

**COMMISSION REGULATION (EU) 2019/1782 OF 1 OCTOBER 2019
 LAYING DOWN ECODESIGN REQUIREMENTS FOR EXTERNAL POWER
 SUPPLIES PURSUANT TO DIRECTIVE 2009/125/EC OF THE EUROPEAN
 PARLIAMENT AND OF THE COUNCIL AND REPEALING COMMISSION
 REGULATION (EC) No 278/2009**

Subject matter and scope

1. This Regulation establishes ecodesign requirements for the placing on the market or putting into service of external power supplies.

Ecodesign requirements for external power supplies

1. Energy efficiency requirements:

(a) from 1 April 2020, the no-load condition power consumption shall not exceed the following values:

	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies	Low voltage external power supplies	Multiple voltage output external power supplies
$P_o \leq 49,0 \text{ W}$	0,21 W	0,10 W	0,10 W	0,30 W
$P_o > 49,0 \text{ W}$	0,21 W	0,21 W	0,21 W	0,30 W

(b) from 1 April 2020, the average active efficiency shall be not less than the following values:

	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies	Low voltage external power supplies	Multiple voltage output external power supplies
$P_o \leq 1,0 \text{ W}$	$0,5 \times P_o/1W + 0,160$	$0,5 \times P_o/1W + 0,160$	$0,517 \times P_o/1W + 0,087$	$0,497 \times P_o/1W + 0,067$
$1 \text{ W} < P_o \leq 49,0 \text{ W}$	$0,071 \times \ln(P_o/1W) - 0,0014 \times P_o/1W + 0,67$	$0,071 \times \ln(P_o/1W) - 0,0014 \times P_o/1W + 0,67$	$0,0834 \times \ln(P_o/1W) - 0,0014 \times P_o/1W + 0,609$	$0,075 \times \ln(P_o/1W) + 0,561$
$P_o > 49,0 \text{ W}$	0,880	0,880	0,870	0,860

The relevant load conditions are as follows:

Percentage of nameplate output current	
Load condition 1	100 % ± 2 %
Load condition 2	75 % ± 2 %
Load condition 3	50 % ± 2 %
Load condition 4	25 % ± 2 %
Load condition 5	10 % ± 1 %
Load condition 6	0 % (no-load condition)

Verification tolerances

Parameters	Verification tolerances
No-load condition	The determined value (*) shall not exceed the declared value by more than 0,01 W.
Active mode efficiency at each of the applicable load conditions	The determined value (*) shall not be lower than the declared value by more than 5 %.
Average active efficiency	The determined value (*) shall not be lower than the declared value by more than 5 %.

(*) In the case of three additional units tested as prescribed in point 4, the determined value means the arithmetical mean of the values determined for these three additional units.

Safeguard clause

The manufacturer or its authorised representative shall be obliged to make the product comply with the provisions of the applicable implementing measure and/or with the CE marking and to end the infringement under conditions imposed by the Member State.

Where there is sufficient evidence that a product might be non-compliant, the Member State shall take the necessary measures which, depending on the gravity of the non-compliance, can go as far as the prohibition of the placing on the market of the product until compliance is established.

Where non-compliance continues, the Member State shall take a decision restricting or prohibiting the placing on the market and/or putting into service of the product in question or ensure that it is withdrawn from the market.



Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-230EB T
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	11.8A
Output power	230.0W
Average active efficiency	92.40%
Efficiency at low load (10 %)	83.48%
No-load power consumption	0.16W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-230GB B
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	11.8A
Output power	230.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	79.00%
No-load power consumption	0.21W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-230GB D
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	11.5A
Output power	230.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	79.00%
No-load power consumption	0.21W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-230P1A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	11.8A
Output power	230.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	85.67%
No-load power consumption	0.13W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-230P1B
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	11.5A
Output power	230.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	85.67%
No-load power consumption	0.15W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-180MB K
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	9.23A
Output power	180.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	83.00%
No-load power consumption	0.21W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-180TB F
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	9.23A
Output power	180.0W
Average active efficiency	90.49%
Efficiency at low load (10 %)	88.67%
No-load power consumption	0.14W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-180TB H
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	9.0A
Output power	180.0W
Average active efficiency	90.49%
Efficiency at low load (10 %)	88.67%
No-load power consumption	0.14W



Manufacturer's name or trade mark	Chicony Power Technology Co., Ltd.
Model identifier	A15-180P1A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	9.23A
Output power	180.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	81.94%
No-load power consumption	0.15W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-180P4A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	9.23A
Output power	180.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	85.49%
No-load power consumption	0.15W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-180P4B
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	9.0A
Output power	180.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	85.49%
No-load power consumption	0.15W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-150P2A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	7.7A
Output power	150.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	84.08%
No-load power consumption	0.01W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A12-120P1A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	6.15A
Output power	120.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	86.94%
No-load power consumption	0.21W

Manufacturer's name or trade mark	CHICONY POWER TECHNOLOGY (SUZHOU) CO., LTD.
Model identifier	A17-120P1A
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.5V (DC)
Output current	6.15A
Output power	120.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	79.00%
No-load power consumption	0.16W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-90YD D
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	4.74A
Output power	90.0W
Average active efficiency	90.02%
Efficiency at low load (10 %)	86.16%
No-load power consumption	0.09W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-65GD D
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	3.42A
Output power	65.0W
Average active efficiency	90.02%
Efficiency at low load (10 %)	86.16%
No-load power consumption	0.903W



