

Information on maintenance and disassembly of luminaires acc. to EU Regulation 245/2009

1. Maintenance

For efficient operation, luminaires and lamps must be serviced on a regular basis. This includes cleaning of components that influence lighting, e.g. diffusers and reflectors, in compliance with the instructions below. Lamps must be replaced as soon as they have reached the end of their service life or when they are unable to work properly. For each lamp type, the lamp manufacturers' specifications must be observed.

The degree of soiling depends on the environment. The following types of environments are distinguished, including some typical applications:

Type of environment	Typical application
Very clean	Clean-rooms, data centres, assembly workstations for electronic components; hospitals
Clean	Offices, educational facilities
Normal	Shops, laboratories, restaurants, warehouses, assembly bays, façades
Dirty	Steel mills, chemical industry, metal industry, wood processing

How to clean a luminaire

The cleaning of a luminaire depends on its design and the materials used. It is recommended to remove diffusers/covers and reflectors as well as lamps during the cleaning process to clean them separately.

- a) The cleaning procedures for **components that influence lighting** can be performed in accordance with Table 1. Please refer to Table 2 for the luminaires' design.
- b) The luminaire's external housing can be wiped with a damp cloth, unless specified otherwise. For instance, the surfaces of anodised sections can be cleaned using warm water mixed with a non-chlorine cleaning agent (e.g. dish detergent). Use a soft cloth or sponge only, and rinse off with clear water.
- c) Cleaning of lamps:
 - Fluorescent lamps are wiped with a damp or antistatic cloth.
 - High-pressure discharge lamps are wiped with an antistatic cloth.
 - All other lamps (e.g. halogen lamps) do not require any cleaning.

Should any doubts arise about how to properly clean the luminaires, in particular when it comes to cleaning reflectors and louvres, we recommend that you hire experts qualified to perform this job.

How to remove and fit components such as reflectors or diffusers and lamps is described in the installation instructions supplied with each luminaire.

Recommendation

Clean the luminaires at least every five years. Free-standing luminaires should be cleaned every year. In case of heavy soiling, the cleaning intervals should be reduced.

Safety instructions

- The luminaire must be switched off before cleaning.
- Make sure that no components carry live voltage.
- Allow lamps and the luminaire to cool down before replacing any components.

Attention:

The luminaire may only be connected and disconnected without mains voltage applied. In the case of LED luminaires, there is the additional risk of damage to the LEDs.

Table 1: Cleaning procedures for luminaire components that influence lighting (diffusers, reflectors, louvres, interior housings)

Luminaire components	Cleaning procedure	Cleaning details
Painted surfaces Plastic and glass covers Reflectors painted in white or matt silver	Wipe with soft damp cloth. Recommendation Recommendation: use slightly damp cleaning cloth (art. no. 60 800 118).	Do not use any cleaning additives, if possible. Always make sure that the components are resistant to chemicals and, in case of plastic components, use only alcohol-free cleaning agents suitable for plastic surfaces. Avoid dry cleaning or dry wiping.
Plastic reflectors Sputtered metal reflectors	In case of slight soiling. Wipe with cleaning cloth (art. no. 60 800 118) without any additives.	Wiping direction: from the top down (no circular wiping!!) Bleed off any static charges before cleaning. Apply only very gentle pressure when wiping (repeat cleaning, if necessary). Please note: Do not use any cleaning additives or, in case of plastic components, use only alcohol-free cleaning agents suitable for plastic surfaces; make sure that the components are resistant to chemicals. Avoid dry cleaning or dry wiping. Reflectors must not be cleaned in an ultrasonic bath. Place reflectors on a clean, soft pad and do not stack them.
Plastic reflectors Painted metal reflectors	In case of heavy soiling. Wipe with damp cleaning cloth (art. no. 60800118) dipped in water.	See above.
Anodised aluminium and metal reflectors	Wipe with soft cloth using isopropyl alcohol only. Immediately wipe off with cleaning cloth (art. no. 60 800 118).	Use isopropyl alcohol only – also known as isopropanol or alcohol isopropylicus (CAUTION – highly combustible!!) for cleaning. After treatment with isopropyl alcohol, immediately wipe off with soft cloth and completely remove any residues.
All plastic and metal reflectors	In case of slight soiling (dust): blow down using ionised air.	

Table 2: Overview: reflectors and diffusers/covers of luminaires

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Spotlights	ARCOS					x
Spotlights	ONICO				X	X
Spotlights	DISCUS HIT					x
Spotlights	DISCUS LED		x			
Spotlights	FACTOR LED				x	
Spotlights	IYON LED				x	
Spotlights	VIVO conv.					x
Spotlights	VIVO XS/ML LED				x	
Spotlights	XENO					x
Spotlights	SPIRIT					x
Spotlights	PROTON					x
Spotlights	UNO		x			
Spotlights	ACTO					x
Spotlights	ARCADE					x
Spotlights	PRIO		x			
Lighting systems	LIGHTTOOLS		x			x
Lighting systems	SUPERSYSTEM	Plastic lens	x			
Lighting systems	MICROTOOLS	Plastic lens	x			
Lighting systems	SYSTEMLED		x			
Lighting systems	STARFLEX		x			
Lighting systems	C1000 HIT					x
Lighting systems	C1000 LED		x			
Lighting systems	INTRO LED				x	
Lighting systems	CARDAN LED				x	
Façade luminaires	HEDERA		x			
Façade luminaires	HILIO		x			
Façade luminaires	CAPIX		x			
Façade luminaires	ELEVO		x			
Façade luminaires	Supersystem Outdoor	Plastic lens	x			

