

LED Driver

USC4 LITE



Safety Standards



USC4 LITE

Highlights & Features

- Constant current design
- Programmable output current through program tool
- 6KV Combi-wave surge rating meet ANSI C82.77-5
- UL LISTED, Class P & Type HL, UL Dry & Damp
- 1-10V dimming available
- 50,000hours lifetime

Model Number: USC4-□□□□□GB

Dimensions (L x W x H):

USC4-055180GB	6.59" x 2.36" x 1.5" (168.0 x 60.0 x 38.0mm)
USC4-100140GB	6.59" x 2.36" x 1.5" (168.0 x 60.0 x 38.0mm)
USC4-200140GB	9.45" x 2.36" x 1.5" (240.0 x 60.0 x 38.0mm)

General Description

Delta LED drivers come in different series to suit different application needs. The USC4 LITE series features program output current level. USC4 LITE series offers the capability to achieve different level of LED brightness via built-in 1-10V dimming function to meet various application and energy optimization needs. The products are designed and rigorously tested to work with various outdoor LED lighting conditions. Featuring high surge immunity (CM: 6kV, DM: 6kV) and complying to Dry and Damp location.

Model Information

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Model Number	Input Voltage Range	Rated Output Voltage	Program Output Current	Constant Power Current
USC4-055140GB	277-480Vac Typical	18-52.4Vdc	520-1400mA	1050-1800mA
USC4-100140GB	249 -528Vac Range	50-143Vdc	600-1400mA	700-1400mA
USC4-200140GB		75-190Vdc	600-1400mA	1050-1400mA

Model Numbering

US	C	4	-	□□□	□□□	GB
Safety Approval – UL,	Constant current	Outdoor and High voltage input		Output Power 055:55W 100:100W/ 200:200W	Max Output Current 140 – 1400mA 180 – 1800mA	Programmable output current 1-10V dimming

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Specifications

Model Number	USC4-055180GB	USC4-100140GB	USC4-200140GB
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Input Ratings / Characteristics

Normal Input Voltage	277-480Vac			
Input Voltage Range	254-528Vac			
Normal Input Frequency	50-60Hz			
Input Frequency Range	47-63Hz			
Max. Input Current	277Vac	0.45A	0.45A	0.8A
	480Vac	0.23A	0.23A	0.5A
Efficiency ¹⁾	277Vac	88.5%@1.05A	91.5%@0.7A	92.5%@1.05A
	480Vac	88.0%@1.05A	92.5%@0.7A	93.5%@1.05A
Inrush Current @ Cold Start	277Vac	100A/200uS	100A/200uS	100A/200uS
	480Vac	200A/200uS	200A/200uS	200A/200uS
Power Factor	> 0.9 @Full Load			
Total Harmonic Distortion	THD < 20% @Full Load			
Leakage Current	< 0.75mA per UL8750			

1) 100% Load (typical) and tested after 30 minutes warm up.

Output Ratings / Characteristics

Output Voltage Range	18-52.4Vdc	50-143Vdc	75-190Vdc
Max. No Load Output Voltage	60Vrms	150Vrms	230Vrms
Output Power Range	55W	100W	200W
Adjustable Output Current (AOC)	520-1800mA	600-1400mA	600-1400mA
	With steps of 1mA, configurable via software		
Minimum Output Current	+/-10% dim level		
Current Accuracy	± 5% (@ Typical output current range)		
Output Current LF Ripple	15% (ripple = peak-average/average) and 5% (Low frequency (≤120 Hz)) @Full Load		
Start-up Time	1000ms max. @ 277-480Vac @Full Load		

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Mechanical

Casing	Steel case, color : Black	
Dimensions (L x W x H) [inch] [mm]	6.59" x 2.36" x 1.5" (168.0 x 60.0 x 38.0mm)	9.45" x 2.36" x 1.5" (240.0 x 60.0 x 38.0mm')
Unit Weight [lb] / [kg]	1.83 / 0.83	2.53 / 1.15
Cooling System	Convection	
Input Cable	L: Black, N: White; UL1316 18AWG solid copper wires Length 300mm	
Output Cable	Positive: Red, Negative: Blue; NTC/PRG: Orange ; UL1316 18AWG solid copper wires Length 300mm	
Dimming Cable	Dim(+): Purple, Dim(-): Pink ; UL1316 18AWG solid copper wires Length 300mm	
Noise	Sound Pressure Level (SPL) < 24dBA (30cm distance)	

Environment

Ambient Temperature	Operating	-40°C to +55°C		
	Storage	-40°C to +85°C		
Maximum Case Temperature		+80°C	+85°C	+90°C
Relative Humidity	Operating	10 to 85% RH (Non-Condensing)		
	Storage	5 to 95% RH (Non-Condensing)		
Environmental Locations		Dry & Damp , Type HL		

Protections

Over Voltage	60Vrms	150Vrms	230Vrms
	Auto-Recovery when the fault is removed		
Overload / Overcurrent	Reduce output current. Auto-Recovery when the fault is removed		
Short Circuit	Auto-Recovery when the fault is removed		
Over Temperature	Reduce output current. Auto-Recovery when the fault is removed		
Case connection	Case must be grounding		

Reliability Data

Lifetime	50,000 hours at case temp. tc & full load. Refer to "Lifetime VS Case Temperature"		
Lifetime @ tc	+80°C	+75°C	+80°C

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Safety Standards / Directives

Electrical Safety	UL 8750, UL List, Class P, Class2 of UL1310 for 55W			
Material and Parts	RoHS Directive 2011/65/EU Compliant			
Isolation	Main	Output	0-10V dim	Case
Main	N/A	2U + 1000V	2U + 1000V	2U + 1000V
Output	2U + 1000V	N/A	2U + 1000V	2U + 1000V
0-10V dim	2U + 1000V	2U + 1000V	N/A	2U + 1000V
Case	2U + 1000V	2U + 1000V	2U + 1000V	N/A

EMC Compliance

Emissions (CE & RE)	Compliance to 47 CFR FCC Part 15, Subpart B, Class A Compliance to CAN ICES-005(A) / NMB-005(A)
Surge	Compliance to ANSI C82.77-5 CAT C low 6KV Meet Criteria A or B

1) Criteria A: Normal performance within the specification limits

2) Criteria B: Temporary degradation or loss of function, which is self-recoverable

