

ECMA/TC38-TG3/2015/026 (Rev. 1 – 15 April 2015)

### Annex B2 - Product environmental attributes Notebooks and Tablets

The declaration may be published only when all rows and/or fields marked with \* are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	Lenovo	Log	0			
Company name *	Lenovo					
Contact information *	Lenovo Global Environmental Affairs Alvin L Carter					
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Internet site *	http://www.lenovo.com/social_responsibility/us/en/environment	.html				
Additional information	The latest version of this document can be found at:					
	http://www.lenovo.com/ecodeclaration					

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 *	Notebook					
Commercial name *	Lenovo 500e Chromebook					
Model number *	81ES					
Issue date *	2018-1-31					
Intended market *	🔀 Global 📃 Europe 📃 Asia, Pacific & Japan 📃 Americas 📃 Other					
Additional information						

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

#### About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template: P4.1 – P4.3 Consumable materials

P9.1 TEC and Print speed

P10.2 - P10.3 Chemical emissions from printing products

P11.1 - P11.3 Consumable materials for printing products.

Model nu	mber *	81ES	Logo			
Issue dat	e *	2018-1-31		Lena		Отн
Product	environ	mental attributes - Legal requirements		Require	ment	met
Item				Yes	No	n.a.
P1	Hazardo	ous substances and preparations				
P1.1*	Products	s do comply with current European RoHS Directive. (See legal reference and NOTE I	B1)	$\square$		
P1.2*		s do not contain Asbestos (see legal reference). nt: Legal reference has no maximum concentration value.		$\square$		
P1.3*	hydrobro trichloro	s do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), omofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachlo ethane, methyl bromide (see legal reference). Comment: Legal reference has no ma ration values.	, , ,			
P1.4*		s do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlo /I (PCT) in preparations (see legal reference).	orinated	$\square$		
P1.5*	Products	s do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbo ntaining at least 48% per mass of chlorine in the SCCP (see legal reference).	on atoms in the			
P1.6*	(see leg	th direct and prolonged skin contact do not release nickel in concentrations above 0, al reference). nt: Max limit in legal reference when tested according to EN1811:2011-5.	5 μg/cm²/week	$\square$		
P1.7*		Article 33 information about substances in articles is available at (add URL or mail co ww.lenovo.com/social_responsibility/us/en/environment.html	ontact):	$\boxtimes$		
P2	Batterie	S				
P2.1*		oduct contains a battery or an accumulator, the battery/accumulator is labeled with th Information on proper disposal is provided in user manual. (See legal reference)	e disposal	$\boxtimes$		
P2.2*	Batteries referenc	s or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmire)	um. (See legal	$\boxtimes$		
P2.3*	Batteries	s and accumulators are readily removable. (See legal reference)		$\square$		
P3	Conform	nity verification & Eco design (ErP)				
P3.1*	The Dec	duct is CE-marked to show conformance with applicable legal requirements (see lega claration of Conformity can be requested at (add link or e-mail address): www.lenovo.com/social responsibility/us/en/ec_doc_notebooks/	al reference).	$\boxtimes$		
P3.2*		duct complies with the Eco design requirements for energy-related products,				
		al reference).				
	Require	d information is; given in item P15 or added to this document, available at (add URL):		$\boxtimes$		
	http://v	www.lenovo.com/social_responsibility/us/en/datasheets_notebooks/				
P5		t packaging				
P5.1*	Packagi	ng and packaging components do not contain more than 0,01% lead, mercury, ent chromium by weight of these together.	cadmium and	1		
P5.2*	The pac	kaging materials are marked with abbreviations and numbers indicating the nature of ee legal reference).	f the material(s)	)		
P5.3*	The pro Protocol	duct packaging material is free from ozone depleting substances as specified i (see legal reference). nt: Legal reference has no maximum concentration values.	n the Montrea	I 🔀		
P6		nt information				
P6.1*	Informat	ion for recyclers/treatment facilities is available (see legal reference).		$\square$		

