



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

## Annex B2 - Product environmental attributes Computers and computer monitors

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	Logo
Company name *	Lenovo	
Contact information *	Lenovo Global Environmental Affairs	
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	Morrisville, North Carolina 27560	
	alcarter@lenovo.com	
Internet site *	www.lenovo.com	
Additional information		

	based on product specification or test results based obtained from sample testing), that the product
conforms to the statemen	nts given in this declaration.
Type of product *	NB
Commercial name *	Lenovo V320-15
Model number *	81MK
Issue date *	2018/9/1
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 *	81MK Logo	Loro		
Issue date	e *	2018/9/1	Lend	DVC	) <sub>TM</sub>
Product	environ	mental attributes - Legal requirements	Require	menf	met
Item			Yes	No	n.a.
P1		ous substances and preparations			
P1.1*	Products	s do comply with current European RoHS Directive. (See legal reference and <sup>NO</sup> TE B <sup>1</sup> )			
P1.2*		s do not contain Asbestos (see legal reference). nt: Legal reference has no maximum concentration value.			
P1.3*	hydrobro trichloroe	do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), omofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-ethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum ation values.			
P1.4*	terpheny	do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated (PCT) in preparations (see legal reference).	$\boxtimes$		
P1.5*		s do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the ntaining at least 48% per mass of chlorine in the SCCP (see legal reference).			
P1.6*	(see lega	h direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week al reference). nt: Max limit in legal reference when tested according to EN1811:2011-5.			
P1.7*		Article 33 information about substances in articles is available at (add URL or mail contact):			
P2	Batterie				
P2.1*	symbol.	duct contains a battery or an accumulator, the battery/accumulator is labeled with the disposal Information on proper disposal is provided in user manual. (See legal reference)			
P2.2*	reference				
P2.3*		and accumulators are readily removable. (See legal reference)			
P3		nity verification & Eco design (ErP)			
P3.1*	The Dec	duct is CE-marked to show conformance with applicable legal requirements (see legal reference). laration of Conformity can be requested at (add link or e-mail address):  ww.lenovo.com/social_responsibility/us/en/ec_doc_notebooks/			
P3.2*	The prod	luct complies with the Eco design requirements for energy-related products, al reference).	$\boxtimes$		
	Required	d information is;  given in item P15 or added to this document,  available at (add URL):  ww.lenovo.com/social_responsibility/us/en/datasheets_notebooks/			
P5		packaging			
P5.1*	Packagir	ng and packaging components do not contain more than 0,01% lead, mercury, cadmium and the chromium by weight of these together.	d 🔀		
P5.2*		caging materials are marked with abbreviations and numbers indicating the nature of the material(s	s) 🔀		

used (see legal reference).

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.

Treatment information

Information for recyclers/treatment facilities is available (see legal reference).

P5.3\*

P6

P6.1\*

Model number *	81MK	Logo	Lanava
Issue date *	2018/9/1		Lei IOVO,

Produc	t environmental attributes - Market requirements (See General NOTE GN below)			
		Require	ment	met
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	Design Disassembly, recycling			
P7.1*	Parts that have to be treated separately are easily separable			
P7.2*	Plastic materials in covers/housing have no surface coating.		Ħ	Ħ
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.		H	∺
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.		Ħ	H
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.			
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).			
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	$\square$	П	П
P7.8*	Upgrading can be done using commonly available tools		Ħ	Ħ
P7.9	Spare parts are available after end of production for: 5 years			Ħ
P7.10	Service is available after end of production for: 5 years			Ħ
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum):			
	Material type: plastics Material type: plastics Material type: plastics			
P7.12	Insulation materials of external electrical cables are PVC free.	$\boxtimes$		
P7.13	Insulation materials of internal electrical cables are PVC free.	$\boxtimes$		
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1%			
	weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and			
	polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	ļ		
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all PCBs > 25 g are low halogen	,	$\square$	
	as defined in IEC 61249-2-21. (See 1NOTE B2)			
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4:	$\boxtimes$		
P7.17	Marking: >PC+ABS-FR(40)< Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components):			
F 7.17	TBBPA (additive), TBBPA (reactive) (See NOTE B3), Other: <b>Brominated epoxy resin</b> , CAS #:	$\boxtimes$		
	26265-08-7			ш
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g			
	according ISO 1043-4: FR(16)	ш	ш	ш
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in	i		
	concentrations above 0,1%:	$\boxtimes$		
	1. Chemical name: confidential, CAS #: confidential (See NOTE B4)			
	2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "			
		$\square$		
D7 10	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: FR(40)  In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been		<u> </u>	<u> </u>
P7.19	assigned the following Risk phrases; and Hazard statements:			Ш
	The source(s) for these classifications is/are found at (add URL(s)):  (See note B5)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6):		$\boxtimes$	П
1				ш
	If YES; at least one of the two alternatives below shall be answered;			
	<ul> <li>a) Of total plastic parts' weight &gt; 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is 0%.</li> </ul>			
	or			
	b) The weight of recycled material is <b>0</b> 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 number *	81MK	Logo	Lanava
Issue date *	2018/9/1		Lei Iovo.