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0-10V Dimming Specification

Absolute Maximum Voltage	$\pm 20V$
Source Current	100 μA (typ)
Dimming Input Range	(1) 1-10V for 10-100% dimming and 1V for 10% of I_{o_set} and $\geq 8.5V$ is 100% of I_{o_set} (2) Short is 10% of I_{o_set} (or 100mA minimum) & Open is 100% (3) See 1-10V Dimming Curve

Default Settings of the Driver (can be changed with programmable tools)

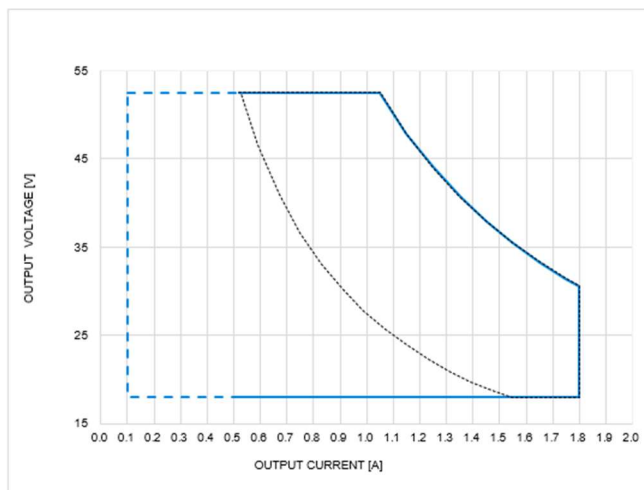
Adjustable Output Current (AOC)	1050mA	700mA	1050mA
Smart Timer DIM	Disabled Smart Time Dim		
Module Temperature Protection (MTP)	Disabled. Settable though programmable tools		
Constant Lumen Output (CLO)	Disabled. Settable though programmable tools.		
End of Life indication (EOL)	Disabled. Settable though programmable tools		

LED Driver

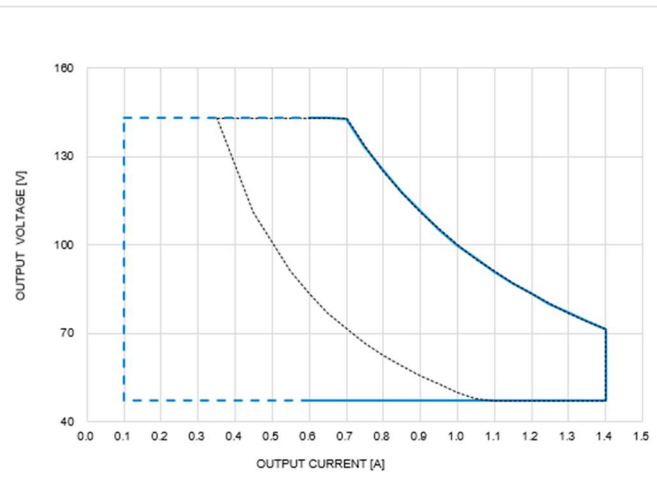
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Operation Window for programming

