Display Energy Efficiency Compliance Report for COMMISSION REGULATION (EC) No 1062/2010

Regulatory Reference: COMMISSION DELEGATED REGULATION (EU) No 1062/2010 of 28 September 2010 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of televisions and Decree of the Cabinet of Ministers No. 359 "On the adoption of the technical regulation with regard to energy labelling of televisions" as of May 24, 2017

HP Project Name:	1.) HP 24f Display 2.) HP 24fw Display	
Regulatory Model Number:	HSTND-9931-K	
Product Family Numbers/ Marketing Names:	1.) HP 24f 23.8-inch Display 2.) HP 24fw 23.8-inch Display	
Product Classification according to regulation	TV Monitor	
HP Supplier's Name:	Suzhou Lehui Display Co., Ltd.	
Name of company conducting testing:	Suzhou Lehui Display Co., Ltd.	
Company's physical address:	No. 225, Jinfeng Road, Suzhou New District, Suzhou, Jiangsu, China	
Serial number or Lab Sample number of unit under test:	3CM741067D	
Test Report number	N/A	(if applicable)
Test date:	October 29, 2017	Use month name, not number. Example: "May 20, 2013" or "20 May 2013"
Standard(s) and/or Test Method(s) used	COMMISSION DELEGATED REGULATION (EU) No 1062/2010	Include all test methods that are applicable Enter: IEC 62087 Ed2 Standard for On Mode power consumption, and EN50564:2011 for stand-by and off mode power consumption.
Energy Efficiency Class	A	Enter the Alphabetic class "rating". Note: Restrict the classification to A, A+, A++, A++ only. HP marketing will only accept classifications A for better

Display Test Information Recorded By:

Name: Leilei.Li Title: Engineer Date: 2017.10.30

Signature:

Reviewed and Approved by:

Name: Kingson Jin Title: Manager Date: 2017.10.30

Signature

Display Energy Efficiency Compliance Report for COMMISSION REGULATION (EC) No 1062/2010

1. Display Configuration Information:

1.1 Is the display classified as a "Television Monitor" according to the 1062/2010 EC Energy Labeling regulation? (Answer "no" if the Display has an HDMI, Display Port, or VGA connector. Note: HP has chosen to label some Computer Displays to inform consumers.	Yes
1.2 Visible diagonal screen size in centimeters and inches (Used to calculate "Visible Screen Area" in the formula for Energy Efficiency Index in the next section of this form)	60.5 centimeters 23.8 inches
1.3 Diagonal Viewable Screen Size (Inches)	23.8
1.4 Panel Active Area (horizontal x vertical in mm)	527.04 x 296.46
1.5 Display Native Screen Resolution (Provide the displays Native screen resolution in both physical horizontal and vertical pixel count. Example: 1440 x 900)	1920 x 1080
1.6 Aspect Ratio (Example: 16:9)	16:9
1.7 Does the Display have Automatic Brightness Control? (Yes / No)	No
1.8 Is Automatic Brightness Control enabled when Monitor/Display is shipped? (Yes/No/Not Applicable)	Not Applicable
1.9 Does the display have an integrated television tuner and no hard disk drive (HDD)? (Yes/No)	No
1.10 Does the display have two or more integrated television tuners / receivers? (Yes/No)	No
1.11 Does the display have two or more integrated television tuners / receivers and one or more hard disk drives (HDD)? (Yes/No)	No
1.12 Does the display have an easily viewable hard power switch (off state power consumption ≤ 0.01)? (Yes/No) Note: A power switch located on the back of the display is not considered "easily viewable".	No

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2. Display Unit Energy Efficiency Test Results

Note: The supply voltage required for testing products that will be sold in the European Union is **230 (± 1%) Volts AC, 50 Hz (± 1%).** Additionally, measurements shall be made with an uncertainty of less than or equal to 2 % at the 95 % confidence level.

If testing is performed for countries or regions other than EU, the supply voltage values should be 100 (± 1%) Volts AC, 50 Hz (± 1%)/60 Hz (± 1%); 115 (± 1%) Volts AC, 60 Hz (± 1%); 230 (± 1%) Volts AC, 50 Hz (± 1%) For products rated for > 1.5 kW maximum power, the voltage range is ± 4% based on ENERGY STAR Program Requirements.

Energy Efficiency Test or Calculated Parameters	Test Results at 230 VAC (± 1%) Volts, 50 Hz (± 1%)
2.1 On Mode Power Consumption (in Watts rounded to the first decimal place for power measurements up to 100 Watts, and to the first integer for power measurements above 100 Watts**)**	19.03
2.2 Annual on-mode energy consumption (Calculated value according to the following formula: E (in kWh per Year) is calculated as E = 1.46 × P	27.8
2.3 Sleep Mode Power Consumption (in Watts rounded to the second decimal place)	0.23
2.4 Off Mode Power Consumption (in Watts rounded to the second decimal place)	0.17
2.5 Energy Efficiency Index (Calculated value based on the following formula and parameters: **The Energy Efficiency Index (*EEI*) is calculated as *EEI* = P/P ref (A),** where: P ref (A) = P basic + A × 4,3224 Watts/dm 2 , P basic = 20 Watts for television sets with one tuner/receiver and no hard disc, P basic = 24 Watts for television sets with hard disc(s), P basic = 24 Watts for television sets with two or more tuners/receivers, P basic = 28 Watts for television sets with hard disc(s) and two or more tuners/receivers, P basic = 15 Watts for television monitors, A is the visible screen area expressed in dm 2 , P is the on-mode power consumption of the television in Watts measured in accordance with Annex VII, rounded to one decimal place. Note: The annual on-mode energy consumption E (in kWh) is calculated as E = 1,46 × P and recorded in row 2.2 above	0.231

