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 * e-mail address	***Lenovo Global Environmental Affairs*** ***Alvin L Carter*** ***alcarter@lenovo.com***	
Internet site *	***https://www.lenovo.com/us/en/sustainability-resources/***	
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 Computer***
Commercial name *	***ThinkPad X1 Yoga Gen 8***
Model number *	***21HQ,21HR***
Issue date *	***2023-03-06***
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 number *	***21HQ,21HR***	**Logo**	Lenovo
Issue date *	***2023-03-06***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
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).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 $\mu g/cm^2$/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): ***https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure***	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☒	☐	☐
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (see legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): ***https://www.lenovo.com/us/en/compliance/eu-doc for EU ;*** ***https://www.lenovo.com/us/en/compliance/uk-doc for UK***	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☒ given in item P15 or added to this document, ☒ available at (add URL): ***http://www.lenovo.com/ecodeclaration***	☒	☐	☐
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.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
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.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (***https://lenovo.com/recycling***).	☒	☐	☐

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 *	***21HQ,21HR***	**Logo**	Lenovo
Issue date *	***2023-03-06***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement 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.	☐	☒	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☐	☐	☒
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☐	☐	☒
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	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: **5** years			☐
P7.10	Service is available after end of production for: **5** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***AL*** Material type: ***Glass*** Material type: ***PC/ABS***			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation 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) 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.	☐	☐	☒
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☐ PCBs > 25 g ☒ are low halogen as defined in IEC 61249-2-21.	☒	☐	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according to ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☐ (See NOTE B3), Other; chemical name: ***Bisphenol A diphosphate***, CAS #: ***181028-79-5*** Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:	☒ ☐	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐ ☐	☐ ☐	☒ ☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See NOTE B5)	☐	☐	☒

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.

Model number *	21HQ,21HR	Logo	Lenovo
Issue date *	2023-03-06		

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
	Material and substance requirements (continued)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***25.64*%**. or b) The weight of recycled material is ***40.8*** g.	☒	☐	☐
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.	☐	☒	☐
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	☒	☐	☐
P7.23*	If product includes an integral display, the total mercury content in the integrated display: ***0.0*** mg	☐	☒	☐
P8	**Batteries**			
P8.1*	Battery chemical composition: ***Lithium ion***			☐
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 **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
Peak (On-Max)	***65*** W	***65*** W	***65*** W	***Full Load***	
Device Category 2					
Short Idle State – WOL Enabled (P_{short_idle})	***7.15*** W	***7.10*** W	***7.85*** W	***ENERGY STAR Computers V8.0***	
Long Idle State – WOL Enabled (P_{long_idle})	***2.68*** W	***2.78*** W	***2.64*** W	***ENERGY STAR Computers V8.0***	
Sleep (S3) – WOL Disabled (P_{Sleep})	***2.68*** W	***2.78*** W	***2.64*** W	***ENERGY STAR Computers V8.0***	
Off Mode (S5) – WOL Disabled (P_{off})	***0.43*** W	***0.44*** W	***0.49*** W	***ENERGY STAR Computers V8.0***	
PTEC * Typical Energy Consumption	W	W	W		☒
ETEC * Annual Energy Consumption	***28.34*** kWh/year	***28.69*** kWh/year	***29.84*** kWh/year	***E_{TEC} = (8760/1000) x (P_{off} x 0.45 + P_{sleep} x 0.05 + P_{long_Idle} x 0.15+ P_{short_Idle} x 0.35)***	☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * : ***VI***				**International Efficiency Marking Protocol *(IEMP) for* External Power Supplies**	☐
Display resolution * : ***9.216*** megapixels				***3840*2400***	☐
Default time to enter energy save mode: ***5*** minutes				***ENERGY STAR Computers V8.0***	☐
P9.2*	Information about the energy save function is provided with the product.			☒ ☐	☐
P9.3	Energy efficiency class (monitors only):				☒

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.

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.

Model number *	***21HM,21HN***	**Logo**	Lenovo
Issue date *	***2023-03-06***		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	n.a.
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	* ***Idle Mode***	* ***2.6***			☐
	Operation	* ***Operating (CPU)***	* ***3.5***			☐
	Other Mode	***Declared A-weighted sound pressure level (dB)***	***NA (operator position desktop – idle)***			
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***NA (operator position desktop – operating-HDD/SSD)*** ***NA (operator position desktop – operating-CPU)***			
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s): ***MPR-II(3 pin AC adapter only)***			☒	☐	☐
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.			☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***Cardboard*** weight (kg): ***0.303*** Product packaging material type(s): ***Cardboard*** weight (kg): ***0.063*** Product packaging material type(s): ***Paper*** weight (kg): ***0.130*** Product packaging material type(s): ***Paper*** weight (kg): ***0.012*** Product packaging material type(s): ***Paper*** weight (kg): ***0.012***					
P13.2*	Product plastic primary packaging is free from PVC.			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***80*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☒, Paper ☒, Other ☐					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☒ ☒ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Eco-label: ***EPEAT*** Eco-label: ***TCO***	Criteria version: ***V8*** Criteria version: ***IEEE 1680.1-2018*** Criteria version: ***9.0***	Date: ***2022/12/27*** Product category: ***2*** Date: ***2023/03/10*** Product category: ***Notebook*** Date: ***2023/02/03*** Product category: ***Notebook***			
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration:***					