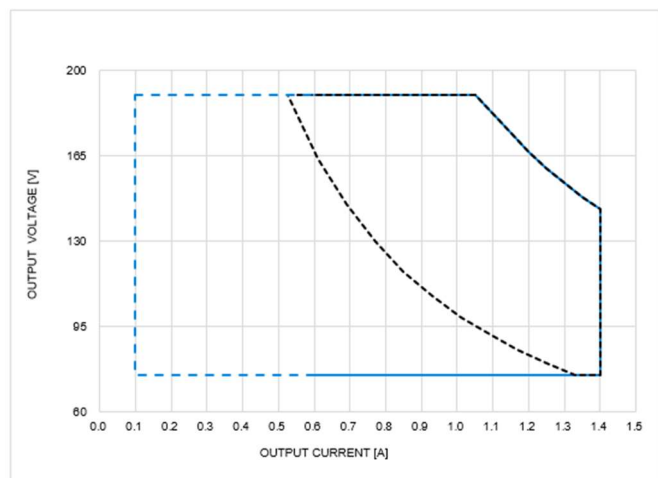
55W operating window



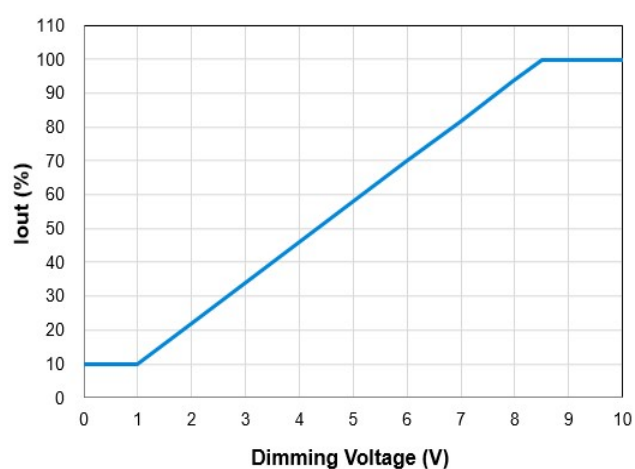
100W operating window



200W operating window



Dimming Curve



Note

Blue dot line for 0-10V range

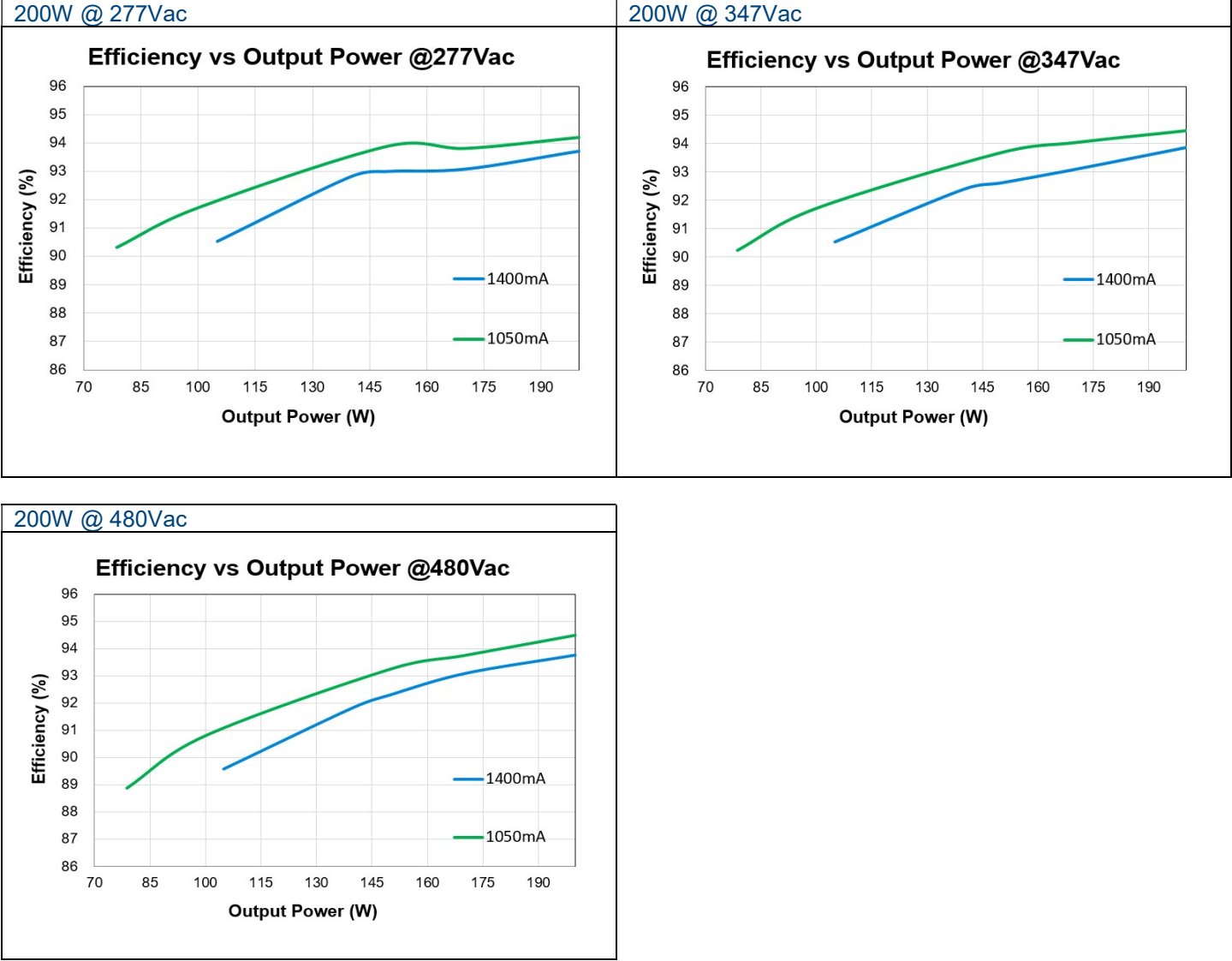
Blue solid line for programming range

Black dot line for performance (PF>0.9V and THD<20%)

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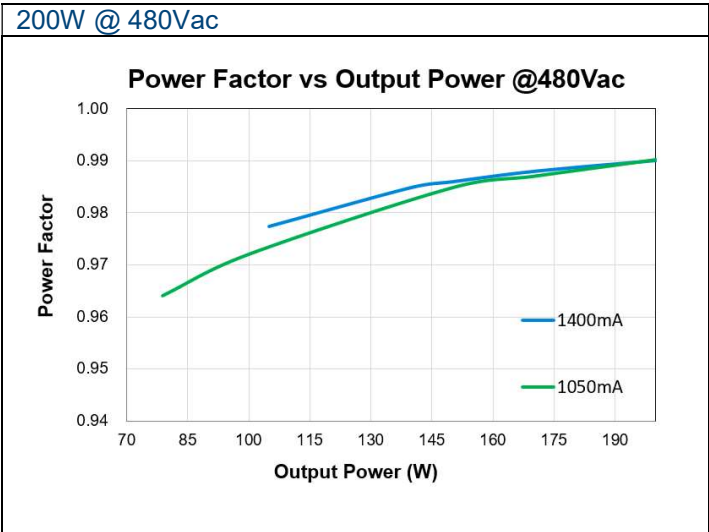
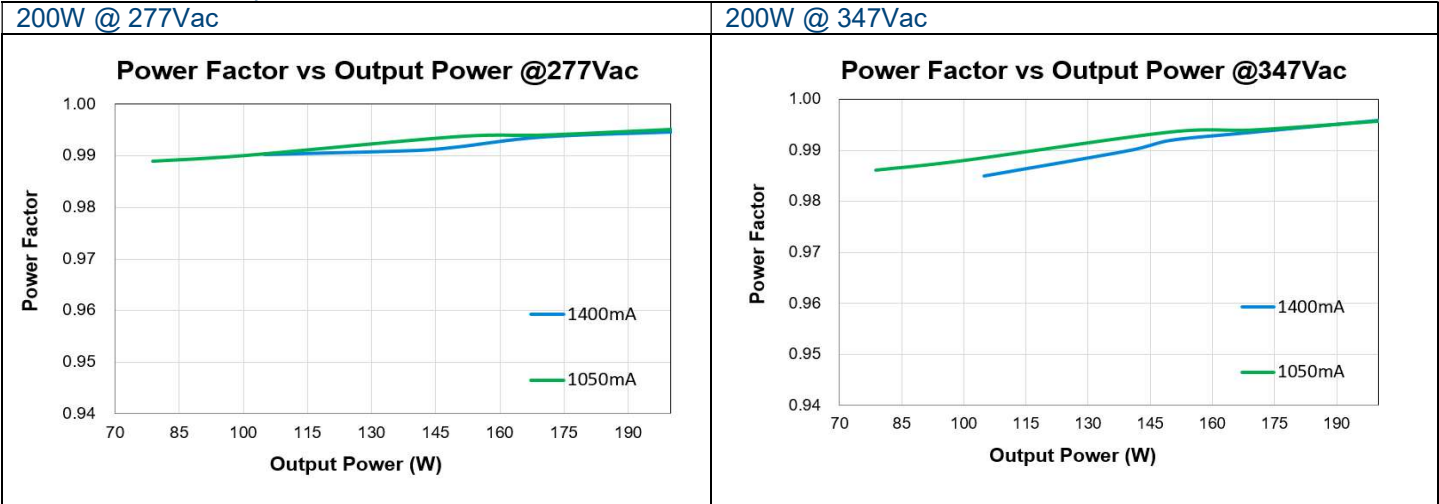
Efficiency VS Output Power



