




THE ECO DECLARATION

Product environmental attributes – THE ECO DECLARATION

The declaration may be published only when all rows and/or fields marked with an * are filled-in (n.a. for not applicable).
Additional information regarding each item may be found under P14.

Brand *	<i>Think</i>	
Company name *	<i>Lenovo</i>	
Contact information *	<i>Lenovo Global Environmental Affairs Alvin L Carter 1009 Think Place Building 2 / 5F1 Morrisville, North Carolina 27560 alcarter@lenovo.com</i>	
Internet site *	http://www.lenovo.com/social_responsibility/us/en/environment.html	
Additional information	<i>The latest version of this document can be found at http://www.lenovo.com/social_responsibility/us/en/datasheets_notebooks.html</i>	

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	<i>Notebook</i>
Commercial name *	<i>ThinkPad T460p</i>
Model number *	<i>20FW, 20FX</i>
Issue date *	<i>2015-12-29</i>
Intended market *	<input checked="" type="checkbox"/> Global <input type="checkbox"/> Europe <input type="checkbox"/> Asia, Pacific & Japan <input type="checkbox"/> Americas <input type="checkbox"/> Other
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

Quality Control		Requirement met	
		Yes	No
QC1 *	The company enforces an internal quality control scheme to ensure the correctness of this eco declaration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
QC2 *	The company is a member of an eco declaration system that enforces regular independent quality control such as organized by IT-Företagen (see www.itecodeclaration.org).	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Model number *	20FW, 20FX		
Issue date *	2015-12-29	Logo	Lenovo

Product environmental attributes - Legal requirements		Requirement met		
		Yes	No	n.a.
P1	Hazardous substances and preparations			
P1.1*	Products do not contain more than; 0.1% lead, 0.01% cadmium, 0.1% mercury, 0.1% hexavalent chromium, 0.1% polybrominated biphenyls (PBB) or 0.1% polybrominated diphenyl ethers (PBDE). (See legal reference and Note B1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorocarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.4*	Products do not contain more than; 0.005% polychlorinated biphenyl (PCB), 0.005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.5*	Products do not contain more than 0.1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.6*	Textile and leather parts with direct skin contact do not contain Tri-(2,3,-dibromopropyl)-phosphate (TRIS), Tris-(aziridiny)-phosphineoxide (TEPA), polybrominated biphenyl (PBB) (see legal reference). Comment: Legal reference has no maximum concentration values.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P1.7*	Textile and leather parts with direct skin contact do not contain more than 0.003% Azo colorants that split aromatic amines. (See legal reference and Note B1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P1.8*	Wooden parts do not contain arsenic and chromium as a wood preservation treatment as well as pentachlorophenol and derivatives (see legal reference). Comment: Legal reference has no maximum concentration values.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P1.9*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0.5 microgram/cm ² /week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:1998.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P1.10*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): http://www.lenovo.com/social_responsibility/us/en/materials.html	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2	Batteries			
P2.1*	If the product contains a battery or an accumulator, it is labeled with the disposal symbol and if it contains more than 0.0005% of mercury (for button cells only) by weight, or more than 0.004% of lead, it shall be marked with the chemical symbol for the metal concerned, Hg or Pb. Information on proper disposal is provided in user manual. (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2.2*	Button cells used in the product do not contain more than 2% by weight of mercury. Other batteries or accumulators do not contain more than 0.0005% of mercury or 0.002% of cadmium. (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2.3*	Batteries and accumulators are easily removable by either users or service providers (as dependent on the design of the product). Exception: Batteries that are permanently installed for safety, performance, medical or data integrity reasons do not have to be "easily removable". (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3	Safety, EMC connection to the telephone network and labeling			
P3.1*	The product complies with legally required safety standards as specified (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3.2*	The product complies with legally required standards for electromagnetic compatibility (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3.3*	If product is intended for connection to a public telecom network or contains a radio transmitter, it complies with legally required standards for radio and telecommunication devices (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3.4*	The product is labeled to show conformance with applicable legal requirements (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P4	Consumable materials			
P4.1*	If a photo conductor (drum, belt etc.) is used in the product, it does not contain cadmium max 0.01% (see legal reference and Note B1).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P4.2*	If ink/toner is used in the product, it does not contain cadmium max 0.1% by weight (see legal reference).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P4.3*	If the ink/toner formulation/preparation is classified as hazardous according to applicable regulations, the product/packaging is adequately labeled and a Safety Data Sheet (SDS) in accordance with these requirements is available (see legal reference).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P5	Product packaging			
P5.1*	Packaging and packaging components do not contain more than 0.01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P5.2*	Plastic packaging material is marked according to ISO 11469 referring ISO 1043 (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note B1: Restriction applies to the homogeneous material, unless other specified and expressed in weight %.

Model number *	20FW, 20FX		
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Product environmental attributes - Market requirements (continued) **Requirement met**

Item Yes No n.a.

