## Product Environmental Aspects Declaration

製品環境情報 http://www.jemai.or.jp

No. AD-15-E585

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Apr./16/2015

EP and IJ printer (PCR-ID:AD-04)

# RICOH imagine. change.



Environment Contact: RICOH Company, Ltd. Corporate Communication Center email: envinfo@ricoh.co.jp

## **LANIER Pro C7110SX Pro80**

1.Printing Process: Electrophotographic (EP) Printing

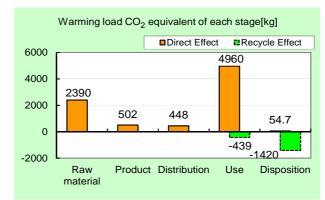
**2.Color**: Monochrome and Full-color **3.Print Speed**: 90 prints/minute (LTR)

**4.Maximum Paper Size**: 13" x 49" (bypass tray or LCIT) **5.Included Units in Assessment**: Automatic Reversing Document Feeder, Automatic Duplexing Unit

The warming load of the Use stage is based on the supposition that the product prints 4,838,400 images for five years.

Consumption and discharge in a life cycle	All the stage sum totals
Global Warming (CO <sub>2</sub>	8.36t
equivalent)	(6.49t)
Acidification (SO <sub>2</sub>	14.0kg
equivalent)	(11.0kg)
Energy resources (crude oil	164GJ
equivalent)	(131GJ)

Figures in ( ) indicated environmental impact including recycle effect \*note3



#### Notes:

- 1. Original LCA data is available on PEIDS: Product Environmental Information Declaration Sheet, and Product Data Sheet.
- 2. Unified rules and requirements for EcoLeaf LCA, for intended product category, are available as a PCR: Product Category Rule. Visit EcoLeaf website under JEMAI homepage at http://www.ecoleaf-jemai.jp/eng/ for details.
- 3. Recycle Effect illustrates an indirect influence to other products/services.
- 4. Basic Units used for calculations are based on Japan domestic data at this time, due to a lack of base data to establish localized Basic Unit for overseas locations adequately.
- 5. This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitative and quantitative data collected in Japan.

#### [Supplemental environmental information]

- •Certified regulations: International Energy Star Program, EU RoHS.
- •This product and its main components such as photoreceptor, toner, carrier are produced in our factories certified to ISO14001 management system standard.

PCR review was conducted by: PCR Deliberation Committee, January 01, 2008, Name of reprentative: Youji Uchiyama, University of Tsukuba, Graduate School

Independent verification of the declaration and data, according to ISO14025 □internal ■external Third party verifier: Shozo Nakamuta \*

Programme operator: Japan Environmental Management Association for Industry, ecoleaf@jemai.or.jp

<sup>\*</sup> In the case of an business entity certified as an Ecoleaf-data-collection system, the names of certification auditors are written.

## Product Environmental Information Data Sheet (PEIDS)



Document control no.	F-02B-03
Product vendor	RICOH COMPANY, LTD.
EcoLeaf registration no.	AD-15-E585