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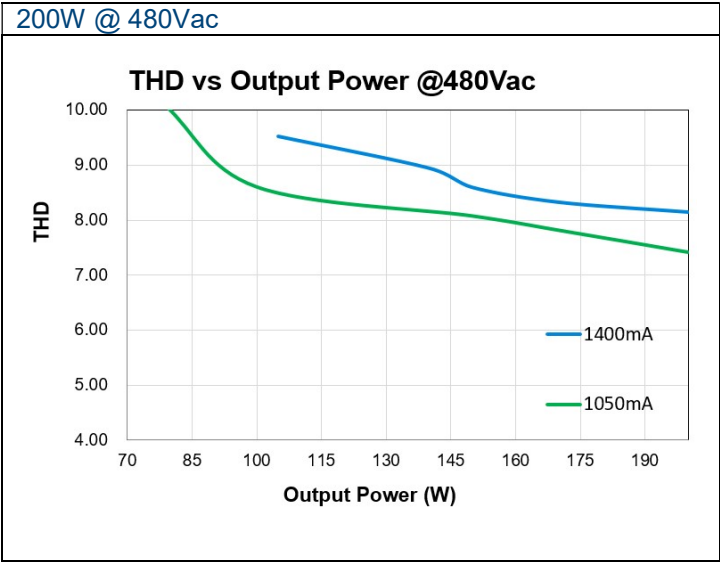
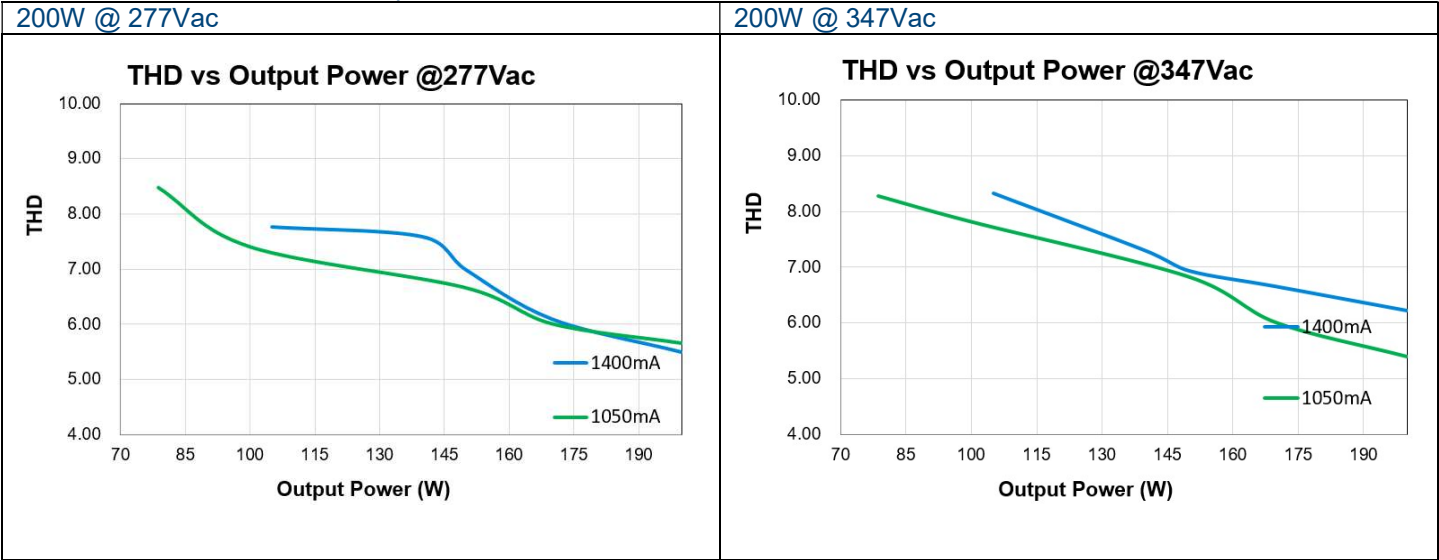
Power Factor VS Output Powe



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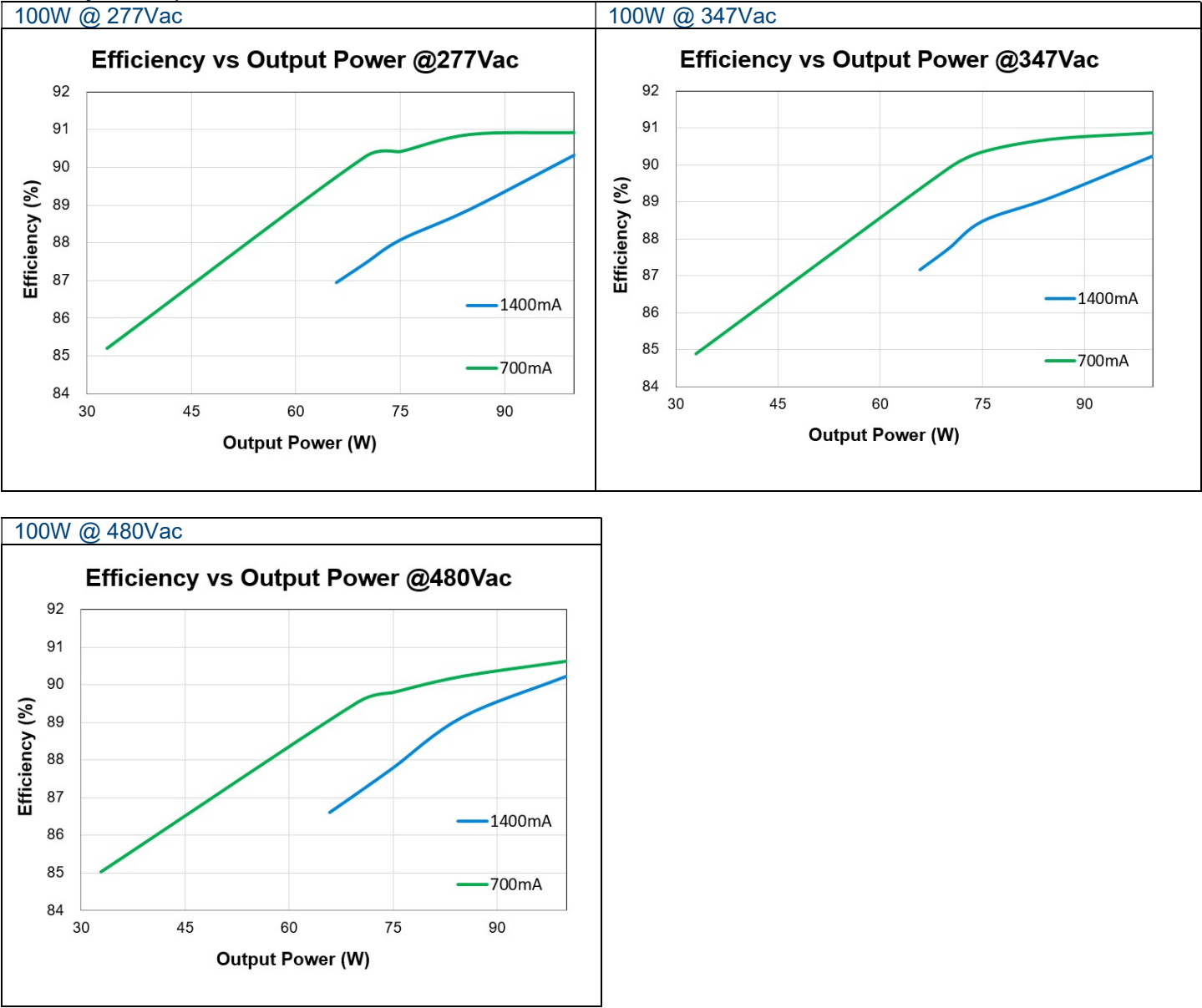
Total Harmonic Distortion VS Output Power