Note: Record the Energy Efficiency Class on page #1 of this report using the Energy Efficiency Class Limits listed on the next page (extract of the COMMISSION DELEGATED REGULATION (EU) No 1062/2010, Annex 1, Table 1).

3. Copy of Display Energy Efficiency Label (Based on Test Results):

[Insert a copy of the Energy Efficiency Label that is based on the test results in this form and that will be displayed on units represented by the results recorded in this form (record).

Display Energy Efficiency Compliance Report for COMMISSION REGULATION (EC) No 1062/2010

4. Extract of the Energy Efficiency Class Limits from the COMMISSION DELEGATED REGULATION (EU) No 1062/2010, Annex 1, Table 1: Energy efficiency class

The energy efficiency class of a television shall be determined on the basis of its Energy Efficiency Index (*EEI*) as set out in Table 1. The Energy Efficiency Index of a television shall be determined in accordance with point 1 of Annex II.

Table 1 **Energy efficiency class of a television:**

Energy Efficiency Class	Energy Efficiency Index
A+++ (most efficient)	***EEI*** **< 0,10**
A++	**0,10 ≤** ***EEI*** **< 0,16**
A+	**0,16 ≤** ***EEI*** **< 0,23**
A	**0,23 ≤** ***EEI*** **< 0,30**
B	**0,30 ≤** ***EEI*** **< 0,42**
C	**0,42 ≤** ***EEI*** **< 0,60**
D	**0,60 ≤** ***EEI*** **< 0,80**
E	**0,80 ≤** ***EEI*** **< 0,90**
F	**0,90 ≤** ***EEI*** **< 1,00**
G (least efficient)	**1,00 ≤** ***EEI***

Notes:

5. The Energy Efficiency Label shall be applied to all Displays that will be sold in the European Union and not applied to displays that are shipped outside of the European Union.
6. The only Displays that may be shipped to the European Union are those Display Models that have an Energy Efficiency Class of A or A+, A++, A+++ . Displays with an Energy Efficiency Class of B, C, D, E, F, or G may not be shipped to the European Union.

Display Energy Efficiency Compliance Report for COMMISSION REGULATION (EC) No 1062/2010

5. Test Equipment Information (list all test equipment below that was used to measure PC System Unit energy efficiency):

5.1 Test Equipment description	5.2 Test Equipment Model Number	5.3 Test Equipment Serial Number	5.4 Date of Last Calibration	5.5 Date for Next Calibration
Programmable video pattern generator	Chroma23291	232910000128	2017/10/8	2018/4/8
Power Analyzer	Chroma66202	662022000791	2016/11/5	2017/11/5
AC Power Source	Chroma6230	1160083	2016/11/8	2017/11/7
Color Analyzer	Chroma7123	712300000118	2017/5/4	2017/11/3
Blue-Ray Player	Sony BDP S1	004KVFW083131	N/A	N/A
DVD Disc	IEC62087 Ed2.0	N/A	N/A	N/A
5.6 Enter the Power Meter Current Crest Factor				4.652
5.7 Enter the Power meter lower bound on current range (mA)				1mA
5.8 Enter the input terminal for the audio and video test signals				HDMI
5.9 Enter information and documentation on the instrumentation, set-up and circuits used for electrical testing. Note: We recommend referencing the standard used for energy efficiency testing in this section.				2009/125/EC

6. Test Laboratory Environmental Conditions (PC System Unit Testing):

6.1 Is the facility / laboratory where testing was performed ISO / IEC 17025 accredited? (Yes/No)	Yes
6.2 Enter Ambient Temperature of the laboratory where energy efficiency is being performed (Degrees Celsius) **Note: Values should be 23°C ± 5°C based on ENERGY STAR Program Requirements**	25°C
6.3 Enter the Relative Humidity (in Percent) **Note: Values should be 10% to 80% based on ENERGY STAR Program Requirements**	50%
6.4 Enter Test Conditions Supply Voltage **Note: Values should be 230 (± 1%) Volts AC, 50 Hz (± 1%) for products sold in the European Union. For products rated for > 1.5 kW maximum power, the voltage range is ± 4% based on ENERGY STAR Program Requirements**	230V/50Hz
6.5 Enter Total Harmonic Distortion (THD) (Voltage): **Note: Values should be< 2% THD (< 5% for products which are rated for > 1.5 kW maximum power) based on ENERGY STAR Program Requirements**	0.178