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Model number *		81ES	Logo				
Issue dat	te *	2018-1-31		Len	ovc	ТМ	
Product		mental attributes - Market requirements (See General NOTE GN	· ·				
		onmental conscious design		Require		met	
Item		tory to fill in. Additional information regarding each item may be found under P14.		Yes	No	n.a.	
<b>P7</b> P7.1*		Disassembly, recycling It have to be treated separately are easily separable					
P7.2*		naterials in covers/housing have no surface coating.					
P7.3*		arts > 100 g consist of one material or of easily separable materials.			<u> </u>	<u> </u>	
P7.4*	Plastic parts > 100 g consist of one material of of easily separable materials. Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.						
P7.5		arts are free from metal inlays or have inlays that can be removed with commonly a			<u> </u>	<u> </u>	
					<u> </u>	<u> </u>	
P7.6*		re easily separable. (This requirement does not apply to safety/regulatory labels).					
P7.7*	Product	g can be done e.g. with processor, memory, cards or drives					
P7.8*		ig can be done using commonly available tools			<u> </u>	<u> </u>	
P7.9		arts are available after end of production for: 5 years				<u> </u>	
						<u> </u>	
P7.10		s available after end of production for: 5 years					
P7.11*		and substance requirements cover/housing material type (e.g. plastics, metal, aluminum):					
1 7.11		type: PC/ABS Material type: Material type: Material type:	al type:				
P7.12		n materials of external electrical cables are PVC free.	, ypoi		$\square$		
P7.13	Insulation	n materials of internal electrical cables are PVC free.					
P7.14	External	plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) b	romine and 0,1%	,			
		1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame					
		chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm)	chlorine in part	S			
P7.15		Ig more than 25% post-consumer recycled content. circuit boards, PCBs (without components) are low halogen: all	25 g are lov		$\square$		
		as defined in IEC 61249-2-21. (See 1NOTE B2)		v 🛄			
P7.16		tarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4:		$\square$			
		>PC+ABS-TD15FR(40)<					
P7.17		nemical specifications of flame retardants in printed circuit boards > 25 g (without c		$\boxtimes$			
	26265-0	A (additive), TBBPA (reactive) (See NOTE B3), Other: <b>Brominated epoxy</b>	resin. CAS #:				
		nemical specifications of flame retardants in printed circuit boards (without compone g ISO 1043-4: <i>FR(16)</i>	ents) > 25 g	$\bowtie$			
P7.18		ame retarded plastic parts > 25 g contain the following flame retardant substance	s/preparations in	า			
		ations above 0,1%:		$\boxtimes$			
		ical name: <b>BPADP</b> , CAS #: <b>181028-79-5</b> (See NOTE B4)					
		ical name: , CAS #: " ical name: , CAS #: "					
			2.4.				
P7.19		nemical specifications of flame retardants in plastic parts > 25 g according ISO 104 parts > 25 g, flame retardant substances/preparations above 0,1% are used which				<u> </u>	
F7.19	•	I the following Risk phrases; and Hazard statements:	I have been		M		
	-		See note B5)				
P7.20*		sumer recycled plastic material content is used in the product (See Note B6):					
		t least one of the two alternatives below shall be answered;	t (appulated at				
	,	otal plastic parts' weight > 25 g, the postconsumer recycled plastic material conten ercentage of total plastic by weight) is %.	it (calculated as				
	or						
	b) The	weight of recycled material is g.					

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see <a href="http://www.ecma-international.org/publications/standards/Ecma-370.htm">http://www.ecma-international.org/publications/standards/Ecma-370.htm</a>

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

Model nu	mber *	81ES				Logo		
Issue dat	e *	2018-1-3	1				Lenovo	тм
Product	environ	nental at	tributes - Market r	equirements (conti	nued)		Requirement	t met
Item				•	/		Yes No	n.a.
	Materia	and subs	stance requirements	(continued)				
P7.21*	Biobase	d plastic m	aterial content is use	d in the product (See NO	DTE B7):			
	If YES: a	at least one	e of the two alternative	es below shall be answe	ered:			
				g, the biobased plastic i	material content (calcu	lated as a percen	tage	
		otal plastic	by weight) is %	6.				
	or b) The	e weight of	the biobased plastic	material is g.				
P7.22*				less than 0,1 mg/lamp.				
	If mercu	ry is used	specify: Number of la	mps: and maxim	um mercury content pe	r lamp: mg		
P8	Batterie							
P8.1*	Battery of	chemical c	omposition: <i>Lithium i</i>	on				
P9			tion (See NOTE B8)					
P9.1		product the	e following power leve Power level at	ls or energy consumption Power level at	ons are reported: Power level at	Poforonaa/Star	dard for oppravi	
Energy mo	JUE		100 V AC	115 V AC	230 V AC	modes and test	dard for energy method *	
Peak (On-	-max)		45 W	45 W	45 W	Full load		
Catana								
<u>Catego</u>	<u>y 11-</u>							
Short Idle	State - W	/OL	4.11 W	4.18 W	3.95 W	Use for ENERG		
Enabled						registration (P <sub>id</sub>	die)	
Long Idle	State - W	OL	1.77 W	1.82 W	1.89 W	Use for ENERG	Y STAR V6	
Enabled						registration (Pid	die)	
Sleep (S3	) - WOL D	isabled	1.12 W	1.12 W	1.12 W	Reference		
			1.1 W	1.1 W	1.1 W	Use for ErP		
Off (S5) -		ibieu		1.1 VV		USE IOF EIP		
EPS No-lo			0.02 W	0.02 W	0.07 W			
(External power wall outlet but di	supply / charger sconnected from	r plugged in the the product.)						
PTEC *	0		36.92 W	36.92 W	36.92 W			$\boxtimes$
Typical En ETEC *	lergy Cons	sumption	<b>18.4</b> kWh/year	18.64 kWh/year	18.18 kWh/year	$E_{TEO} = (8760/10)$	00) x (P <sub>off</sub> x 0.25	$\square$
Annual En	ergy Cons	umption	10.4 KWIII/yeai	10.04 KWII/yCal	10. TO KWIII/year		$P_{long \ ldle} \times 0.10+$	
	0,					Pshort_Idle x 0.30)	-	
		. =		OL Enabled; Psleep: Sleep		d; Pidle: Idle State -	WOL Enabled	
		· ·		I Efficiency Marking Pro	otocol) ^ :			<u> </u>
			megapixels					<u> </u>
			ve mode: 30 minutes					<u> </u>
P9.2*				ion is provided with the	product.			Ц.
P9.3			class (monitors only):					$\bowtie$
P10	Emissio		Declared coording t		P0)			
P10.1	Mode		Iode description	o ISO 9296 (See NOTE	Statistical upper limi	t A-weighted sour	d power level 1 mail	(B)
	Idle		System Idle		* 16.3			
	Operatio		CPU;Operation		* 16.3			$\exists$
	Other m			nd pressure level (dB) $L_{p Am}$		sition desktop – idle	e)	
	Other m	ode 👖	eclared A-weighted sour	ad pressure level (dB) $L_{pAm}$	(operator po	sition desktop – op		
				-		sition desktop – op	cratility)	
	Measure	ed accordir	ng to: 🔀 ISO 7779 🗌	ECMA-74				
	1		Other	(only if not covered by	ECMA-74)			