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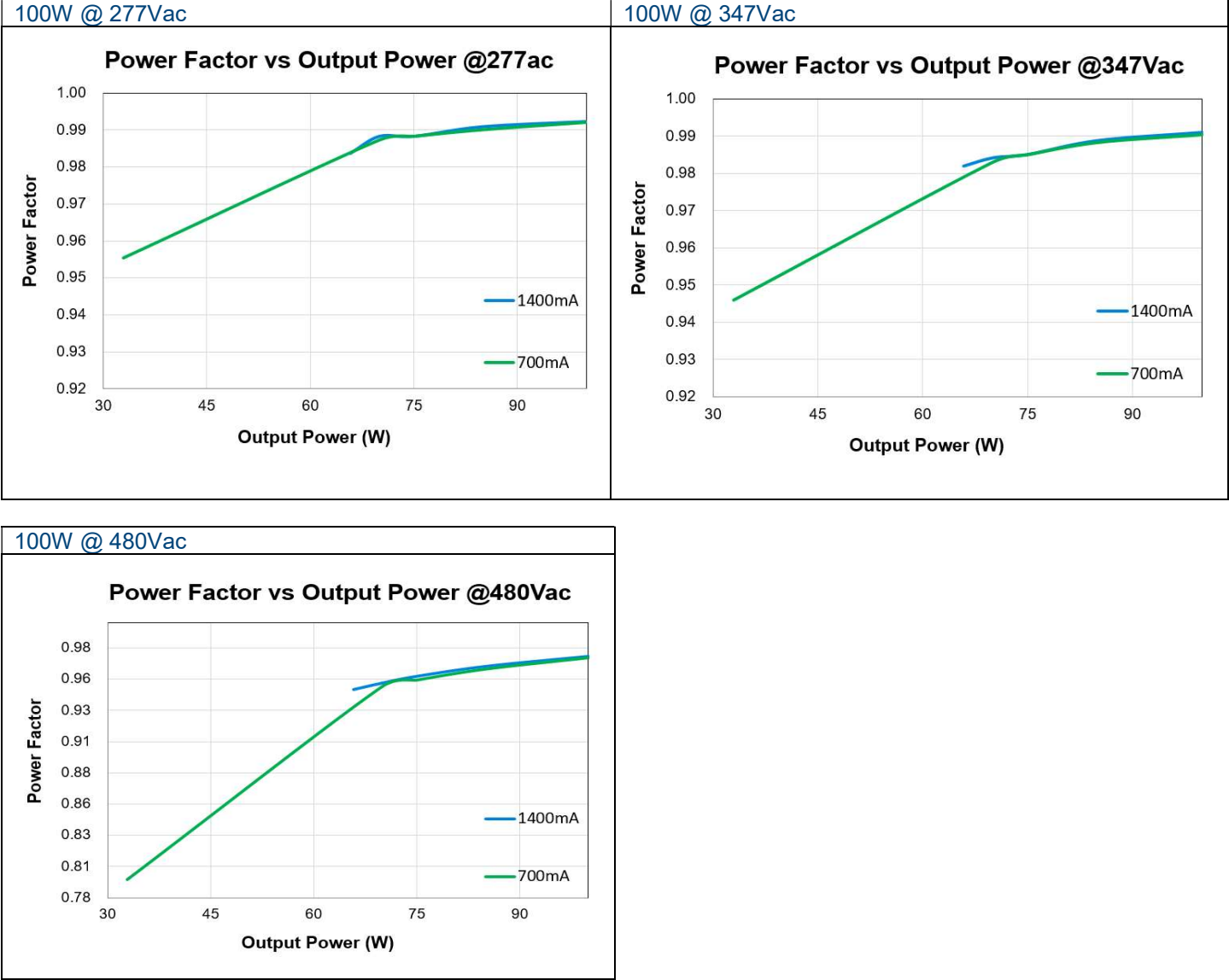
Efficiency VS Output Power



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Power Factor VS Output Power