P9 Energy consumption

9.1 For the product the following power levels or energy consumptions are reported: [See P14](#)

Energy mode *	Power level at 100 V AC	Power level at 115 V AC	Power level at 230 V AC	Reference / Standard for energy modes and test method *	<input type="checkbox"/>
Peak (On-max)	90 W	90 W	90 W	Full load	<input type="checkbox"/>

Category I3

Short Idle State - WOL Enabled	10.51W	10.37W	10.63W	Use for ENERGY STAR V6.1 registration (P_{idle})	<input type="checkbox"/>
Long Idle State - WOL Enabled	6.37W	6.32W	6.25W	Use for ENERGY STAR V6.1 registration (P_{idle})	<input type="checkbox"/>
Sleep (S3) - WOL Enabled	1.19W	1.19W	1.25W	Use for ENERGY STAR V6.1 registration (P_{sleep})	<input type="checkbox"/>
Off (S5) - WOL Enabled	0.35W	0.35W	0.40W	Use for ENERGY STAR V6.1 registration (P_{off})	<input type="checkbox"/>
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)	0.10W	0.10W	0.17W		<input type="checkbox"/>
PTEC * Typical Energy Consumption	4.29 W	4.25 W	4.35 W		<input type="checkbox"/>
TEC * Typical Energy Consumption	0.72 kWh/week	0.72 kWh/week	0.73 kWh/week		<input type="checkbox"/>
ETEC * Annual Energy Consumption	37.62 kWh/year	37.20 kWh/year	38.12 kWh/year	$E_{TEC} = (8760/1000) \times (P_{off} \times 0.25 + P_{sleep} \times 0.35 + P_{long_idle} \times 0.10 + P_{short_idle} \times 0.30)$	<input type="checkbox"/>

Display resolution* : 2560*1440 Megapixels

Print Speed* : Images per minute

Default time to enter energy save mode: 20 minutes

P9.2* Information about the energy save function is provided with the product.

P9.3* The product meets the energy requirements of the following voluntary program/s:
ENERGY STAR® version: **Version 6.1** Tier: Product category: **I3**
Others specify:

P10 Emissions

Noise emission – Declared according to ISO 9296

P10.1	Mode	Mode description	Declared A-weighted sound power level $L_{WA,d}$ (B)	Declared A-weighted sound pressure level L_{pAm} (dB)		
				Operator position <input checked="" type="checkbox"/> Desktop <input checked="" type="checkbox"/> or Desk side <input type="checkbox"/>	Bystander positions <input type="checkbox"/> (only if product is not operator attended)	
	Idle	* Idle	* 3.1	23	19	<input type="checkbox"/>
	Operation	* HDD	* 3.2	24	19	<input type="checkbox"/>
	Other mode	CPU operating	3.8	31	25	
Measured according to: <input checked="" type="checkbox"/> ISO7779 <input checked="" type="checkbox"/> ECMA-74 <input type="checkbox"/> Other (only if not covered by ECMA-74 with L_{pAm} measurement distance m)						

P10.2 The product meets the acoustic noise requirements of the following voluntary program/s: **STD-002 ver 3.3 Acoustic Test ; STD-014 ver 3.8 Discrete Tone ; STD-016 ver 2.3 Swan-BlueAngel Declaration ; STD-017 ver 2.4 Annoying Noise Measurement**

Model number *	20FW, 20FX		
Issue date *	2015-12-29	Logo	Lenovo

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
Chemical emissions from printing products				
P10.3*	Test performed according to ECMA-328 (ISO/IEC 28360) standard <input type="checkbox"/> , other specify:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P10.4	Typical emission rate (print phase) is (mg/h): Dust Ozone Styrene Benzene TVOC			<input checked="" type="checkbox"/>
P10.5	Chemical emission requirements of the following voluntary program/s are met for : Dust <input type="checkbox"/> Ozone <input type="checkbox"/> Styrene <input type="checkbox"/> Benzene <input type="checkbox"/> TVOC <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electromagnetic emissions				
P10.6	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program/s:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P11 Consumable materials for printing products				
P11.1*	A Safety Data Sheet (SDS) is available for the ink/toner preparation, even if not legally required (see P4.3).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P11.2*	Paper containing post-consumer recycled fibers can be used, provided that it meets the requirements of EN12281.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P11.3*	2-sided (duplex) printing/copying is an integrated product function.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P12 Ergonomics for computing products				
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P13 Packaging and documentation				
P13.1*	Product packaging material type(s): Corrugated Cardboard weight (kg): 0.375 Product packaging material type(s): 100% Recycled Polyethylene weight (kg): 0.130 Product packaging material type(s): Others (Plastic Bag) weight (kg): 0.036			
P13.2*	Product plastic packaging is free from PVC.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P13.3*	Specify media for user and product documentation (tick box): Electronic <input checked="" type="checkbox"/> , Paper <input checked="" type="checkbox"/> , Other <input type="checkbox"/>			<input type="checkbox"/>
P13.4*	For paper user and product documentation, please specify contained percentage of post-consumer recycled fiber: 70% (only for Japan)			<input type="checkbox"/>
P14 Additional information (See Note B4)				
NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.				
P9	See Energy Star Qualified Notebooks & Tablet Computers for the latest information: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CO			

