

TCI Telecomunicazioni S.r.l. General Information

TCI Telecomunicazioni Italia S.r.l. (hereinafter "TCI") is part of the TCI Group, an international leader in the production and marketing of electrical and electronic equipment for industrial automation and digital communications and in the production and sale of electronic components for lighting.

The products covered by the present Product Environmental Profile are assembled in the plant located in in Via Parma 14, Saronno (VA), Italy.

For more details regarding TCI and the products cover by the PEP, visit <https://www.tci.it/>

Contact details for questions related to the PEP: g.spalice@tci.it

Reference Product

Reference article

DC MAXI JOLLY HC/2 DALI (article code 123314)

Description

Direct current dimmable electronic driver with dip-switch.

Rated Voltage	110 ÷ 120 V 220 ÷ 240 V
Frequency	50-60 Hz
AC Operation range	100 ÷ 264 V
DC Operation range	170 ÷ 280 V
Power	3 ÷ 60 W
iTHD	≤ 10%
Stand by power	≤ 0,5 W
Output current ripple	≤ 3%
In rush current	10A 200µsec



P out W	V out DC	I out DC	U out V	ta °C	tc °C	λ max. Power Factor	η max. Efficiency
55/60	2...29	2,1 A cost	55	-25..+45	85	0,95 C	>92%

Lifetime

10 years

The declared lifetime is valid only when the driver is operated for max. 13h/day in accordance to all technical information and lifetime stated by the manufacturer.

Standards compliance

CSA-C22.2 n° 107.1 ; CSA-C22.2 n° 250.13 -14 ; EN 55015; EN 60598-1; EN 61000-3-2; EN 61000-3-3
EN 61347-1; EN 61347-2-13; EN 61547; EN 62384; EN 62386-101; EN 62386-102; EN 62386-207; IS 15885
(Part 2/Sec 13); UL 1310 ; UL 8750

Functional Unit

Converting the energy necessary to power a luminaire in accordance with the reference usage scenario and during the reference service life of 1 unit.

The functional unit is in compliance with the prescription of IEC 61347-2-13 and IEC 61347-1

Products included in the PEP

The following series belong to the same homogeneous environmental family as the reference product. The weight and power indicated in the table above represent the driver of the serie with the highest weight and power out. Therefore, using a conservative approach they can be considered representative of the other articles included in the same series.

The specific technical data of each product are available in the catalogue available at <https://www.tci.it/prodotti/alimentatori-led/>

SERIES	Weight (g)	Power (W)	Efficiency (%)
ATON	116	38	0,11
SUPERFLAT - SUPERSLIM	65	25	0,13
STC STM STF BULL	40	10	0,27
DC MAXI JOLLY -SMART 50-70 - MP -WIDESQUARE	245	70	0,08
DC EFU EFUR	130	20	0,15
DC JOLLY - MP 22-32-39- K2 - WIDESLIM - MD - WOLF	185	33	0,12
MICRO Z-UD	80	12	0,28
DC MINI JOLLY -MINI MD	106	25	0,13
DCC -BMU - SLIM - DCCH - AR	67	15	0,25
STARLIGHT	245	60	0,08
PROFESSIONALE - SMART - SUPER PRO	139	52	0,1
PRO FLAT	113	40	0,15
KU2-KU3	68	10	0,25
LS	50	10	0,25
DC R - PUMA	110	20	0,15
MICRO MD	68	10	0,25
MICRO JOLLY - RD57 - MOONLIGHT - ACTUATOR-SED-SWITCH	60	9	0,3
DC W -WU-HPF-MWU	93	25	0,13

Materials and Substances

All useful measures have been adopted to ensure that the materials used in the composition of the product do not contain any substances banned by the legislation in force at the time of marketing.

Material type	Weight (kg)	Share (%)
MAIN PRODUCT	0,245	
Printed circuit board	0,0343	13,4%
Integrated circuit	0,0020	0,8%
Metal	0,0139	5,5%
Plastic	0,0660	26,0%
Other	0,1290	50,8%
PACKAGING	0,009	
Plastic	0,00005	0,0%
Other	0,00909	3,6%
TOTAL	0,254	

Manufacturing

These products are manufactured by a site that has received an environmental certification ISO 14001. In consideration of the fact that all the production occurs in the site located in Italy, the Italian residual mix (medium voltage) has been considered.