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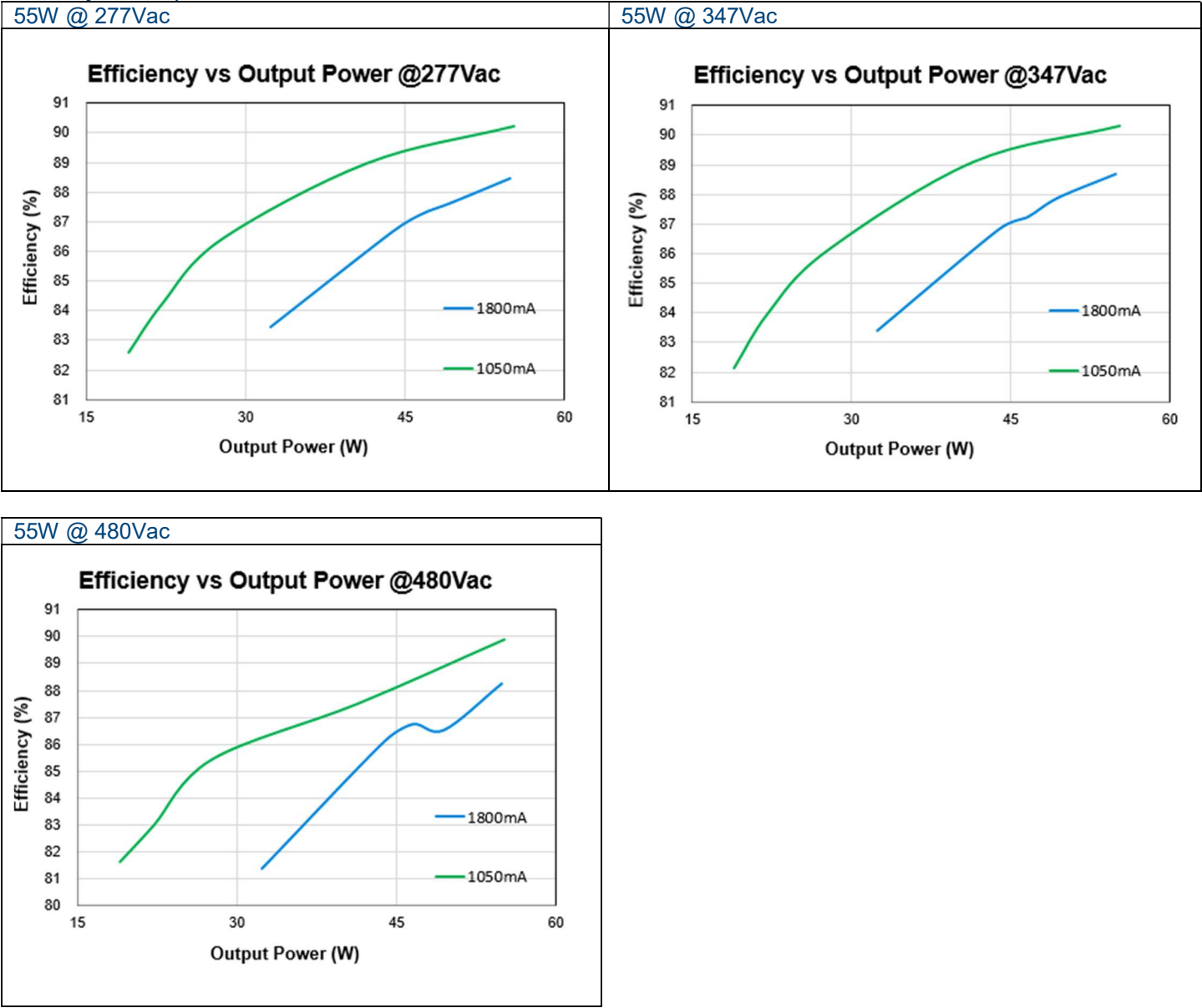
Total Harmonic Distortion VS Output Power



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Efficiency VS Output Power

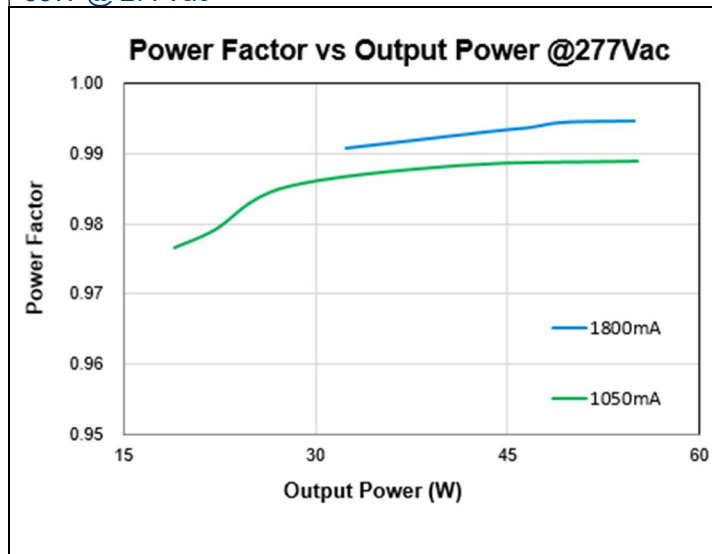


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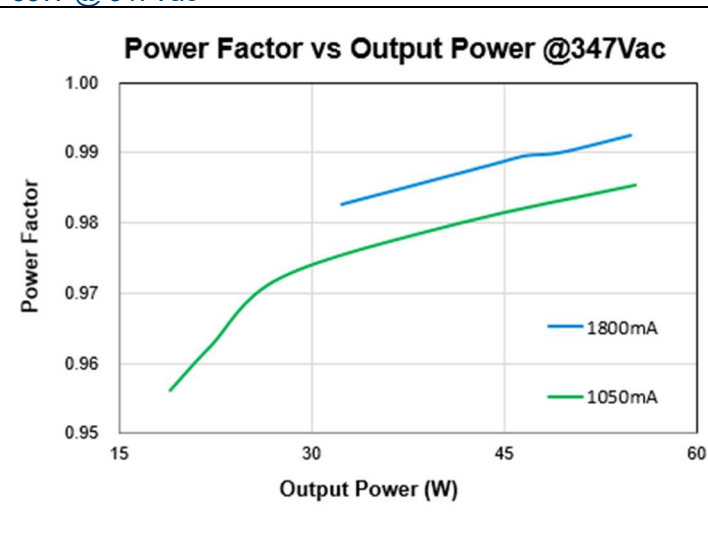
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Power Factor VS Output Power

