ANNEX II

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**
$P_O \leq 49{,}0$ W	0,21 W	0,10 W	0,10 W	0,30 W
$P_O > 49{,}0$ 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**
$P_O \leq 1{,}0$ 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 W $< P_O \leq$ 49,0 W	$0{,}071 \times \ln(P_O/1W) - 0{,}0014 \times P_O/1W + 0{,}67$	$0{,}071 \times \ln(P_O/1W) - 0{,}0014 \times P_O/1W + 0{,}67$	$0{,}0834 \times \ln(P_O/1W) - 0{,}0014 \times Po/1W + 0{,}609$	$0{,}075 \times \ln(P_O/1W) + 0{,}561$
$P_O > 49{,}0$ W	0,880	0,880	0,870	0,860

2. Information requirements:

(a) from 1 April 2020, the nameplate shall include the following information:

Nameplate information	Value and precision	Unit	Notes
Output power	X,X	W	In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage — Output current – Output power shall be given.
Output voltage	X,X	V	In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage — Output current – Output power shall be given.
Output current	X,X	A	In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage — Output current – Output power shall be given.

(b) from 1 April 2020, instruction manuals for end-users (where applicable), and free access websites of manufacturers, importers or authorised representatives shall include the following information, in the order as set out below:

Information published	Value and precision	Unit	Notes
Manufacturer's name or trade mark, commercial registration number and address			

Model identifier			
Input voltage	X	V	Specified by the manufacturer. Shall be a value or a range.
Input AC frequency	X	Hz	Specified by the manufacturer. Shall be a value or a range.
Output voltage	X,X	V	Nameplate output voltage. Shall indicate whether is AC or DC. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage — Output current – Output power shall be published.
Output current	X,X	A	Nameplate output current. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage — Output current – Output power shall be published.
Output power	X,X	W	Nameplate output power. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage —

			Output current – Output power shall be published.
Average active efficiency	X,X	%	Declared by the manufacturer based on the value calculated as arithmetical mean of efficiency at load conditions 1-4. In cases where multiple average active efficiencies are declared for multiple output voltages available at load condition 1, the value published shall be the average active efficiency declared for the lowest output voltage.
Efficiency at low load (10 %)	X,X	%	Declared by the manufacturer based on the value calculated at load condition 5. External power supplies with a nameplate output power of 10 W or less shall be exempted from this requirement. In cases where multiple average active efficiencies are declared for multiple output voltages available at load condition 1, the value published shall be the value declared for the lowest output voltage.
No-load power consumption	X,XX	W	Declared by the manufacturer based on the value

			measured for load condition 6.

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)

(c) from 1 April 2020, the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:

(1) for external power supplies with a nameplate output power greater than 10 watts:

Reported Quantity	**Description**
Root mean square output current (mA)	Measured at load conditions 1-5
Root mean square output voltage (V)	
Active output power (W)	
Root mean square input voltage (V)	Measured at load conditions 1-6
Root mean square input power (W)	
Total harmonic distortion of the input current	
True power factor	
Power consumed (W)	Calculated at load conditions 1-5, measured at load condition 6
Active mode efficiency	Calculated at load conditions 1-5
Average active efficiency	Arithmetical mean of efficiency at load conditions 1-4

In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the relevant reported quantities shall be specified for each measurement.

The relevant load conditions are set out in point 2(b);

(2) for external power supplies with a nameplate output power of 10 watts or less:

Reported Quantity	Description
Root mean square output current (mA)	Measured at load conditions 1-4
Root mean square output voltage (V)	
Active output power (W)	
Root mean square input voltage (V)	Measured at load conditions 1-4 and 6
Root mean square input power (W)	
Total harmonic distortion of the input current	
True power factor	
Power consumed (W)	Calculated at load conditions 1-4, measured at load condition 6
Active mode efficiency	Calculated at load conditions 1-4
Average active efficiency	Arithmetical mean of efficiency at load conditions 1-4

In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the relevant reported quantities shall be specified for each measurement.

The relevant load conditions are set out in point 2(b).

3. Measurements and calculations

For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards the reference numbers of which have been published for this purpose in the *Official Journal of the European Union*, or other reliable, accurate and reproducible methods, which take into account the generally recognised state of the art.

Changes to legislation:
There are outstanding changes not yet made to Commission Regulation (EU) 2019/1782. Any changes that have already been made to the legislation appear in the content and are referenced with annotations.
View outstanding changes

Changes and effects yet to be applied to the whole legislation item and associated provisions

- Signature words omitted by S.I. 2020/1528 reg. 16(6)
- Annex 2 para. 3 words substituted by S.I. 2020/1528 reg. 16(7)
- Art. 2(20)(21) inserted by S.I. 2020/1528 reg. 16(2)(b)