Distribution

The products are distributed from TCI Telecomunicazioni Italia S.r.l. plant located in Via Parma 14, Saronno (VA), Italy. The Reference Product is mainly transported by road, for an average distance of 870 km, representative of a distribution in Europe. The packaging complies with the European Directive 2004/12/EC on packaging and on waste coming from packaging and the Italian transposition decree (Legislative Decree 152/06 and subsequent amendments).

Installation

Installation processes:

The processes to install the product are not considered in this study because of their low impact compared to the other life cycles steps.

Installation elements (non delivered with the product):

Elements not delivered with the product and needed to install the product are not considered.

Use

The driver has a service life communicated by TCI of 10 years, provided that the appliance is used for 13 hours a day maximum. During the service life, no maintenance or replacement of components is required.

The model considers the driver to be used in an office environment with the following modalities:

- Working days per year: 261 (considering a week Mon to Fri)
- Working hours per day: 8
- Working hours per reference life: 20.880

The driver is considered to be operated at full power with an efficiency of 92%, with a energy consumption dissipated by the driver of 4,8 W.

For the remaining hours (16 hours per working day and 24 hours on week ends) the driver is considered to be in stand by mode with a power of 0,5 W in accordance with technical data sheet and European regulations. The power considered in stand by mode is precautionary since the power is required to be below 0,5 W.

In consideration of the fact that over 80% of the products are distributed to the European market, a European mix (low voltage) has been considered.

End of Life

Considering the complexity and the lack of knowledge of the electric and electronic recycling channel and processes, the Eurostat 2021 data (Waste_electrical_and_electronic_equipment_2023-10) were used.

	ton	%
Total put on the market	13.511,60	
Total collected	4.903,16	36,3%
Total treatment	4.793,16	35,5%
Total recovered (incl. recycling, energy recovery...)	4.413,23	32,7%
Total reused and recycled	3.984,98	29,5%

Environmental Impacts

Evaluation of the environmental impact covers the following life cycle stages: raw materials, manufacturing, distribution, installation, use and end of life (EoL).

Software	Simapro 9.5
Database	Ecoinvent 3.9.1
Indicators set	Indicators for PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0
Data reference year	2022
Geographical representativeness	Europe
Energy models	Manufacturing: Italian residual mix – Medium Voltage Use: European mix – Low Voltage

Environmental Impact indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Climate change - total	kg,eq,CO2	6,71E+01	2,17E+01	2,17E-02	1,06E-03	4,52E+01	2,08E-01
Climate change - fossil fuels	kg,eq,CO2	6,67E+01	2,17E+01	2,17E-02	6,03E-04	4,49E+01	1,20E-01
Climate change - biogenics	kg,eq,CO2	3,61E-01	4,14E-02	1,13E-06	4,57E-04	2,31E-01	8,80E-02
Climate change - land use and land use transformation	kg,eq,CO2	1,47E-01	3,35E-02	7,33E-07	2,71E-08	1,14E-01	1,16E-05
Ozone depletion	kg,eq,CFC-11	2,81E-06	2,08E-06	2,98E-10	4,02E-12	7,33E-07	5,93E-10
Acidification (AP)	mole,eq,H+	4,01E-01	1,80E-01	1,76E-04	7,00E-07	2,21E-01	1,67E-04
Freshwater eutrophication	kg,eq,P	6,70E-02	2,55E-02	3,68E-07	4,40E-08	4,15E-02	5,29E-06
Marine aquatic eutrophication	kg,eq,N	6,91E-02	2,98E-02	4,98E-05	4,98E-05	1,12E-06	3,37E-04
Terrestrial eutrophication	mole,eq,N	6,51E-01	3,14E-01	5,42E-04	2,89E-06	3,35E-01	6,18E-04
Photochemical ozone formation	kg,eq,NM VOC	2,04E-01	9,58E-02	1,63E-04	1,12E-06	1,08E-01	2,39E-04
Depletion of abiotic resources - elements	kg,eq,Sb	6,88E-03	6,87E-03	1,08E-09	1,84E-11	2,78E-06	3,26E-09
Depletion of abiotic resources - fossil fuels	MJ	1,34E+03	2,88E+02	2,82E-01	2,15E-03	1,05E+03	5,88E-01
Water requirement	m ³ ,eq,deprivation	1,62E+01	5,74E+00	3,72E-04	3,23E-05	1,05E+01	2,67E-03
Emission of fine particles	incidence of diseases	1,83E-06	1,20E-06	1,55E-09	1,25E-11	6,21E-07	3,00E-09
Ionizing radiation, human health	kBq,eq,U235	3,25E+01	2,31E+00	5,22E-05	1,87E-06	3,02E+01	8,15E-04
Ecotoxicity (fresh water)	CTUe	6,56E+02	5,55E+02	1,47E-01	4,58E-03	9,99E+01	1,37E+00
Human toxicity, carcinogenic effects	CTUh	2,75E-08	2,03E-08	1,94E-12	1,37E-13	7,17E-09	1,61E-11
Human toxicity, non-carcinogenic effects	CTUh	1,14E-06	8,33E-07	1,66E-10	6,20E-12	3,01E-07	2,21E-09
Impacts related to land use/soil quality	-	1,77E+02	4,52E+01	9,66E-04	2,20E-04	1,32E+02	3,70E-02