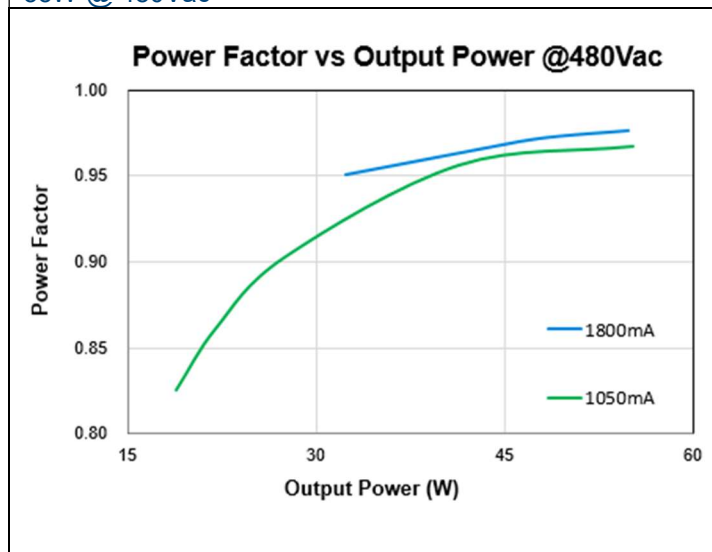
55W @ 277Vac



55W @ 347Vac



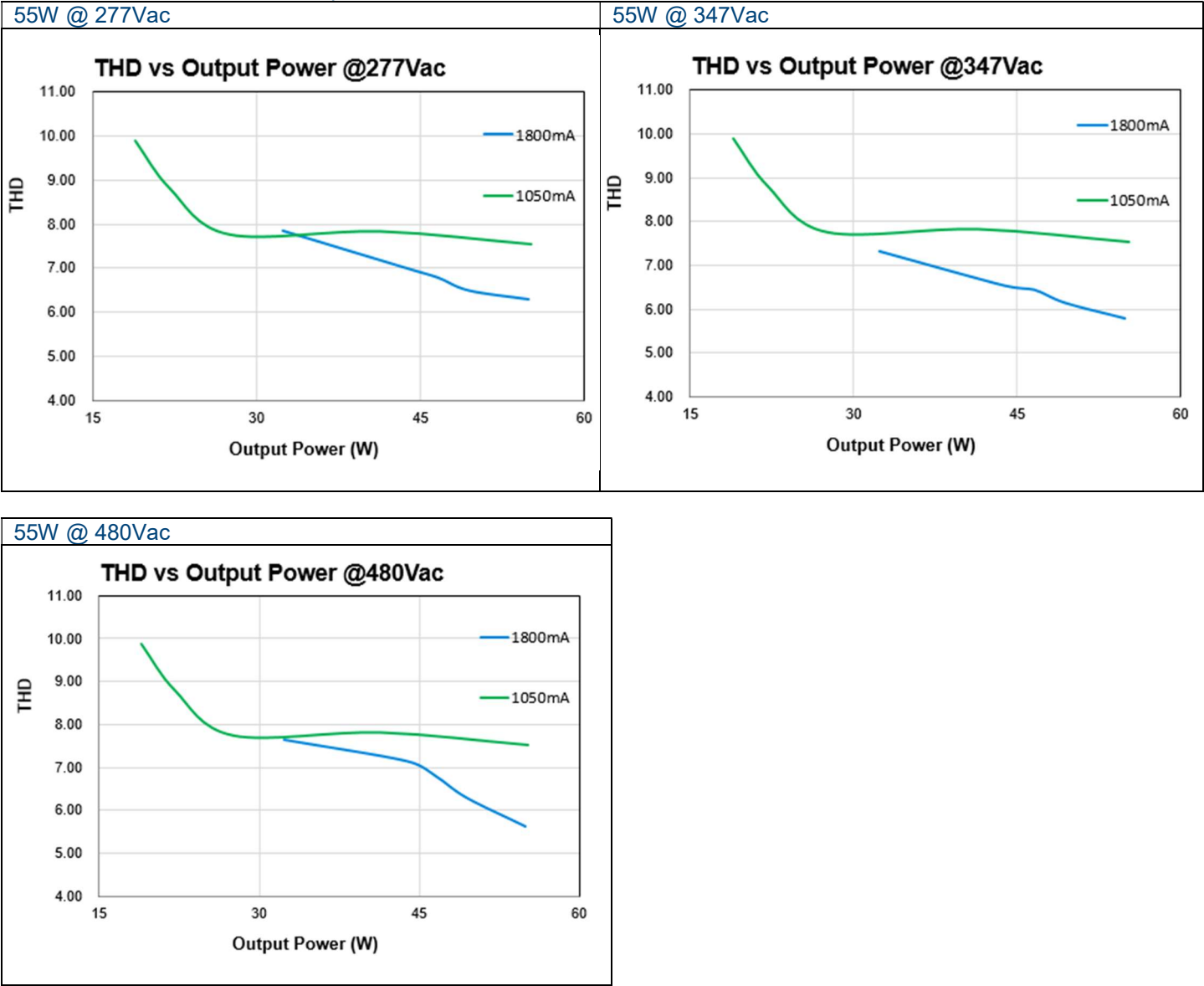
55W @ 480Vac



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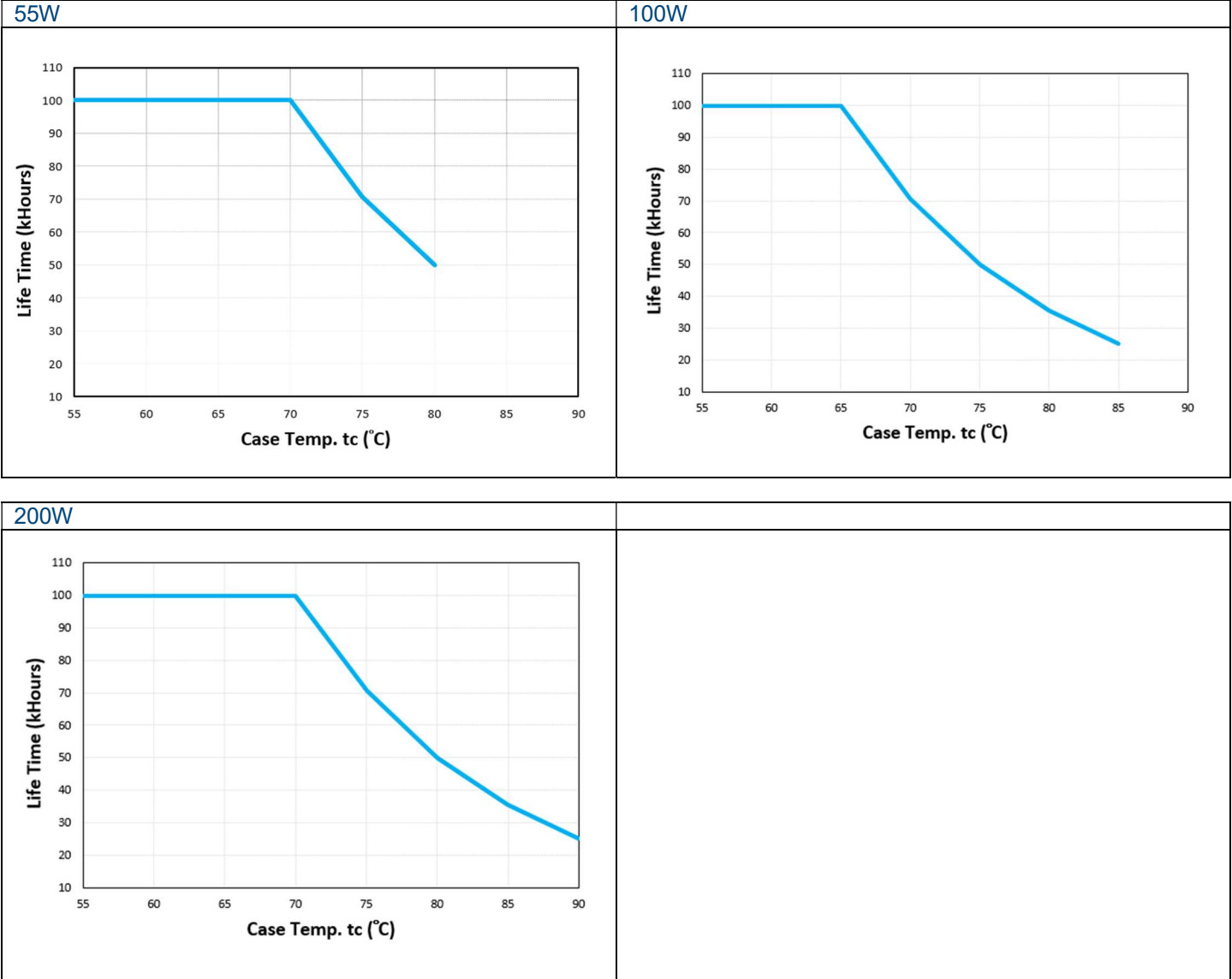
Total Harmonic Distortion VS Output Power



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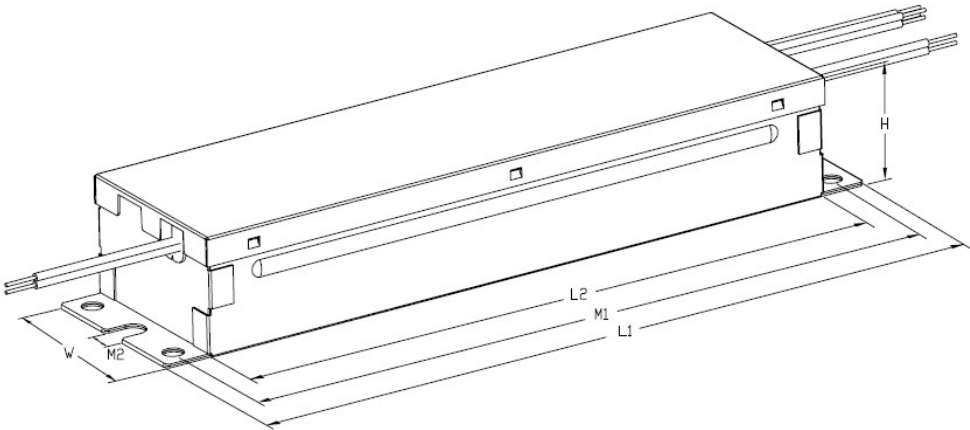
Lifetime VS Case Temperature



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Enclosure

	USC4-055180GB / USC4-100140GB	USC4-200140GB
	inch [mm]	inch [mm]
Total length (L1)	6.59 [168]	9.45 [240]
Case length (L2)	5.48 [139.2]	8.39 [213.2]
Case width (W)	2.36 [60.0]	2.36 [60.0]
Case height (H)	1.5 [38.0]	1.5 [38.0]
Mounting length (M1)	6.03 [153.2]	8.9 [226]
Mounting hole diameter (M2)	0.32 [8.0]	0.32 [8.0]

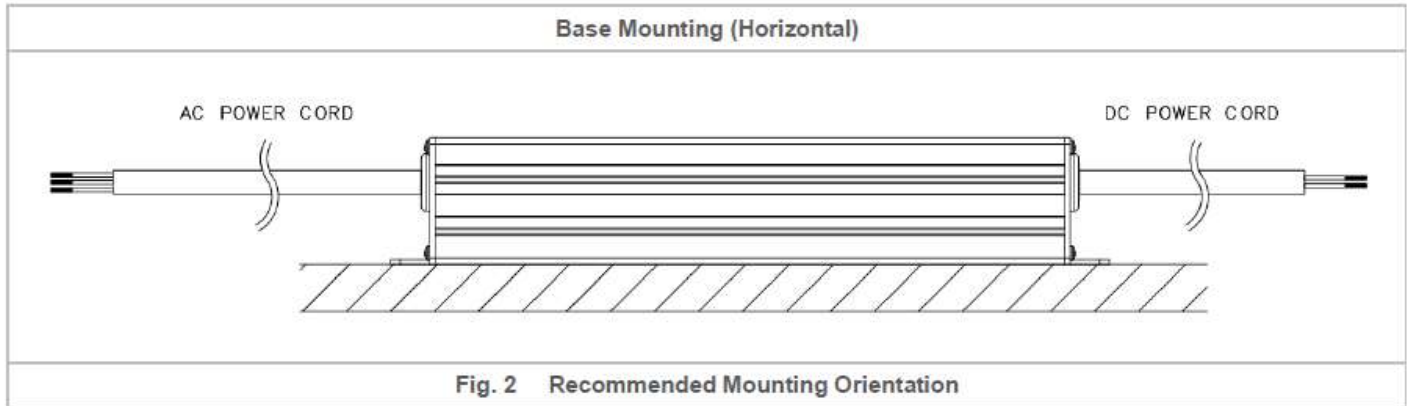


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Assembly & Installation

The device is not recommended to be placed on low thermal conductive surfaces. For example, plastics.



Safety Instructions

- ALWAYS switch mains of input power OFF before connecting and disconnecting the input voltage to the device. If mains are not turned OFF, there is risk of explosion / severe damage.
- To guarantee sufficient convection cooling, keep a distance of 50mm above and lateral distance to other units.
- DO NOT insert any objects into the device.
- The case of LED driver must be connected with grounding (PE).
- The current rating for the output cable must be rated higher than or equal to the output current of the power supply. Please refer to the product specifications..

Others

Warranty Policy

Please reach out our [Warranty Policy](#) should you require any further clarification.

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Document Revision Record

Date	Item	Content Revised	Page Affected	Rev
2021/10/29	1	First Draft	All	00