



# PRODUCT SPECIFICATION

XENERQI KSUART Driver XEL-xxxTCU-UUA12PP \ Eaton: ELX-PCD-UNV-A-0xx-yyyy-AMB-S AUX-01							
Revision	1.3	Date	10/10/19	Firmware 0.58			
Customer:	Eaton						
SPECIFICATION	Test Condition / Notes		Minimum	Nominal	Maximum	Units	
VARIANT ORDERED	VOLTAGE TEST RANGE						
Universal PHASE - 1	Nominal - All specifications met <sup>(*)</sup>		120		277	VAC	
	Extended - All specs except PF/THD <sup>(*)</sup>		108		305	VAC	
	Operational - Derated specifications		95		305	VAC	
SPECIFICATION	Test Condition / Notes		MIN		MAX	Units	
OUTPUT POWER RATING (FULL) XEL-040TCU-UUA12PP \ EATON ReadySense™: ELX-PCD-UNV-A- 040-1200-AMB-S AUX-01 XEL-050TCU-UUA12PP \ EATON ReadySense™: ELX-PCD-UNV-A- 050-1200-AMB-S AUX-01	(*) Power supplies will meet PF and THD specifications over the full nominal voltage range as specified above. <b>MAXIMUM rated output Power.</b>		20.00		40.00	W	
			25.00		50.00	W	
Power Factor	** Measured at 120 & 277V		0.9				
THD	- Measured at >=50% of full power for (A)				20	%	
Input Frequency	AC Line Frequency		47		63	Hz	
MAXIMUM OUTPUT CURRENT ELX-PCD-UNV-A-040-1200-AMB-S AUX-01 ELX-PCD-UNV-A-050-1200-AMB-S AUX-01	* Output current represents the current programming range		0.50		1.20	A	
			0.50		1.20		
OUTPUT VOLTAGE FULL POWER ELX-PCD-UNV-A-040-1200-AMB-S AUX-01 ELX-PCD-UNV-A-050-1200-AMB-S AUX-01	Output voltage range at which specifications will be met. Nominal represents most common usage voltage of customer base. DIM/DERATE		DIMMED	Minimum	Nominal	Maximum	
			25.0	30.0	42.00	54.0	V
		25.0	30.0	42.00	54.0	V	
SPECIFICATION	Test Condition / Notes		Minimum	Nominal	Maximum	Units	
EFFICIENCY FULL POWER ELX-PCD-UNV-A-040-1200-AMB-S AUX-01 ELX-PCD-UNV-A-050-1200-AMB-S AUX-01	- Measured at 277V - Measured at 75% full power (Max current, max voltage)		85.0	87.0		%	
			85.0	87.0		%	
							%
SPECIFICATION	DIMMING/CONTROL FEATURES			Minimum	Nominal	Maximum	Units
DIMMING	TRIAC	Forward phase triac dimming. Reverse phase compatible. (REQUIRED at 120V Only)		0-10V	DALI	OTHER	%
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UART 1% - 100% + OFF
0-10V CONTROL RANGE	Maximum voltage for full output / Minimum for fully dimmed			N/A	N/A	N/A	Volts
0-10V Source Voltage	Source voltage range for 0-10V			N/A		N/A	Volts
OUTPUT SET POINT CONTROL	RSET (Imax)	Programmed (Imax)	Programmed (Vmax)	DALI	FIXED	JUMPER SELECT	Programmed via command over UART interface.
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OUTPUT SET POINT ACCURACY	Measured as percentage of target output current			-5%		5%	% of Programmed current
SPECIFICATION	Test Condition / Notes		Minimum	Nominal	Maximum	Units	
Start-up Delay (Fully Dimmed)	Worst case - 5% Dimming @Full load - To 10%				1000	ms (From receipt of Relay-On)	
	Worst case - 5% Dimming @Full load - To 90%				1500	ms (From receipt of Relay-On)	
Start-up Delay (10-100%)	Worst case - 10% Dimming @Full load - To 10%				750	ms (From receipt of Relay-On)	
	Worst case - 10% Dimming @Full load - To 90%				1000	ms (From receipt of Relay-On)	
Low Frequency Flicker (<60Hz)	Maximum Deviation measured over 30 seconds (Total deviation)				1	%	
Turn on Overshoot (Dimmed)	Measured at all Dimming Levels				0	%	
Sag	Worst case - No Dimming @Full load				N/A	%	
Inrush Current	Per NEMA 410				74	A^2*T	
Repetitive Peak Current					N/A		
SPECIFICATION	Test Condition / Notes		Minimum	Nominal	Maximum	Units	
Line Regulation	Min-max input voltage				5	%	
Load Regulation	Min-max load				5	%	
Ripple & Noise	Peak-peak 2KHz Bandwidth ** Measured with the resistor values listed on the "LOAD-SPEC" tab. Measured at full power output.				30	%	
	Peak-peak 20MHz Bandwidth				40	%	
Flicker Percentage	Measured with supplied LED Load and Xenerqi Flicker Tester. For description see load-spec page. Measured from 1% - 100% dimming using UART To set current.				50	%	
Start-up Delay (100% output)	Worst case - No Dimming @Full load - To 10%				500	ms (Note, driver prevents turn-on for period as specified in Eaton specification).	
	Worst case - No Dimming @Full load - To 90%				750	ms	
Turn-on Overshoot	Overshoot in Output Current @Full load				0	%	
Turn OFF Delay	Time until Iout <= 0% of nominal current setting (NO DIE GLOW)				500	ms	
PROTECTION OPERATION			OPERATION METHOD				
Output Over Voltage Protection Methods	Shut down, auto recovery (Hiccup)						
Over Current Protection Methods	Limit maximum current to ISET, shutdown on short circuit with auto-recovery (** 2 A - Maximum)						
Over Temperature Protection Methods (Internal / External)	Internal - linear output current foldback						



# PRODUCT SPECIFICATION

XENERQI KSUART Driver XEL-xxxTCU-UUA12PP \ Eaton: ELX-PCD-UNV-A-0xx-yyyy-AMB-S AUX-01						
PROTECTION SPECIFICATIONS	Test Condition / Notes	Minimum	Nominal	Maximum	Units	
Over Voltage Protection Tolerance (Over Vmax)	Vmax > 60V		N/A			
	Vout <= 60V (Class-2)			59.9		V
Over Power Protection Tolerance XEL-040TCU-UUA12PP XEL-050TCU-UUA12PP	Maximum steady state power that the driver will deliver. Driver unit is self limiting and will reduce output current to bring output power below limit.			42.0		W
				52.5		W
				A		A
Over Current Protection Tolerance (Over Imax)	Limit to Iset			A		A
	Limit on Vout < Vmin		N/A			A
Over Temperature Protection (Internal Temperature)	Linear Foldback	92	98	104		°C
Over Temperature Protection (External NTC)	N/A		N/A			°C
AUXILLIARY OUTPUT						
AUXILLIARY OUTPUT SETPOINT	OUTPUT VOLTAGE			OUTPUT CURRENT		
	12.0V	24.0V	OTHER	25mA	75mA	OTHER
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SPECIFICATION	Test Condition / Notes	Minimum	Nominal	Maximum	Units	
Line Regulation	Min-max input voltage	-5%		20%	%	
Load Regulation	Min Load / Full Load	-5%		20%	%	
Ripple & Noise	20Mhz Bandwidth			1%	%	
Start-up Delay	Worst Case			300	ms	
Turn-on Overshoot	Overshoot in output voltage.			5	%	
SPECIFICATION	Test Condition / Notes	Minimum	Nominal	Maximum	Units	
Over Voltage Protection Tolerance	Limit to Auxilliary Vout		N/A		Limited by Design.* Class-2 Compliant	
Over Current Protection Tolerance	Hiccup Current Protection			150%	%	

Safety & Safety Approvals	REQUIRED	TEST STANDARD	Description	Comments	
Safety Standards - North America	<input checked="" type="checkbox"/>	UL8750/CSA 22.2 250.13	UL/CSA standard for LED Drivers/Components	UL 1310/C22.2 No. 223 are tested as part of the UL8750 testing regimen.	
	<input type="checkbox"/>	UL1310	UL standard for Class-2 power supplies		
	<input type="checkbox"/>	CSA C22.2 223	CSA standard for Class-2 power supplies		
	<input type="checkbox"/>	-			0
	<input type="checkbox"/>	-			0
	<input type="checkbox"/>	-			0
Safety Standards - International	<input checked="" type="checkbox"/>	CE			
	<input type="checkbox"/>	IEC 61347			
	<input type="checkbox"/>	EN60950			
	<input type="checkbox"/>	ENEC			
	<input type="checkbox"/>				
Sound Rating	<input checked="" type="checkbox"/>	Class A Sound Rating	22 dB maximum at 1 foot, Class A weighted.	Measured on 6 axis, unit at full load, unit suspended in free space.	
Hazardous substance restrictions					
	RoHS compliant				
Electro-Magnetic Compatibility	REQUIRED	TEST STANDARD	Description	Comments	
Conducted EMI	<input checked="" type="checkbox"/>	FCC Part 15/ICES-005 Rev4+ Class A	US/Canadian standard for conducted/radiated emissions		
	<input type="checkbox"/>	EN61000-3-4 (Cispr 15)	EU standard for conducted emissions		
Radiated EMI	<input checked="" type="checkbox"/>	FCC Part 15/ICES-005 Rev4+ Class A	US/Canadian standard for conducted/radiated emissions		
	<input type="checkbox"/>	EN55015:2013 - (CISPR15)	EU Standard for Radiated Emissions		
Conducted RF Immunity	<input checked="" type="checkbox"/>	EN61547:2009 / 61000-4-6	IEC Lighting Standard - Conducted RF Immunity (IEC61000-4-6)	Levels as per 61547	
Radiated Field	<input checked="" type="checkbox"/>	EN61000-4-3	RFI/EM Immunity	3V / M	
ESD	<input checked="" type="checkbox"/>	EN61000-4-2	ESD Immunity	8KV Air, 4KV Contact no damage	
Dips and Interruptions	<input checked="" type="checkbox"/>	EN 61000-4-11	Voltage dips, short interruptions and voltage variations imm		
Line Voltage Fluctuation & Flicker	<input type="checkbox"/>	EN61000-3-3			
Elect Fast Transient Immunity	<input checked="" type="checkbox"/>	EN61000-4-4	Electrical fast transient immunity	2KV Power, 0.5KV Signal (No flicker/restart)	
Electrical surge immunity	<input checked="" type="checkbox"/>	EN61000-4-5	Surge immunity	+ 6KV:L/N-G, 6KV: L-N (12 Ohm) + 6.0KV ringwave(Ansi). Testing as per 61547 - note only 10 hits.	
Magnetic Field Immunity	<input type="checkbox"/>	EN61547:2009 / 61000-4-8	IEC Lighting Standard - Magnetic Field Immunity (IEC61000-4-8)	Levels as per 61547	



# PRODUCT SPECIFICATION

XENERQI KSUART Driver XEL-xxxTCU-UUA12PP \ Eaton: ELX-PCD-UNV-A-0xx-yyyy-AMB-S AUX-01						
Environmental Specifications	Test Condition / Notes	Minimum	Nominal	Maximum	Units	
Operating Temperature Range	Ambient	-20		50	°C	
Case Temperature Range	Full Rated Specifications	-20		90	°C	
	Derated Specifications (Maximum Case Temperature)		N/A		°C	
Storage Temperature Range		-40		90	°C	
Humidity		5		95	%	
Vibration	3 - 50Hz 20 minutes		1		G	
Lifetime					HOURS	
	* <i>TcMax</i> - 75C Max Current, Nominal Voltage, Extended input voltage range, < 5% failures	50,000			** NOTE - Design would ensure close to 40C Ambient\Tcase to optimize	
Ingress Protection/UL Rating	UL Damp / Dry Rated		IP20			
		TL?	HL?	P?	UL RATING CLASS	
DRIVER RATINGS	Specific added rating requirements	NO	NO	YES		
ADDITIONAL FEATURES						
SPECIFICATION	Test Condition / Notes	Minimum	Nominal	Maximum	Units	
POWER METERING	AC Power measured during operation over range	+/-8%, +/- 1W over full specification +/-5%, +/- 1W over 115-125/265-285V 0-70C case			% of actual power put value of actual power	
ENERGY METERING	Cumulative AC Power measured during operation over range	Energy metering +/- 3.5% (oscillator drift w.r.t. temperature)			Watt-Hours (0.1Wh resolution)	
STANDBY POWER CONSUMPTION	Measured with relay-off, no load connected to auxiliary			1.00	Watt	
AC Input Wires or Terminals						
Wire Gauge	N/A - Terminals	TERMINAL COLORS				
Wire Length (mm)		Input (L)	Black			
Number of strands		Input (N)	White			
Insulation Diameter		Input (G)	Green			
Insulation Color						
Insulation Type						
Strip Length (mm)						
UL Type						
Special Notes:		Terminal Details (If applicable)				
DC Output Wires or Terminals						
Wire Gauge	N/A - Terminals	TERMINAL COLORS				
Wire Length (mm)		Output (+)	Red			
Number of strands		Output (-)	Blue			
Insulation Diameter		UART	RJ11			
Insulation Color						
Insulation Type						
Strip Length (mm)						
UL Type						
Special Notes:		Terminal Details (If applicable)				