Characterization Factor DB version

v2.1	
v2.1	

	PC	R name	EP a	nd IJ pri	nter	Product type		LANIER Pro C7110SX Pro80		
	F	CR ID	AD-04		Product weight (kg)	604	Package (kg)	57	Weight total (kg)	661
			Life Cycle Stage		Brod	uction				
In/Oı	ut items		Life Cycle Stage	Unit	Raw material	Product	Distribution	Use	Disposition	Recycle effect
	Out items			MJ	3.63E+04	9.36E+03	6.19E+03	1.12E+05	5.38E+01	-3.25E+04
Ene	Energy Consumption			Mcal	8.66E+03	2.24E+03	1.48E+03	2.68E+04	1.29E+01	-7.76E+03
			Coal	kg	5.46E+02	6.25E+01	4.96E+00	3.68E+02	3.24E-01	-4.76E+02
		_	Crude oil (for fuel)	kg	2.43E+02	7.09E+01	1.26E+02	9.96E+02	5.77E-01	-1.33E+02
		Energy	LNG	kg	6.21E+01	3.51E+01	4.27E+00	3.56E+02	1.67E-01	-2.68E+01
			Uranium content of an ore		3.75E-03	4.23E-03	3.25E-04	2.11E-02	2.19E-05	3.09E-04
			Crude oil (for material)	kg	7.33E+01	0	0	4.06E+02	0	-2.25E+02
			Iron content of an ore	kg	4.67E+02	0	0	6.18E+01	0	-4.94E+02
			Cu content of an ore	kg	6.24E+00	0	0	4.22E-02	0	-7.45E+00
			Al content of an ore	kg	3.48E+01	0	0	2.25E+00	0	-3.46E+01
	in ti	Φ	Ni content of an ore	kg	2.52E+00	0	0	2.57E-01	0	-1.00E-02
	Resource Consumption from the environment	Exhaustible	Cr content of an ore	kg	3.57E+00	0	0	3.69E-01	0	-1.83E-01
	onst	hau	Mn content of an ore	kg	2.88E+00	0	0	3.69E-01	0	-4.28E-01
	e e C		Pb content of an ore	kg	6.39E-01	0	0	7.50E-03	0	-6.06E-01
	n th	Material	Sn content of an ore	kg	0	0	0	0	0	0
	Resc		Zn content of an ore	kg	5.96E+00	0	0	1.00E-01	0	-5.95E+00
			Au content of an ore	kg	0	0	0	0	0	0
			Ag content of an ore	kg	0	0	0	0	0	0
			Silica Sand	kg	2.32E+01	0	0	2.53E+00	0	-1.16E+01
S			Halite	kg	5.02E+01	0	0	8.66E+00	6.54E-03	-5.29E+00
lyse			Limestone	kg	9.56E+01	0	0	1.50E+01	5.33E-01	-8.54E+01
Inventory analyses			Natural soda ash	kg	6.51E-01	0	0	2.06E-01	0	-7.25E-01
tory		Renewable	Wood	kg	9.04E+01	0	0	3.07E+02	0	0.00E+00
ven		resources	Water	kg	1.42E+05	4.89E+04	3.64E+03	4.38E+05	2.79E+02	-6.57E+04
드			CO <sub>2</sub>	kg	2.34E+03	4.96E+02	4.30E+02	4.75E+03	5.47E+01	-1.81E+03
			SO <sub>x</sub>	kg	2.44E+00	3.71E-01	2.73E-01	2.76E+00	2.86E-02	-1.76E+00
			NO <sub>x</sub>	kg	2.73E+00	3.10E-01	1.97E+00	6.50E+00	6.05E-02	-1.67E+00
			N <sub>2</sub> O	kg	1.75E-01	1.84E-02	6.51E-02	7.88E-01	7.21E-05	-1.80E-01
		to Atmosphere	CH <sub>4</sub>	kg	9.32E-03	1.13E-02	8.70E-04	5.63E-02	5.87E-05	1.47E-03
			CO	kg	5.67E-01	7.36E-02	5.33E-01	9.53E-01	1.07E-02	-1.17E-01
	e te		NMVOC	kg	1.83E-02	2.22E-02	1.70E-03	1.10E-01	1.15E-04	2.86E-03
	har		C <sub>x</sub> H <sub>v</sub>	kg	8.29E-02	3.24E-03	5.76E-02	2.39E-01	1.84E-04	-7.22E-02
	Disc		Dust	kg	3.70E-01	1.59E-02	1.86E-01	5.27E-01	3.37E-03	-3.14E-01
	Emission/Discharge to the environment		BOD	kg	-	-	-	-	-	-
	miss the		COD	kg	-	-	-	•	-	-
	파함	to Water system	N total	kg	-	-	-	-	-	-
			P total	kg	-	-	-	•	-	-
			SS	kg	-	-	-	-	-	-
			Unspecified Solid Waste	kg	1.72E+01	0	0	9.56E+01	5.85E+01	-9.37E+00
		to Soil system	Slag	kg	1.67E+02	0	0	1.90E+01	0	-1.56E+02
		Jon System	Sludge	kg	7.46E+01	0	0	4.83E+00	0	-7.42E+01
			Low level radio-active waste	kg	2.63E-03	2.95E-03	2.27E-04	1.47E-02	1.53E-05	2.17E-04
ent	by Resource Consumption	Exhaustible	Energy resources (crude oil equivalent)	kg	6.99E+02	1.88E+02	1.37E+02	1.83E+03	1.17E+00	-4.68E+02
act assessment	by Re Const	resources	Mineral resources (Iron ore equivalent)	kg	4.78E+03	0	0	5.28E+02	0	-2.96E+03
oact as	ssion/ rge to e		Global Warming (CO <sub>2</sub> equivalent)	kg	2.39E+03	5.02E+02	4.48E+02	4.96E+03	5.47E+01	-1.86E+03