Manufacturer's name or trade mark	FSP
Model identifier	9NA1205319
Input voltage	100-240V
Input AC frequency	47-63 Hz
Output voltage	19.0V (DC)
Output current	6.32A
Output power	120.0W
Average active efficiency	89.00%
Efficiency at low load (10 %)	87.00%
No-load power consumption	0.15W

Manufacturer's name or trade mark	TPV Electronics (Fujian) Co., Ltd.
Model identifier	ADPC2045
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	2.25A
Output power	45.0 W
Average active efficiency	88.50%
Efficiency at low load (10 %)	83.80%
No-load power consumption	0.091W

Manufacturer's name or trade mark	TPV Electronics (Fujian) Co., Ltd.
Model identifier	ADPC2065
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	3.25A
Output power	65.0 W
Average active efficiency	88.10%
Efficiency at low load (10 %)	86.70%
No-load power consumption	0.117W

Manufacturer's name or trade mark	TPV Electronics (Fujian) Co., Ltd.
Model identifier	ADPC2090
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	20.0V (DC)
Output current	4.5A
Output power	90.0 W
Average active efficiency	88.70%
Efficiency at low load (10 %)	86.70%
No-load power consumption	0.087W

Manufacturer's name or trade mark	SHENZHEN SOY TECHNOLOGY CO., LTD
Model identifier	SOY-1200500
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	12.0V (DC)
Output current	5.0A
Output power	60.0W
Average active efficiency	88.20%
Efficiency at low load (10 %)	88.30%
No-load power consumption	0.09W

Manufacturer's name or trade mark	SHENZHEN HONOR ELECTRONIC CO.,LTD
Model identifier	ADS-65HI-12N-1 12048E
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	12.0V (DC)
Output current	4.0A
Output power	48.0W
Average active efficiency	88.00%
Efficiency at low load (10 %)	84.10%
No-load power consumption	0.09W

Manufacturer's name or trade mark	SHENZHEN HONOR ELECTRONIC CO.,LTD
Model identifier	ADS-65HI-19A-1 19065E
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	3.42A
Output power	64.98W
Average active efficiency	90.10%
Efficiency at low load (10 %)	86.90%
No-load power consumption	0.08W

Manufacturer's name or trade mark	Delta Electronics, Inc.
Model identifier	ADP-65JH HB
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	3.42A
Output power	65.0W
Average active efficiency	88.50%
Efficiency at low load (10 %)	84.80%
No-load power consumption	0.12W

Manufacturer's name or trade mark	Delta Electronics, Inc.
Model identifier	ADP-90MD H
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	4.74A
Output power	90.0W
Average active efficiency	89.20%
Efficiency at low load (10 %)	87.60%
No-load power consumption	0.07W

Manufacturer's name or trade mark	SHENZHEN HONOR ELECTRONIC CO.,LTD
Model identifier	ADS-110CL-19-3 190090G
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	4.74A
Output power	90.06W
Average active efficiency	89.50%
Efficiency at low load (10 %)	88.20%
No-load power consumption	0.17W

Manufacturer's name or trade mark	SHENZHEN HONOR ELECTRONIC CO.,LTD
Model identifier	ADS-40NP-12-1 12030E
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	12.0V (DC)
Output current	2.5A
Output power	30.0W
Average active efficiency	88.10%
Efficiency at low load (10 %)	83.80%
No-load power consumption	0.06W

Manufacturer's name or trade mark	Asian Power Devices Inc.
Model identifier	DA-90J19
Input voltage	AC 100-120V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	4.74A
Output power	90.06W
Average active efficiency	89.40%
Efficiency at low load (10 %)	86.50%
No-load power consumption	0.082W

Manufacturer's name or trade mark	Asian Power Devices Inc.
Model identifier	DA-65C19
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	19.0V (DC)
Output current	3.42A
Output power	64.98W
Average active efficiency	89.30%
Efficiency at low load (10 %)	85.80%
No-load power consumption	0.087W

Manufacturer's name or trade mark	SHENZHEN SOY TECHNOLOGY CO., LTD
Model identifier	SUN-1200400
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	12.0V (DC)
Output current	4.0A
Output power	48.0W
Average active efficiency	88.72%
Efficiency at low load (10 %)	88.32%
No-load power consumption	0.08W

Manufacturer's name or trade mark	Delta Electronics, Inc.
Model identifier	ADP-90FE D
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	5.0V / 9.0V / 10.0V / 12.0V / 15.0V / 20.0V
Output current	3.0A / 3.0A / 5.0A / 5.0A / 5.0A / 4.5A
Output power	15.0W / 27.0W / 50.0W / 60.0W / 75.0W / 90.0W
Average active efficiency	81.4%
Efficiency at low load (10 %)	79.54%
No-load power consumption	0.272W

Manufacturer's name or trade mark	DELTA ELECTRONICS (JIANGSU) LTD.
Model identifier	ADP-65SD B
Input voltage	100-240V
Input AC frequency	50-60 Hz
Output voltage	5.0V / 12.0V / 15.0V / 20.0V
Output current	3.0A / 3.0A / 3.0A / 3.25A
Output power	15.0W / 36.0W / 45.0W / 65.0W
Average active efficiency	83.45%
Efficiency at low load (10 %)	83.97%
No-load power consumption	0.06W



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