Product environmental attributes - Market requirements (continued)	Requi	remer	nt met
ltem	Yes	Nο	n.a.

P7.21* Biobased plastic material content is used in the product (See NOTE B7):  If YES; at least one of the two alternatives below shall be answered;  a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is  or  b) The weight of the biobased plastic material is  g.
<ul> <li>a) Of total plastic parts' weight &gt; 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is</li> <li>%.</li> <li>or</li> </ul>
total plastic by weight) is %.
or
P7.22* Light sources are free from mercury, i.e. less than 0,1 mg/lamp.
If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg
P8 Batteries
P8.1* Battery chemical composition: <i>Li-ion Polymer, lithium manganese</i>
P9 Energy consumption (See NOTE B8)
P9.1 For the product the following power levels or energy consumptions are reported:
Energy mode * Power level at 100 V AC Power level at 15 V AC Power level at 230 V AC Reference/Standard for energy modes and test method *
Peak (On-max) 65 W 65 W Full load
Category NB1
Short Idle State - WOL 4.01 W 4.33 W 3.85 W Reference Enabled
Long Idle State - WOL 2.12 W 1.76 W Reference
Litabled
Sleep (S3) - WOL Enabled 0.41 W 0.42 W 0.50 W Reference
Sleep (S3) - WOL Disabled         0.41 W         0.42 W         0.50 W         Reference
Off (S5) - WOL Enabled 0.22 W 0.23 W 0.30 W Reference
Off (S5) - WOL Disabled 0.22 W 0.23 W 0.30 W Reference
EPS No-load 0.051 W 0.054 W 0.111 W
(External power supply / charger plugged in the wall outlet but disconnected from the product.)
PTEC * W W W
Typical Energy Consumption
ETEC * 14.09 kWh/year 14.66 kWh/year 13.74 kWh/year 13.74 kWh/year
External Power Supply Efficiency Level (International Efficiency Marking Protocol) *: V
Display resolution *: 1920*1080 megapixels
Default time to enter energy save mode: minutes
P9.2* Information about the energy save function is provided with the product.
37 7 ( 27
P10 Emissions  Naise emission Declared according to ISO 0206 (See NOTE P0)
Noise emission - Declared according to ISO 9296 (See NOTE B9)   P10.1   Mode   Mode description   Statistical upper limit A-weighted sound power level, L <sub>WA,c</sub> (B)
Idle * Idle * 2.6
Operation * CPU Operating * 4.2
Other mode
Measured according to: SISO 7779 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 <a href="http://www.ecma-international.org/publications/standards/Ecma-370.htm">http://www.ecma-international.org/publications/standards/Ecma-370.htm</a>

NOTE B9 A Guidance document on Acoustic Noise 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>

Model nur	nber *	81MK						Logo	1.	<b>300</b>	\ <u>\</u>	
Issue date	*	2018/9/1							L	eno	VO.	м
Product	environr	nental attributes	- Market requiremen	its (cont	tinuec	d)			Re	quire	ment	met
Item										Yes	No	n.a.
		nagnetic emission										
P10.4	Compute		requirement for low freq	uency ele	ectroma	agnetic fie	lds of the foll	lowing volunt	ary			$\boxtimes$
P12		າics for computing	n products									
P12.1*			nomic requirements of IS	0 9241-3	07 for 1	visual disi	olav technolo	gies				
P12.2*			eets the requirements of					9.00.		$\blacksquare$		
P13		ng and documenta	•			00 02						
P13.1*		packaging material		weight	(kg):	0.323						
	Product	packaging material	type(s): EPE Cushion	weight		0.05						
		packaging material	<b>3</b> · · · /	weight	(kg):	0.017						
P13.2*		' ' '	aging is free from PVC.									
P13.3*		luct primary corrug	ated fiberboard packagii	ng, speci	fy the	contained	d percentage	of minimum	post-			
P13.4*			product documentation (t	ick box).								
1 10.1		ronic,   Paper,		ion box).								
P13.5			em if paper documentati									
			ation on paper media is o	chlorine-fr	ee:						Ш	
	•	lease specify:								_		
	•	hlorine-free								Ш		
		al chlorine-free								Ш		
		ed chlorine-free										
P14		ry programs										
P14.1	The proc	luct meets the requi	rements of the following	voluntary	progra	am(s):						
	ENERG'	Y STAR®	Criteria version: ES 7.0	)	Date:	2018/9/27	Product	category: NB	11			
	Eco-labe		Criteria version:		Date:			category:				
D45	Eco-labe		Criteria version:		Date:		Product	category:				
P15		nal information (Se										
P9	Energy	consumption of sp	ecific configuration ma	ay vary; c	tescrip	otion of ti	ne tested pro	oduct config	uration	:		

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	Lenovo V320-15	Logo	
Model Number	81MK		Lonovo
Issue Date	2018/9/1		Lenovo.
Additional information			

d)	year of manufacture:				2018
е)	Etec value (kWh) per ErP Lot 3 Catego disabled and if the system is tested with				cards (dGfx) are
·)	Etec value (kWh) per ErP Lot 3 Categor enable	ry and capability adjust	ments applied when a	III discrete graphics o	cards (dGfx) are
		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]	12		12	
ents ting	Additional internal storage	YES (Yes / No)	(Yes / No)	YES (Yes / No)	(Yes / No)
capability adjustments applied during testing	Discrete television tuner	NO (Yes / No)	(Yes / No)	NO (Yes / No)	(Yes / No)
ability a	Discrete Audio Card	NO (Yes / No)	(Yes / No)	NO (Yes / No)	(Yes / No)
cap	Discrete graphics Card(s) [number / #]	NO #: (Yes / No)	#: (Yes / No)	YES #: 1 (Yes / No)	#: (Yes / No)
	Category of discrete graphics Card(s)			G3	
saults	Etec Value (kWh) - dGfx disabled all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)				
Test results	Etec Value (kWh) - dGfx enabled all discrete graphics cards (dGfx) are enabled	11.37		14.83	
3)	Idle state power demand (Watts);				A: 3.54; C: 4.61
1)	Sleep mode power demand (Watts);				A: 0.50; C: 0.48
)	Sleep mode with WOL enabled power de	emand (Watts) (where	enabled);		A: 0.51; C: 0.52
)	Off mode power demand (Watts);				A: 0.31; C: 0.47
()	Off mode with WOL enabled power dem	and (Watts) (where en	abled);		A: 0.31; C: 0.43
)	Internal power supply efficiency at 10 %	, 20 %, 50 % and 100 °	% of rated output pow	er (if applicable):	
	10% 20% 50%	100% Avera	ige		
n)	external power supply efficiency (if appli	cable)*:			
	Average active efficiency: 88.45%,88.64  COMPAL meet Level V  internal note: show values for all available external p		.03%,88.93%		
0)	Minimum number of loading cycles that		tand (applies only to n	otebook computers):	300
p-1)	Measurement methodology used to dete	ermine information mer	ntioned in points (I) - in	nternal PSU efficiency:	

(p-2) 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)					
		Eligibility Criteria (Version 2.0)			
(p-3)	Measurement methodology used to determine information mentioned in points (o) – loading cycles batteries: ≥70% of Cmin				
(p-4)	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:  IEC 62623				
(q)	Sequence of steps for achieving a stable condition with respect to power demand:  *Power on -> Wait 5 minutes -> Stable condition*				
(r)	(r) Description of how sleep and/or off mode was selected or programmed:  **Begin menu -> Power -> Select sleep or off mode**				
(s)	Sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode:				
		NA NA			
(t)	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):			30min	
(u)	mode that has a lower power demand requirement than sleep mode (in minutes):			NA	
(v)	Length of time before the display sleep mode is set to activate after user inactivity (in minutes): 10min				
(w)	(w) Information on the energy-saving potential of power management functionality:  **Refer to User Guide**				
(x)	(x) User information on how to enable the power management functionality:  **Refer to User Guide**				
(z)	(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:				
230V50HZ-2%-Edition 2.0, 2011-01, Section 4, IEC62301					
Addition Notebook Battery Information:					
rtaartio	ii Notobook Battery	Battery[ies] <b>not</b> user replaceable	Battery[ies] user replaceable	n/a	
		The battery[ies] in this product cannot be easily replaced by users themselves. 1)	, , , , , , , , , , , , , , , , , , ,		
Internal/built-in Battery					
External/detachable Battery					
Bios Backup Battery		$\boxtimes$			
Other:					
Addition	al information				

Акумулаторната[ите] батерия[и] в този продукт не може да се замени[ят] лесно от самите потребители. Las baterías de este producto no pueden ser sustituidas fácilmente por los propios usuarios.

Výměnu baterie/baterií v tomto výrobku by neměli provádět sami uživatelé.

Brugeren kan ikke uden videre udskifte batteriet/batterierne i dette produkt.
Der Akku/die Akkus dieses Produkts kann/können nicht ohne weiteres vom Benutzer selbst ausgetauscht werden.

Kasutajad ei saa selle toote akut/akusid ise hõlpsasti asendada.

Η μπαταρία[-ες] στο προϊόν αυτό δεν μπορούν να αντικατασταθούν εύκολα από τους ίδιους τους χρήστες La/les batterie(s présente(s) dans ce produit ne peuvent être facilement remplacée(s) par les utilisateurs eux-mêmes.

Korisnik ne može lako zamijeniti Bateriju sam u ovom proizvodu.

La batteria/le batterie in questo prodotto non può/possono essere facilmente sostituita/e dall'utente. Lietotāji paši nevar nomainīt šā ražojuma akumulatoru(-us).

Šio gaminio baterijos [baterijų] pats vartotojas negali lengvai pakeisti.

A termék akkumulátorát/akkumulátorait a felhasználó nem tudja egyedül egyszerűen kicserélni. Il-batterija/batteriji f'dan il-prodott ma tistax/jistgħux tigi/jigu sostitwita/i mill-utenti stess. Batteriet [ene] i dette produktet kan ikke lett erstattes av brukerne selv.

De batterij(en) in dit product is (zijn) door de gebruiker niet gemakkelijk vervangbaar. Użytkownik nie może sam w łatwy sposób wymienić baterii w tym produkcie.

A ou as baterias deste produto não podem ser facilmente substituídas pelos próprios utilizadores.

Bateria (bateriile) din acest produs nu poate (pot) fi ușor înlocuită (înlocuite) de utilizatorii înșiși. Batériu(-ie) v tomto výrobku nemôže vymieňať používateľ.

Baterij/baterije v tem izdelku uporabniki sami ne morejo zlahka zamenjati.

Tämän tuottéen akku [akut] ei[vät] ole helposti käyttäjän vaihdettavissá. Det är inte enkelt för kunden att själv byta ut batteriet/batterierna.

Bu üründeki batarya(lar) kullanıcılar tarafından kolaylıkla değiştirilemez.

The battery[ies] in this product cannot be easily replaced by users themselves.