## [Notes for readers: EcoLeaf common rules]

to Atmosphere

Acidification (SO<sub>2</sub>

equivalent)

L Stage related
A. Production' stage is intended for two sub-stages listed below.

(1) "Raw material" production: consists of mining, transportation and raw material production.

(2) "Product" production: consists of the parts processing, assembly and installation.

B. "Distribution" stage is intended for transportation of produced product. Transportation of consumables and maintenance goods (e.g. replacement parts) for use of the product are included into "Use" stage.

5.88E-01

1.65E+00

7.31E+00

7.09E-02

-2.93E+00

- C. "Use" stage is intended for use of the product (active mode, standby mode, etc.) and production, transportation to disposal/recycle of consumables/maintenance goods (e.g. replacement parts).
- D. "Disposition/Recycle" stage is intended for environmental impacts by product disposition/recycle, and deduction by recycling (e.g. impact reduction of raw material production).

4.35E+00

kg

E. "Recycle Effect" illustrates an indirect environmental influences to other products/services by use of reclaimed materials/parts, and/or by supply of used products to other businesses for material reclaim/parts

Case 2: Supply of used products to other businesses for material reclaim/parts reuse: Sum of increase of environmental impact by collection activities of used materials/parts, and decrease by volume reduction of used materials/parts.

Case 2: Supply of used products to other businesses for material reclaim/parts reuse: Sum of increase of environmental impact by materials/parts reclaiming process, and decrease by volume reduction of new materials/parts production.

- II. Inventory analyses
  A. Data of mineral ore on "Exhaustible resources" are presented in weight of pure ingredients (e.g. iron. aluminum) in the ore.
  B. Data on energy resources are presented based on origin in calorific value. e.g. Data on uranium ore presents weight of uranium concentrate, which is available for use as an atomic fuel.
  C. Data of discharge to water system are in actual figure (not calculated using unit function in inventory analyses).

- Ill Impact analyses

  Result of the "Impact analyses" is found in converting results of inventory analyses into total amount of a reference material (e.g. CO<sub>2</sub> in case of "Global Warming").

  A. Impact "by resource consumption" represents magnitude of impacts to resource depletion.

  B. Impact "by emission/discharge to environment" represents magnitude of impacts to Atmosphere, Water and Soil system.

- IV Data entry format
- V ALE sentral invalidation, after the decimal point to two, should be used.

  B. Indicate "O" instead exponential notation, if the result of calculation or estimation is considered as "zero" or negligible in comparison to related results.

  C. Indicate "-" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".

  (BGD for material production are for production from mineral ore. Those data do not include reclaiming processes like recovery from scrap.)

This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitative and quantitative data collected in Japan.