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

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, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), 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 2006/66/EC (Battery and accumulators Directive), as amended.* * 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 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE 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
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
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	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
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) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

Lenovo ErP Lot26 Information Sheet
- Network Equipment -

As required by_

- Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off-mode electric power consumption of electrical and electronic household equipment (ErP Lot 6)
- Commission Regulation (EU) No 801/2013 of 22 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for (ErP Lot 26).

Products scope of this sheet:
Notebook/Tablet Computer < 6 W Idle

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

Commercial name	***ThinkPad X1 Yoga Gen 8***	**Logo**
Model Number	***21HQ,21HR***	
Product Type	***Notebook Computer with Idle Power < 6 W***	
Issue Date	***2023-03-06***	
Additional information		

P7.1.1 Product environmental attributes

(1) year of manufacture: ***2023***

(2)

Network Standby Classification	***LoNA Equipment***
Off Mode Power (Watts)	***0.49 Watts***
Standby Mode	***Watts*** ☒Mode Not Applicable ***minutes Default Delay Time***
Description of how to enable Network Standby Mode	***Network Standby Mode is enabled at Shipment***
Description of how to manually enter Network Standby Mode	***1) Press the Power Button once*** ***2) Click on the Power Button and choose Sleep***
Default Delay time to Network Standby Mode	***7.5 minutes***
Reactivation Function from Network Standby Mode	***Open Notebook, Press Keyboard or power button, activate USB***

(3)

Network Port	Wired Ethernet	Wireless Ethernet	USB-A	USB-C	HDMI	BlueTooth	Other: ***Nano-SIM***
Present in Product	☐	☒	☒	☒	☒	☒	☒
Activated at Shipment	☐	☒	☒	☒	☒	☒	☒
Active in Network Standby Mode	☐	☒	☐	☐	☐	☐	☐
Location of Network Port	***N/A***	***N/A***	***Left and Righ***	***Left***	***Left***	***N/A***	***Right***
Network Port Maximum Performance	GB/s	***0.15***GB/s	GB/s	GB/s	GB/s	GB/s	GB/s
Network Protocol		***Wi-Fi 6; 802.11ax***	***USB 3.2 Gen 1***	***Thunderbol t 4***		***BT5.2***	***4G***
Network Standby Mode Power	Watts	***0.80***Watts	Watts	Watts	Watts	Watts	Watts
Network Standby Power – All Active Connections	***0.80***Watts						

Additional Information

Instructions on connecting to and disconnecting from wireless networks is included in the User Manual

(4) Test parameters for measurements,

ambient temperature,	***24.1*** degree Celsius
test voltage in V and frequency in Hz,	***230*** V / ***50*** Hz
total harmonic distortion of the electricity supply system,	***5%***
information and documentation on the instrumentation, set-up and circuits used for electrical testing	***Power Meter: HITESTER HIOKI 3332; AC Source: ALLPOWER APF-500W***

(3) External power supply efficiency (if applicable)*:

Model	Output Voltage	Output Current	Output Power	Average Active Efficiency	10% Load Efficiency	No Load Power
Delta	***20*** V	***2.25*** A	***45*** W	***90%***	***88%***	***0.07*** W
Chicony	***20*** V	***2.25*** A	***45*** W	***89%***	***88%***	***0.05*** W
Liteon	***20*** V	***2.25*** A	***45*** W	***90%***	***88%***	***0.07*** W
Acbel	***20*** V	***2.25*** A	***45*** W	***81%***	***81%***	***0.06*** W
Delta	***20*** V	***3.25*** A	***65*** W	***92%***	***91%***	***0.06*** W
Chicony	***20*** V	***3.25*** A	***65*** W	***91%***	***89%***	***0.07*** W
Liteon	***20*** V	***3.25*** A	***65*** W	***90%***	***90%***	***0.08*** W
Acbel	***20*** V	***3.25*** A	***65*** W	***82%***	***81%***	***0.06*** W

*Values are tested at 230V / 50Hz

(4) Measurement methodology used to determine information mentioned in points (5) – external PSU efficiency:

EN 50563:2011/A1:2013

Additional information