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B9 A Guidance document on Acoustic Noise is available; see <u>http://www.ecma-international.org/publications/standards/Ecma-370.htm</u>

Model nu	mber *	81ES Logo	Long		
lssue dat	e *	2018-1-31	Lenc	Lenovo	
Product	environ	mental attributes - Market requirements (continued)	Require	ment	me
ltem			Yes	No	n.a
		magnetic emissions			
P10.4	Compute program	er display meets the requirement for low frequency electromagnetic fields of the following voluntar n(s):	у		$\mathbf{X}$
P12		mics for computing products			
P12.1*	The disp	play meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	$\mathbf{X}$		
P12.2*	The phy	vsical input device meets the requirements of ISO 9995 and ISO 9241-410.	$\boxtimes$		
P13	Packagi	ing and documentation			
P13.1*	Product	packaging material type(s): cartonweight (kg): 0.296packaging material type(s): paperweight (kg): 0.00755packaging material type(s): EPEweight (kg): 0.05607			
P13.2*		plastic primary packaging is free from PVC.	$\square$		
P13.3*	consum	duct primary corrugated fiberboard packaging, specify the contained percentage of minimum per recovered fiber content: 90%	post-		
P13.4*		media for user and product documentation (tick box): tronic, 🔀 Paper, 🔲 Other			
P13.5	Úser an	only complete this item if paper documentation used) d product documentation on paper media is chlorine-free: olease specify:			
	Totally o	chlorine-free	$\boxtimes$		
	-	tal chlorine-free			
	Process	sed chlorine-free	H		
P14		ary programs			
P14.1		duct meets the requirements of the following voluntary program(s):			
	Eco-labe	· · · · · · · · · · · · · · · · · · ·			
	Eco-labe				
P15		nal information (See NOTE B10)			
P9		consumption of specific configuration may vary; description of the tested product configu			
	informat knowled provideo informat		ased on supplation. The in	olier's format	ion
P9		ergy Star Qualified Notebooks & Tablet Computers for the latest information: ww.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CO			

NOTE B10 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 B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation (EC) No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

# 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	Error! Reference source not found.	Logo
Model Number	81ES	
Issue Date	2018-1-31	Lenovo
Additional information		

P7.1.1	Product environmental attributes								
(d)	Year of manufacture:				2018				
(e)	<b>Etec value</b> (kWh) per ErP Lot 3 Category and capability adjustments applied when <b>all discrete graphics cards (dGfx) are disabled</b> and if the system is tested with switchable graphics mode with UMA driving the display.								
(f)	Etec value (kWh) per ErP Lot 3 Category and capability adjustments applied when all discrete graphics cards (dGfx) are enable								
	Category A (according to ErP Lot 3)Category B (according to ErP Lot 3)Category C (according to ErP Lot 3)Category D (according to ErP Lot 3)								
	Memory over base [GB]	4GB							
nents sting	Additional internal storage	NO (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)				
capability adjustments applied during testing	Discrete television tuner	NO (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)				
ability a	Discrete Audio Card	NO (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)				
cap	Discrete graphics Card(s) [number / #]	NO #: (Yes / No)	#: (Yes / No)	#: (Yes / No)	#: (Yes / No)				
	Category of discrete graphics Card(s)								
sults	Etec Value (kWh) - dGfx disabled all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)	18.6							
Test results	Etec Value (kWh) - dGfx enabled all discrete graphics cards (dGfx) are enabled								
(g)	Idle state power demand (Watts);	-			4.18				
(h)	Sleep mode power demand (Watts);				1.12				
(i)	Sleep mode with WOL enabled power do	emand (Watts) (where	enabled);						
(j)	Off mode power demand (Watts);				1.12				
(k)	Off mode with WOL enabled power dem	and (Watts) (where en	abled);						
(I)	Internal power supply efficiency at 10 %	20 %, 50 % and 100 s	% of rated output powe	er (if applicable):					
	10% 20% 50%	100% Avera	ige						
(m)	External power supply efficiency (if appli	cable)*:							
	Average active efficiency: 89.23%, 87.	25%, 89.44%, 81.44	%						
	*internal note: show values for all available external p								
(o)	Minimum number of loading cycles that t	ne batteries can withs	and (applies only to n	otebook computers):	300				
(p-1)	p-1) Measurement methodology used to determine information mentioned in points (I) – internal PSU efficiency: N/A								

	Measurement methodology used to determine information mentioned in points (m) – external PSU efficiency: ENERGY STAR® Program Requirements for Single Voltage External Ac-Dc and Ac-Ac Power Supplies Eligibility Criteria (Version 2.0)						
(p-3) Measuremer	t methodology used to determine information mentioned in <i>≥</i> 70% of Cmin	points (o) – loading cycles batteries:					
	t methodology used to determine information mentioned in r ined in Point P9.1 in the Product IT Eco Declaration: IEC 62623	naximum, idle, sleep, off mode					
(q) Sequence of	Sequence of steps for achieving a stable condition with respect to power demand:: Power on -> Wait 5 minutes ->Stable condition						
(r) Description of	Description of how sleep and/or off mode was selected or programmed: Begin menu -> Power -> Select sleep or off mode						
(s) Sequence of off mode:	events required to reach the mode where the equipment au	tomatically changes to sleep and/or					
	NA						
	idle state condition before the computer automatically r ch does not exceed the applicable power demand requirem		30min				
(u) Length of til mode that h	ne after a period of user inactivity in which the compute as a lower power demand requirement than sleep mode (ir	er automatically reaches a power n minutes):	NA				
	ne before the display sleep mode is set to activate after on the energy-saving potential of power management functio <i>Refer to User Guide</i>		10min				
(x) User informa	tion on how to enable the power management functionality: <i>Refer to User Guide</i>						
	ters for measurements: — test voltage in V and frequency ir v supply system, — information and documentation on the in trical testing: 230V50HZ-2%-Edition 2.0, 2011-01, Section 4	strumentation, set-up and circuits					
Additional Notebook	Battery Information:						
	Battery[ies] not user replaceable	Battery[ies] user replaceable	n/a				
	The battery[ies] in this product cannot be easily replaced by users themselves. $^{\rm 1)}$						
Internal/built-in Batter							
External/detachable B	attery						
Bios Backup Battery							
Other:							
Additional information							
1)							
The battery[ies] in this product of Akywynarophara[vre] δатерия] Las baterias de este producto n Výměnu baterie/baterií v tomto Brugeren kan ikke uden videre Der Akku/die Akkus dieses Proc Kasutajad ei saa selle toote aku Hµπαταρία[-sc] στο προϊόν αυτ La/les batterie(s présente(s) da Korisnik ne može lako zamijenit La batteria/le batterie in questo Lietotāji paši nevar nomainīt šā Šio gaminio baterijos [bateriju] ŗ A termék akkumulátorát/akkum II-batterija/batteriji f'dan iI-prodo Batteriat [ene] i dette produktet De batterij(en) in dit product is ( Użytkownik nie može sam v łat A ou as baterias deste produ Bateria (bateriile) din acest proc Bateria (bateriile) din scest proc	ats vartotojas negali lengvai pakeisti. Jlátorait a felhasználó nem tudja egyedül egyszerűen kicserélni. it ma tistax/jistgħux tiġi/jiġu sostitwita/i mill-utenti stess. kan ikke lett erstattes av brukerne selv. zijn) door de gebruiker niet gemakkelijk vervangbaar. wy sposób wymienić baterii w tym produkcie. não podem ser facilmente substituídas pelos próprios utilizadores. lus nu poate (pot) fi uşor înlocuită (înlocuite) de utilizatorii înșiși.	werden.					
Tämän tuotteen akku [akut] ei[v	ät] ole helposti käyttäjän vaihdettavissa. siäly byta ut batteriet/batterierna						