr	Temperature measured @Tc point
65	>50000	hr	
60	>50000	hr	

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

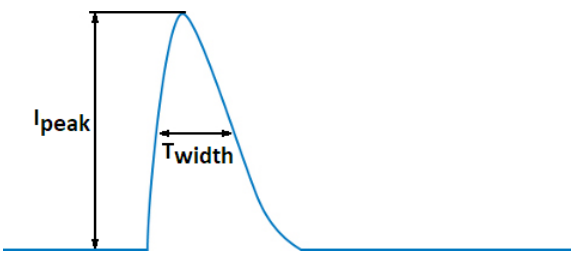
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	LEDset, Programmable	300 mA	
Adjustable Light Output (ALO)	No		
Constant Light Output (CLO)	No		
Touch & Dim (TD)	Yes	ON	
Corridor Mode	Yes	OFF	Default: Default: T1=55s, T2=12s, T3=30min
Min Dim Level (%)	No		
DC emergency (DCemDim)	Yes	ON	
OEM Write Protection (OWP)	Yes	OFF	
Luminaire Info (DALI part 251)	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

Inrush current

Specification item	Value	Unit	Condition
Inrush current	9	A	Input voltage 230V
Inrush peak width	22	µs	Input voltage 230V, measured at 50% height
Drivers / MCB 16A type B @230V AC	≤ 40	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)	0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

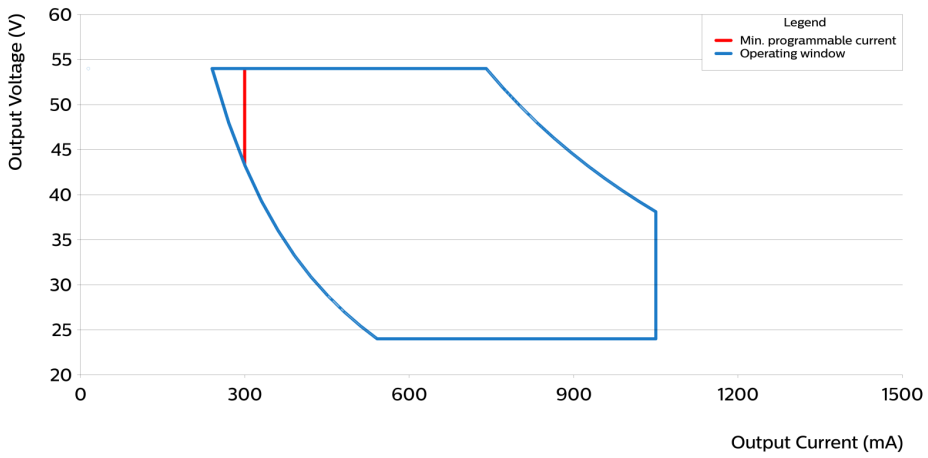
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	L- N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us
Control surge immunity (diff. mode)	1	kV	DALI/TD - DALI-TD Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Control surge immunity (comm. mode)	2	kV	DALI/TD - PE, DALI - L/N Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info (Approbation)

Specification item	Value
Approval marks and Certifications	CCC / CE / DALI 2 / EAC / EL / ENEC / RCM / SELV / UA
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Point
Mounting Type	Independent

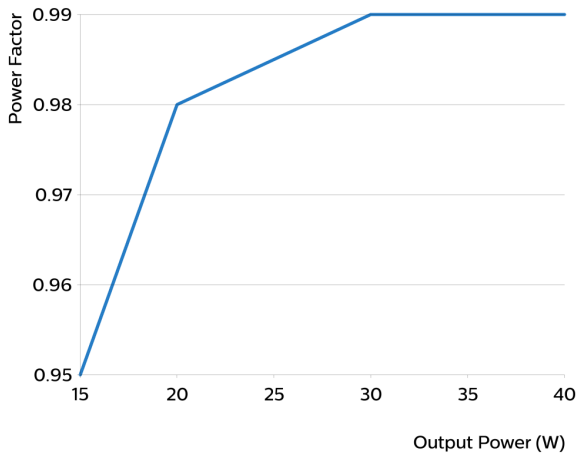
Graphs

Operating window

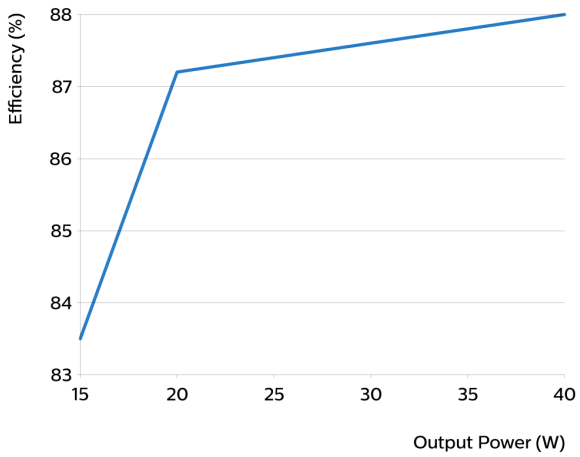


Type	Output current (mA)	Min. output voltage (V)	Max. output voltage (V)	Max. output power (W)
Xitanium 40W R 0.3-1.05A 54V TD/I	300	43	54	16.2
Xitanium 40W R 0.3-1.05A 54V TD/I	350	37	54	18.9
Xitanium 40W R 0.3-1.05A 54V TD/I	400	32	54	21.6
Xitanium 40W R 0.3-1.05A 54V TD/I	450	28	54	24.3
Xitanium 40W R 0.3-1.05A 54V TD/I	500	26	54	27
Xitanium 40W R 0.3-1.05A 54V TD/I	550	24	54	29.7
Xitanium 40W R 0.3-1.05A 54V TD/I	600	24	54	32.4
Xitanium 40W R 0.3-1.05A 54V TD/I	650	24	54	35.1
Xitanium 40W R 0.3-1.05A 54V TD/I	700	24	54	37.8
Xitanium 40W R 0.3-1.05A 54V TD/I	750	24	53	40
Xitanium 40W R 0.3-1.05A 54V TD/I	800	24	50	40
Xitanium 40W R 0.3-1.05A 54V TD/I	850	24	47	40
Xitanium 40W R 0.3-1.05A 54V TD/I	900	24	44	40
Xitanium 40W R 0.3-1.05A 54V TD/I	950	24	42	40
Xitanium 40W R 0.3-1.05A 54V TD/I	1000	24	40	40
Xitanium 40W R 0.3-1.05A 54V TD/I	1050	24	38	40

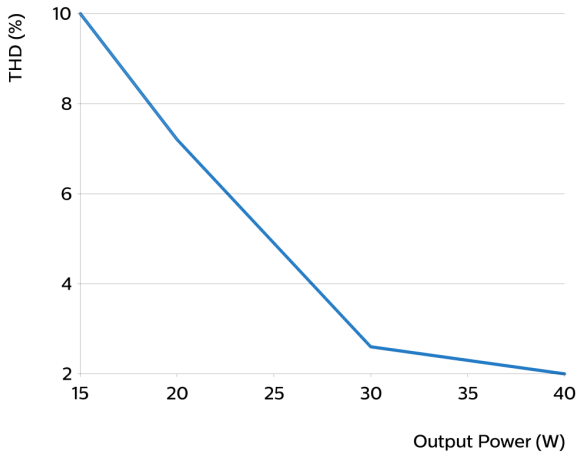
Power factor versus output power



Efficiency versus output power



THD versus output power



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