## **Product data sheet**

(Input data and parameters for LCA)

	, , , , , , , , , , , , , , , , , , , ,
Document control no.	F-03-03
Product vendor	RICOH COMPANY, LTD.
EcoLEaf registration no.	AD-15-E585



PCR name	EP and IJ printer ( PCR-ID : AD-04 )	Product type	LANIER Pro C7110SX Pro80				
LCA/LCIA in units of:	1 product	Product weight (kg)	604	Package (kg)	57	Weight total (kg)	661

1. Product information (per unit): parts etc. by material and by process/assembly method

	Bre	eakdown of p	rimary materials		Math breakdown of parts, which	h need to apply	Processing / Assembly Base U	nits (Parts B, C)
	Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
	Stainless steel	1.59E+01	Electronic circuit board	6.94E+00	Press molding: Iron (kg)	4.59E+02	Parts assembly (kg)	6.00E+02
	Aluminum	3.29E+01	Ordinary steel	4.44E+02	Press molding: Nonferrous metal (kg)	5.23E+01		
t	Glass	6.36E+00	Clean water	7.43E+00	Injection molding (kg)	7.57E+01		
Product	Rubber	3.09E+00			Glass molding (kg)	9.46E+00		
ے	Other metals	1.94E+01						
	Paper	4.19E+01						
	Thermoplastic resin	7.83E+01						
	Thermosetting resin	5.18E+00						
	Subtotal	2.03E+02	Subtotal	4.58E+02				
		Total		6.61E+02	Subtotal	5.96E+02	Subtotal	6.00E+02

Note

2. Production site information (per unit): Consumption and discharge/emission for production/processing/assembly within the site.

SOx and NOx should be indicated in  $SO_2$ ,  $NO_2$  equivalent.

드	Classification	Energy	Material	Energy	Material	Energy		
onsumption	Distribution	Electricity (kWh)	Clean water (kg)	Furnace LNG (kg)	Industrial water (kg)	Furnace urban gas (13A) (m <sup>3</sup> )		
	Quantity	2.92E+02	2.95E+02	1.56E+00	1.21E+03	2.88E+00		
Ö	Note							
> a>	Classification	Water system						
Emission/ Discharge	Distribution	Sewage processing (kg)						
	Quantity	1.51E+03						
	Note							

Note

3. Distribution stage information (per unit): means, distance, loading ratio, consumptions and emissions/discharges.

	Means of transportation	Diesel truck: 10 ton (kg·km)	Freight by ship (kg·km)	Freight by ship (kg·km)	Freight by ship (kg·km)	Freight by ship (kg·km)			
	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)
bution	Quantity	6.61E+02	1.52E+02	5.29E+01	1.90E+05	6.61E+02	9.02E+03	1.00E+02	5.96E+06
	Note								
Distrib	Means of transportation	Freight by rail (kg·km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 20 ton (kg·km)			
	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)
	Quantity	6.61E+02	4.99E+03	1.00E+02	3.30E+06	6.61E+02	6.00E+02	3.62E+01	1.10E+06
	Note								

Note

4. Use stage (per unit): use condition (mode, term) including active mode, standby mode and maintenance.

4.1 Product and accessories subject to this analysis

	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Stainless steel plate (kg)	Aluminum plate (kg)	Glass (kg)	Styrene- butadiene rubber (SBR) (kg)	Copper plate (kg)	Zinc (kg)	Corrugated cardboard (kg)	Paper (Western style) (kg)
	Quantity	1.62E+00	2.13E+00	2.46E+00	2.51E+00	1.40E-01	5.56E-02	1.44E+02	4.20E-03
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Product	Distribution	ABS (kg)	Polycarbonate (kg)	Polycarbonate- ABS (70/30) (kg)	High density polyethylene (kg)	Low density polyethylene (kg)	PET (kg)	POM (polyacetal) (kg)	Polypropylene (kg)
"	Quantity	4.59E+00	1.34E+00	4.80E+00	7.11E+01	2.58E+01	3.75E+02	7.46E+00	3.38E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Polystyrene (kg)	Epoxy resin (EP) (kg)	Expandable hard polyurethane (Hard) (kg)	Expandable soft polyurethane (for automobile) (kg)	Electroplated steel Plate (kg)	Hot Dipped steel plate (kg)	Cold-Rolled steel plate (kg)	Press molding: Iron (kg)
	Quantity	4.42E+01	2.69E-02	1.90E-01	4.89E-01	2.03E+00	7.94E-01	5.63E+01	4.96E+01
	Note		·						

	Classification	Condition	Consumption	Consumption	Consumption	Consumption	Energy	Condition	Energy
	Distribution	Diesel truck: 10 ton (kg·km)	Press molding: Nonferrous metal (kg)	Injection molding (kg)	Glass molding (kg)	Parts assembly (kg)	Electricity (kWh)	Freight by ship (kg·km)	Furnace LNG (kg)
	Quantity	9.75E+04	2.33E+00	1.63E+02	4.96E+00	2.19E+02	1.57E+03	4.66E+06	7.50E+01
	Note								
	Classification	Energy	Material	Water system	Consumption	Consumption	Condition	Condition	Condition
Product	Distribution	Furnace urban gas (13A) (m <sup>3</sup> )	Industrial water (kg)	Sewage processing (kg)	Electricity (kWh)	Gasoline (kg)	Freight by rail (kg·km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 10 ton (kg·km)
	Quantity	7.66E+01	4.11E+02	4.11E+02	3.03E+03	8.80E+00	2.58E+06	5.00E+05	2.11E+03
	Note								
	Classification	Condition	Condition	Condition	Condition	Condition	Condition	Condition	
	Distribution	Freight by ship (kg·km)	Freight by rail (kg·km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Freight by ship (kg·km)	Freight by rail (kg·km)	Diesel truck: 20 ton (kg·km)	
	Quantity	1.01E+05	5.57E+04	1.08E+04	5.38E+04	1.98E+06	1.09E+06	2.12E+05	
	Note							·	

Note

4.2 Disposition/Recycle information on consumables and replacement parts

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
	Distribution	Diesel truck: 4 ton (kg·km)	Landfill: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Shredding (kg)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)
	Quantity	1.39E+04	6.03E+01	1.44E+02	2.68E+02	2.65E+02	2.18E+02	2.16E+02	2.46E+00
	Note								
seles	Classification	Process	Process	Process	Process	Deduction	Deduction	Deduction	Deduction
Consumables	Distribution	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)
	Quantity	4.76E+01	2.05E+00	1.88E-01	1.55E+02	2.41E+00	4.76E+01	2.05E+00	1.88E-01
	Note								
	Classification	Deduction	Process						
	Distribution	Polystyrene (kg)	Diesel truck: 10 ton (kg·km)						
	Quantity	1.55E+02	2.14E+05						
	Note								

Note

5. Disposition/Recycle stage information (per product): process method and scenarios

Scenario	Classification	Process	Process	Process	Process	Process	Process	Deduction	Process
	Distribution	Landfill: Industrial waste (kg)	Shredding (kg)	Incineration: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Diesel truck: 10 ton (kg·km)	Diesel truck: 4 ton (kg·km)	High density polyethylene (kg)	Sorting: Iron (by magnetic force) (kg)
	Quantity	5.24E+01	6.14E+02	4.32E-01	3.98E+01	4.91E+05	3.85E+03	1.23E+00	6.06E+02
	Note								
	Classification	Process	Process	Process	Process	Process	Process	Process	Deduction
	Distribution	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)
	Quantity	1.77E+02	1.28E+02	6.36E+00	4.28E+02	3.07E+01	2.45E+01	7.09E+01	6.24E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction				
	Distribution	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)	Polystyrene (kg)				
	Quantity	4.28E+02	3.07E+01	2.45E+01	6.97E+01				
	Note								

Note

### 6. Others

This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitative and quantitative data collected in Japan.