Biogenic Carbon

Product	Kg C
Driver LED	0,00E+00
Packaging	4,07E-06

Resource Use Indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	2,58E+02	2,71E+01	4,23E-04	2,06E-05	2,31E+02	8,69E-03
Use of renewable primary energy resources used as raw materials	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2,58E+02	2,71E+01	4,23E-04	2,06E-05	2,31E+02	8,69E-03
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	1,41E+03	3,07E+02	2,99E-01	2,29E-03	1,10E+03	6,25E-01
Use of non-renewable primary energy resources used as raw materials	MJ	2,10E+00	2,10E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Direct Current Dimmable Electronic Driver

Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,41E+03	3,09E+02	2,99E-01	2,29E-03	1,10E+03	6,25E-01
Use of secondary materials	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water	m ³	1,60E+01	5,56E+00	3,69E-04	3,20E-05	1,04E+01	2,67E-03

Inventory Flows

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Total use of primary energy during the life cycle	MJ	1,66E+03	3,34E+02	3,00E-01	2,31E-03	1,33E+03	6,34E-01
Hazardous waste disposed of	kg	2,93E-03	2,93E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed of	kg	4,22E-01	1,68E-01	0,00E+00	9,09E-03	0,00E+00	2,45E-01
Radioactive waste disposed of	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,63E-01	1,69E-01	0,00E+00	7,40E-03	0,00E+00	8,69E-02
Materials for energy recovery	kg	2,42E-02	0,00E+00	0,00E+00	8,27E-04	0,00E+00	2,34E-02
Exported energy	MJ by energy vector	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Biogenic carbon content of the product	kg of C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Biogenic carbon content of the associated packaging	kg of C	4,07E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Extrapolation Coefficients

The extrapolation coefficients are given for the environmental impact of the FU, which is "Converting the energy necessary to power a luminaire in accordance with the reference usage scenario and during the reference service life of 1 unit".

To evaluate the environmental impact of another product covered by this PEP, multiply the impact figures by the corresponding factor:

PRODUCT - SERIES	A1-A5	B6	C2-C4
ATON	0,47	0,9	0,47
SUPERFLAT - SUPERSLIM	0,27	0,76	0,27
STC STM STF BULL	0,16	0,67	0,16
DC MAXI JOLLY - SMART 50-70 - MP-WIDESQUARE	1,00	1,13	1,00
DC EFU EFUR	0,53	0,72	0,53
DC JOLLY - MP 22-32-39- K2 - WIDESLIM - MD - WOLF	0,76	0,87	0,76
MICRO Z-UD	0,33	0,77	0,33
DC MINI JOLLY - MINI MD	0,43	0,76	0,43
DCC - BMU SERIES SLIM - DCCH - AR	0,27	0,84	0,27
STARLIGHT	1,00	1,00	1,00
PROFESSIONALE - SMART - SUPER PRO	0,57	1,06	0,57
PRO FLAT	0,46	1,19	0,46
KU2-KU3	0,28	0,64	0,28

Direct Current Dimmable Electronic Driver

LS	0,2	0,64	0,2
DC R - PUMA	0,45	0,72	0,45
MICRO MD	0,28	0,64	0,28
MICRO JOLLY - RD57 - MOONLIGHT - ACTUATOR-SED-SWITCH	0,24	0,67	0,24
DC W - WU-HPF-MWU	0,38	0,76	0,38

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	Supplemented by
Verifier accreditation N°: VH40	Information and reference documents: www.pep-ecopassport.org
Date of issue: 0 9 -2024	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006	
Internal <input type="radio"/> External <input checked="" type="radio"/>	
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)	
PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019	
The components of the present PEP may not be compared with components from any other program.	
Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"	
	