Note B4: Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

Legal references Europe Annex B

Reference	Declaration item
2002/95/EC (ROHS Directive)	P1.1, P4.1
REACH, Annex XVII	P1.6, P1.8, P4.2
REACH, Annex XVII	P1.4
REACH, Annex XVII	P1.2
REACH, Annex XVII	P1.7
REACH, Annex XVII	P1.9
Regulation (EC) No. 2037/2000, 2038/2000, 2039/2000	P1.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
2006/66/EC (Battery and accumulators Directive)	P2.1, P2.2, P2.3, P3.4, P8.1
2006/95/EC (Low Voltage Directive)	P3.1, 3.4
2004/108/EEC (New EMC Directive)	P3.2, 3.4
1999/5/EC (R&TTE Directive)	P3.3, 3.4
"REACH" Regulation (1907/2006), annex VII	P1.10
(EC) No.1272/2008 regulation on classification, labeling and packaging (CLP)	P4.3
REACH article 31, annex II	P4.3
2004/12/EC (Directive on packaging and packaging waste)	P5.1
(97/129/EC) (Commission Decision on Identification System for Packaging Materials)	P5.2
2037/2000/EC Regulation on Substances that Deplete the Ozone Layer	P5.3
2002/96/EC (WEEE directive)	P3.4, P6.1
(EC) No.1272/2008 regulation on classification, labeling and packaging (CLP)	P7.19

Lenovo ErP Lot3 Information Sheet


- PC / Notebook -

As required by COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (ErP Lot3).

Products scope of this sheet:

Desktop computer, integrated desktop computer, and notebook computer

This document is only valid in connection with the IT Eco Declaration of the specific Product.

Commercial name	<i>ThinkPad T460p</i>	
Model Number	<i>20FW, 20FX</i>	
Issue Date	<i>2015-12-29</i>	
Additional information		

P7.1.1 Product environmental attributes					
(d)	year of manufacture:				<i>2016</i>
(e)	E TEC value (kWh) per ErP Lot 3 Category and capability adjustments applied when all discrete graphics cards (dGfx) are disabled and if the system is tested with switchable graphics mode with UMA driving the display: Category (according to ErP Lot 3): <i>A</i> Etec: <i>38.12</i>				
(f)	E TEC value (kWh) per ErP Lot 3 Category and capability adjustments applied when all discrete graphics cards (dGfx) are enabled : Category (according to ErP Lot 3): Etec:				
(g)	idle state power demand (Watts);				<i>6.30</i>
(h)	sleep mode power demand (Watts);				<i>1.17</i>
(i)	sleep mode with WOL enabled power demand (Watts) (where enabled);				<i>1.17</i>
(j)	off mode power demand (Watts);				<i>0.29</i>
(k)	off mode with WOL enabled power demand (Watts) (where enabled);				<i>0.30</i>
(l)	internal power supply efficiency at 10 %, 20 %, 50 % and 100 % of rated output power (if applicable):				
	10%	20%	50%	100%	Average
(m)	external power supply efficiency (if applicable):				
	10%	20%	50%	100%	Average ;
	or level: <i>V</i>				
(o)	the minimum number of loading cycles that the batteries can withstand (applies only to notebook computers):				<i>500 cycles</i>
(p-1)	the measurement methodology used to determine information mentioned in points (l) – internal PSU efficiency:				
	<i>NA</i>				
(p-2)	the measurement methodology used to determine information mentioned in points (m) – external PSU efficiency:				
	<i>Measuring the Energy Consumption of External Power Supplies, Appendix Z to 10 CFR Part 430.</i>				
(p-3)	the measurement methodology used to determine information mentioned in points (o) – loadingcycles batteries:				
	<i>IEC 61960 measurement methodology / 0.5C Charge/Discharge</i>				
(p-4)	the measurement methodology used to determine information mentioned in maximum, idle, sleep, off mode				

	power as defined in Point P9.1 in the Product IT Eco Declaration: <i>IEC 62623 measurement methodology</i>	
(q)	sequence of steps for achieving a stable condition with respect to power demand:: <i>IEC 62623 measurement methodology</i>	
(r)	description of how sleep and/or off mode was selected or programmed: <i>By selecting sleep and/or off mode thru Windows operating system</i>	
(s)	sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode: <i>refer to power management, 20mins automatically reaches sleep mode</i>	
(t)	the duration of idle state condition before the computer automatically reaches sleep mode , or another condition which does not exceed the applicable power demand requirements for sleep mode (in minutes):	20
(u)	the length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode (in minutes):	NA
(v)	the length of time before the display sleep mode is set to activate after user inactivity (in minutes):	10
(w)	information on the energy-saving potential of power management functionality: <i>refer to user manual</i>	
(x)	user information on how to enable the power management functionality: <i>refer to user manual</i>	
(z)	test parameters for measurements: — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing: <i>230V, 50GHz-<0.5%-ENERGY STAR Test Method for Computers, Rev. Aug-2010</i>	

Addition Notebook Battery Information:			
Yes (Battery not user replaceable)	No (Battery user replaceable)	n/a	This notebook computer is operated by battery/ies that can be accessed and replaced by a non-professional user. The battery[ies] in this product can be easily replaced by users themselves
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional information