Product Environmental Aspects Declaration

ECO LEAF
製品環境情報
http://www.jemai.or.jp

Flat-bed / Sheet-fed scanner (PCR-ID: CA-01)

No. CA-14-021
Date of publication
June/10/2014

ScanSnap iX100

FUJITSU

http://www.fujitsu.com/
FUJITSU LIMITED

http://www.pfu.fujitsu.com/
PFU LIMITED

* ScanSnap Contact
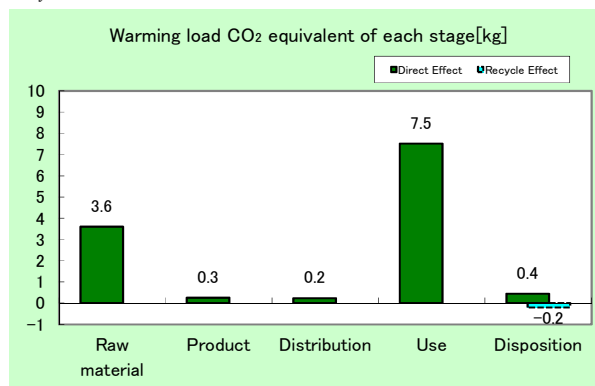http://scansnap.fujitsu.com/

PFU LIMITED
Imaging Service & Support center
E-mail : scanners@pfu.fujitsu.com

Product Name	ScanSnap iX100
Product Category	Sheet-fed scanner (Without Flat-bed) For Personal and Business
Scanning Speed	Simplex, 5.2sec/paper
Scanning Size	216mm X 360mm
Optical Resolution	600 X 600 dpi (dots per inch)
Scanning Method	Color Contact Image Sensor Image Sensor: CMOS

Consumption and discharge in a life cycle	All the stage sum totals
Global Warming (CO_2 equivalent)	12.0kg （11.8kg）
Acidification (SO_2 equivalent)	0.018kg （0.017kg）
Energy resources (crude oil equivalent)	245MJ （241MJ）

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

Warming load CO_2 equivalent of each stage[kg]

■Direct Effect ▮Recycle Effect

Raw material	Product	Distribution	Use	Disposition
3.6	0.3	0.2	7.5	0.4 / −0.2

The burdens have been calculated with 25 scans per day, a monthly use of 20 days, and 5 years of use, for the number of scans of 30,000 times (600,000 pages) overall.

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.

[Supplemental environmental information]
・ Certified regulations: Energy Star 2.0
・ This product are produced in our factories certified to ISO14001 management system standard.
・ Conformance with RoHS Directive (2011/65/EU).

PCR review was conducted by : Review Panel, June 07, 2006, Name of representative: Youji Uchiyama, University of Tsukuba, Graduate School
Independent verification of the declaration and data, according to ISO14025:2006　□internal ■external
Third party verifier: Hiromi Horikawa*

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

* 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）

ECO LEAF
Product Environmental Aspects Declaration
製品環境情報
http://www.jemai.or.jp

Document control no.	F-02Bs-02
Product vendor	PFU LIMITED
EcoLeaf registration no.	CA-14-021

Unit Function DB version	v2.1
Characterization Factor DB version	v2.1

PCR name	Flat-bed / Sheet-fed scanner		Product type	ScanSnap iX100		
PCR code	CA-01	Product weight (kg)	0.4	Package (kg)	0.3	Weight total (kg)	0.7

In/Out items				Unit	Production Raw material	Production Product	Distribution	Use	Disposition	Recycle Effect
Inventory analyses	Impact by Resource Consumption	Exhaustible resources	Energy resources — Coal	MJ / Mcal	6.71E+01 / 1.60E+01	4.58E+00 / 1.09E+00	3.09E+00 / 7.38E-01	1.69E+02 / 4.04E+01	4.94E-01 / 1.18E-01	-3.82E+00 / -9.13E-01

Energy Consumption:

In/Out items	Unit	Raw material	Product	Distribution	Use	Disposition	Recycle Effect
Energy Consumption	MJ	6.71E+01	4.58E+00	3.09E+00	1.69E+02	4.94E-01	-3.82E+00
Energy Consumption	Mcal	1.60E+01	1.09E+00	7.38E-01	4.04E+01	1.18E-01	-9.13E-01
Coal	kg	3.30E-01	3.22E-02	7.22E-06	9.63E-01	3.03E-03	-5.24E-03
Crude oil (for fuel)	kg	7.55E-01	3.73E-02	6.75E-02	1.09E+00	5.17E-03	-6.08E-02
LNG	kg	1.23E-01	1.61E-02	1.04E-03	4.82E-01	1.55E-03	-8.62E-04
Uranium content of an ore	kg	1.32E-05	2.18E-06	4.89E-10	6.52E-05	2.05E-07	2.11E-08
Crude oil (for material)	kg	2.54E-01	0	0	0	0	-2.20E-02
Iron content of an ore	kg	6.32E-02	0	0	0	0	-6.63E-03
Cu content of an ore	kg	1.18E-02	0	0	0	0	-3.60E-04
Al content of an ore	kg	1.87E-03	0	0	0	0	-2.33E-05
Ni content of an ore	kg	8.78E-03	0	0	0	0	-1.35E-07
C content of an ore	kg	1.19E-02	0	0	0	0	-2.46E-06
Mn content of an ore	kg	1.79E-02	0	0	0	0	-5.76E-06
Pb content of an ore	kg	1.87E-03	0	0	0	0	-2.92E-05
Sn content of an ore	kg	0	0	0	0	0	0
Zn content of an ore	kg	1.85E-02	0	0	0	0	-2.87E-04
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	2.43E-02	0	0	0	0	-1.58E-03
Halite	kg	1.65E-01	0	0	0	1.68E-04	-4.25E-04
Limestone	kg	2.47E-02	0	0	0	4.06E-03	-1.57E-03
Natural soda ash	kg	2.45E-03	0	0	0	0	-1.65E-04
Wood	kg	5.29E-01	0	0	0	0	-2.58E-01
Water	kg	3.27E+02	2.51E+01	5.45E-03	7.30E+02	2.55E+00	-8.75E+00
CO2	kg	3.51E+00	2.53E-01	2.19E-01	7.49E+00	4.38E-01	-1.98E-01
Sox	kg	2.79E-03	1.92E-04	1.85E-04	5.72E-03	2.29E-04	-4.64E-05
Nox	kg	5.10E-03	1.55E-04	1.92E-03	4.53E-03	4.82E-04	-4.08E-04
N2O	kg	3.27E-04	3.44E-06	2.42E-05	8.18E-05	6.82E-07	-2.03E-05
CH4	kg	3.52E-05	5.82E-06	1.31E-09	1.74E-04	5.48E-07	5.36E-08
CO	kg	5.28E-04	3.76E-05	6.79E-04	1.11E-03	8.54E-05	-1.12E-05
NMVOC	kg	6.87E-05	1.14E-05	2.57E-09	3.41E-04	1.07E-06	1.10E-07
CxHy	kg	1.48E-04	1.04E-06	4.52E-05	1.78E-05	1.55E-06	-1.02E-05
Dust	kg	4.85E-04	8.19E-06	1.64E-04	2.44E-04	2.72E-05	-2.16E-05
BOD	kg	-	-	-	-	-	-
COD	kg	-	-	-	-	-	-
N total	kg	-	-	-	-	-	-
P total	kg	-	-	-	-	-	-
SS	kg	-	-	-	-	-	-
Unspecified Solid Waste	kg	3.82E-02	2.79E-05	0	0	2.10E-01	7.93E-02
Slag	kg	7.55E-02	0	0	0	0	-2.33E-03
Sludge	kg	4.99E-04	0	0	0	0	-4.99E-05
Low level radio-active waste	kg	9.25E-06	1.52E-06	3.42E-10	4.55E-05	1.43E-07	1.48E-08
Energy resources (crude oil equivalent)	kg	1.22E+00	9.52E-02	6.88E-02	2.82E+00	1.07E-02	-6.51E-02
Mineral resources (Iron ore equivalent)	kg	1.29E+01	-	-	-	-	-1.26E-01
Global Warming (CO2 equivalent)	kg	3.60E+00	2.54E-01	2.25E-01	7.51E+00	4.38E-01	-2.03E-01
Acidification (SO2 equivalent)	kg	6.36E-03	3.00E-04	1.53E-03	8.89E-03	5.67E-04	-3.32E-04
-	-	-	-	-	-	-	-
Photochemical Oxidant	kg	2.86E-04	8.58E-06	8.52E-05	2.52E-04	1.24E-05	-1.28E-05
-	-	-	-	-	-	-	-

Row/column labels (left side, Inventory analyses): Impact by Resource Consumption — Exhaustible resources (Energy resources, Mineral resources), Renewable resources; Impact by Emission/Discharge to the environment — to Atmosphere, to Water system (to Water domain), to Soil system. Impact assessment — by Resource / Exhaustible resources; by Emission/Discharge to environment — to Atmosphere, to Water system.

[Notes for readers: EcoLeaf common rules]

I. 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.

  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）.

  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 reuse.

  Case 1: Use of reclaimed materials/parts: 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）.

III 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_2 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

  A. Exponential notation, after the decimal point to two, should be used.

  B. Indicate "0" 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.）

[Notes for readers: Target product specific]

1. Regarding the "Raw material" production, the environmental burdens of resource mining, transportation and raw material production for the main unit, accessories and packaging materials are calculated using the EcoLeaf basic unit.

2. In "Product" production, for parts processing, the environmental burden is calculated using the EcoLeaf basic unit and production site data.
   For Parts/material C assembled at other than the main unit assembly site, the burden is calculated using the EcoLeaf basic unit（Assembly）.

3. The "Distribution" stage basic conditions and basic unit are in accordance with the provisions of PCR.
   The burdens are calculated with 500km for the total domestic transportation distance.
   For transportation from China, the burdens of transporting by truck and sea are entered into the calculation.

4. The "Use" stage basic conditions and basic unit are in accordance with the provisions of PCR.
   The burdens of electricity consumption is calculated with the total scanning number of 600,000 sheets in the customer use period of 5 years.
   The electricity consumption during power-off is entered into the calculation, presuming that the USB connector remains plugged even if not in use.

5. At the "Disposition/Recycle" stage, in accordance with the provisions of PCR, the recycling scenario is established at our company.
   The recycling burden is calculated with the 10% product recovery rate from the customer.
   For the 90% non-recovery rate, the burden is calculated by using the General Waste Disposal Scenario.
   For manuals, packaging boxes and cushioning materials, the recycling burden is calculated by setting up the Open Recycling Scenario.

6. Regarding "Recycle Effect", the burdens accompanying the production of raw materials using the materials recycled from the parts are deducted.

Product data sheet

(Input data and parameters for LCA)

Document control no.	F-03s-02
Product vendor	PFU LIMITED
EcoLEaf registration no.	CA-14-021

PCR name	Flat-bed / Sheet-fed scanner (PCR-ID: CA-01)	Product type		ScanSnap iX100			
LCA/LCIA in units of:	1 unit	Product weight (kg)	0.4	Package (kg)	0.3	Weight total (kg)	0.7

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

	Breakdown of primary materials				Math breakdown of parts, which need to apply Processing / Assembly Base Units (Parts B, C)			
	Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
Product	Other Metals	1.19E-02	Middle sized motor	1.87E-02	Press molding:Iron (kg)	7.14E-02	Parts assembly (kg)	1.84E-01
	Ordinary steel	8.44E-03	Rubber	7.44E-03	Press molding:Nonferrous metal (kg)	2.39E-02		
	Stainless steel	5.56E-02	Battery	1.81E-02	Injection molding (kg)	3.33E-01		
	Thermoplastic resin	2.84E-01			Glass molding (kg)	5.71E-03		
	Aluminium	2.20E-04						
	Glass	1.96E-02						
	Paper	2.47E-01						
	Semiconductor substrate	3.23E-02						
	Subtotal	6.59E-01	Subtotal	4.42E-02				
	Total			7.03E-01	Subtotal	4.34E-01	Subtotal	1.84E-01

Note The environmental burdens of the main unit, accessories and packaging materials are included.

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.

	Classification	Energy	Energy	Material			
Consumption	Distribution	Electricity (kWh)	Diesel oil as fuel (kg)	Industrial water (kg)			
	Quantity	6.74E-02	1.02E-03	7.41E-01			
	Note						
Emission / Discharge	Classification						
	Distribution						
	Quantity						
	Note						

Note The burdens of mounting parts on printed circuit boards, air conditioners, electric lights, electric tools and test equipment at the product production site are included.

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

	Means of transportation	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	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)
Distribution	Conditions	Mass(kg)	Distance（km）	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance（km）	Loading Ratio(%w)	Load(kg·km)
	Quantity	7.00E-01	9.00E+01	5.23E+01	1.20E+02	7.00E-01	3.00E+03	1.00E+02	2.10E+03
	Note	Transport in China				Transport from China to Japan			
	Means of transportation	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 4 ton (kg·km)	Diesel truck: 4 ton (kg·km)	Diesel truck: 4 ton (kg·km)	Diesel truck: 4 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	7.00E-01	2.20E+01	5.23E+01	2.94E+01	7.00E-01	5.00E+02	3.73E+01	9.38E+02
	Note	Transport from the harbor to the warehouse				Transport from the warehouse to customer			

Note In accordance with the provisions of PCR, the burdens are calculated with 500km for the total domestic transportation distance.
For transportation from China, the burdens of transporting by truck and sea are entered into the calculation.

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						
Product	Distribution	Electricity (kWh)						
	Quantity	1.80E+01						
	Note							

Note In accordance with the provisions of PCR, the burdens of electricity consumption is calculated with the total scanning number of 600,000 sheets in the customer use period of 5 years.
The electricity consumption during power-off is entered into the calculation, presuming that the USB connector remains plugged even if not in use.

4.2 Disposition/Recycle information on consumables and replacement parts

	Classification							
Consumables	Distribution							
	Quantity							
	Note							

Note

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

<table>
<tr><td rowspan="20">Scenario</td><td>Classification</td><td>Process</td><td>Process</td><td>Process</td><td>Consumption</td><td>Consumption</td><td>Process</td><td>Deduction</td><td>Process</td></tr>
<tr><td>Distribution</td><td>Shredding (kg)</td><td>Landfill: General waste (kg)</td><td>Incineration to landfill (as ash) (kg)</td><td>Electricity (kWh)</td><td>Diesel oil as fuel (kg)</td><td>Recycle: to cold-rolled steel (kg)</td><td>Cold-Rolled steel plate (kg)</td><td>Recycle: to copper plate (kg)</td></tr>
<tr><td>Quantity</td><td>6.73E-01</td><td>1.61E-01</td><td>3.19E-01</td><td>4.99E-02</td><td>1.65E-04</td><td>6.40E-03</td><td>6.40E-03</td><td>1.19E-03</td></tr>
<tr><td>Note</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Classification</td><td>Deduction</td><td>Process</td><td>Deduction</td><td>Process</td><td>Deduction</td><td>Process</td><td>Deduction</td><td>Process</td></tr>
<tr><td>Distribution</td><td>Copper plate (kg)</td><td>Recycle: to Aluminum plate (kg)</td><td>Aluminum plate (kg)</td><td>Recycle: to Glass (kg)</td><td>Glass (kg)</td><td>Recycle: to Thermoplastic pellet (kg)</td><td>ABS (kg)</td><td>Landfill: Industrial waste (kg)</td></tr>
<tr><td>Quantity</td><td>1.19E-03</td><td>2.20E-05</td><td>2.20E-05</td><td>1.96E-03</td><td>1.96E-03</td><td>2.36E-02</td><td>2.36E-02</td><td>8.27E-02</td></tr>
<tr><td>Note</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Classification</td><td>Process</td><td>Process</td><td>Deduction</td><td>Condition</td><td>Condition</td><td></td><td></td><td></td></tr>
<tr><td>Distribution</td><td>Sorting: Nonferrous metal (by eddy current with wind force) (kg)</td><td>Recycle: to corrugated cardboard (kg)</td><td>Corrugated cardboard (kg)</td><td>Diesel truck: 2 ton (kg·km)</td><td>Diesel truck: 2 ton (kg·km)</td><td></td><td></td><td></td></tr>
<tr><td>Quantity</td><td>1.92E-01</td><td>1.21E-01</td><td>1.21E-01</td><td>7.72E+00</td><td>1.66E+01</td><td></td><td></td><td></td></tr>
<tr><td>Note</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Note Based on the recycling scenario established at our company, the recycling burden is calculated with the 10% product recovery rate from the customer.
For the 90% non-recovery rate, the burden is calculated by using the General Waste Disposal Scenario.
For manuals, packaging boxes and cushioning materials, the recycling burden is calculated by setting up the Open Recycling Scenario.

6. Others

Regarding "Recycle Effect", the burdens accompanying the production of raw materials using the materials recycled from the parts are deducted.