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Downlights	2LIGHT		x			
Downlights	2LIGHT MINI		x			
Downlights	PANOS INF/EVO	F faceted optic			x	
Downlights	PANOS INF/EVO	M matt painted optic		x		
Downlights	PANOS INF/EVO	G smooth optic			x	
Downlights	PANOS INF/EVO	L white painted optic		x		
Downlights	PANOS INF/EVO	GD gold matt optic			x	
Downlights	PANOS INF/EVO	BK black painted optic		x		
Downlights	PANOS INF/EVO	WW wallwasher	x		x	
Downlights	PANOS INF R200 High Lumen	F faceted optic + glass + G smooth optic	x		x	
Downlights	PANOS S					x
Downlights	PANOS M					x
Downlights	CRAYON	Cover ring WH, SM		x		
Downlights	CRAYON	Cover ring SI			x	
Downlights	CREDOS	white, reflector insert SI		x		
Downlights	CREDOS	Reflector insert SI			x	
Downlights	FD 1000 S II					x
Downlights	FD 1000 S LED	Lens cluster	x			
Downlights	FD 1000 LED				x	
Downlights	FD 1000 M					x
Downlights	FD 1000 II LF	F faceted optic			x	
Downlights	MICROS		x			
Downlights	Diamo					x
Recessed into floor	PASO II		x			
Wall-mounted/ceiling-mounted/pendant luminaires	CAELA		x			
Wall-mounted luminaires	LEDOS III		x			
Wall-mounted luminaires	ORILED		x			
Wall-mounted luminaires	KAVA					x
Wall-mounted luminaires	HELISSA		x			

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Wall-mounted luminaires	TOULOUPE		x			
Wall-mounted luminaires	OREA		x			
Wall-mounted luminaires	CAPA				x	
Wall-mounted luminaires	OPURA				x	
Wall-mounted luminaires	LIGHT FIELDS		X		x	
Wall-mounted luminaires	LANOS				x	
Wall-mounted luminaires	RHAPSODY		x			
Recessed luminaires	LIGHT FIELDS	MPO+	x		x	
Recessed luminaires	CAREENA	MPO+	x		x	
Recessed luminaires	MIREL	D Darklight louvre				x
Recessed luminaires	MIREL & MIREL LED (FEC LED)	C Comfort louvre				x
Recessed luminaires	MIREL	L white louvre		x		
Recessed luminaires	MIREL REO, FEO & FEO LED	O Opal diffuser	x			
Recessed luminaires	MIREL REP & FEP	P Microprism cover	x			
Recessed luminaires	MIREL evolution Lens	Lens optic	x			
Recessed luminaires	MIREL evolution Opal	O Opal cover	x			
Recessed luminaires	ML IV	M microprisms	x			x
Recessed luminaires	ML IV	B diffuser	x			x
Recessed luminaires	ML IV	C louvre optic				x
Recessed luminaires	ML V	M Brightness optic	x		x	
Recessed luminaires	ML V	H HighDefinition optic	x		x	
Recessed luminaires	ML V	V MicroVane optic	x		x	x
Recessed luminaires	SLOTLIGHT II T16 & LED / SLOTLIGHT Infinity / SLOTLIGHT Infinity slim	PMMA, LRO, PC WW (reflector)	x			X
Surface-mounted/pendant luminaires	VAERO	MPO+	x			x
Surface-mounted/pendant luminaires	AERO II	MPO+	x		x	x
Surface-mounted/pendant luminaires	OREA	SLC Waveguide	x			x
Surface-mounted/pendant luminaires	LIGHT FIELDS	MPO+	x			

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Surface-mounted/pendant luminaires	ECOOS		x			
Surface-mounted/pendant luminaires	CAREENA	MPO+	x		x	
Surface-mounted/pendant luminaires	CIELOS T16	Glass cover	x			
Surface-mounted/pendant luminaires	CIELOS LED	Glass cover	x			
Surface-mounted/pendant luminaires	SCONFINE		x			
Surface-mounted/pendant luminaires	LQ CHANDELIER			x		
Surface-mounted/pendant luminaires	ONDARIA	PMMA	x			
Surface-mounted/pendant luminaires	ONDARIA2	PMMA	x			
Surface-mounted/pendant luminaires	ML IV	M microprisms	x			x
Surface-mounted/pendant luminaires	ML IV	B diffuser	x			x
Surface-mounted/pendant luminaires	ML IV	C louvre optic				x
Surface-mounted/pendant luminaires	ELEEA	D Darklight louvre				x
Surface-mounted/pendant luminaires	ELEEA	LRO optic	x			
Surface-mounted/pendant luminaires	CLARIS II	MD Darklight			x	
Surface-mounted/pendant luminaires	CLARIS II	MC cell louvre			x	
Surface-mounted/pendant luminaires	CLARIS II	LRO optic	x			
Surface-mounted/pendant luminaires	CLARIS II	WW wallwasher				x
Surface-mounted/pendant luminaires	SPHEROS T16	D Darklight louvre				x
Surface-mounted/pendant luminaires	SPHEROS T16	C Comfort louvre				x
Surface-mounted/pendant luminaires	RTX II	C Comfort louvre				x
Surface-mounted/pendant luminaires	RTX II	WW wallwasher				x
Surface-mounted/pendant	MIRAL	D Darklight louvre				x

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
luminaires						
Surface-mounted/pendant luminaires	MIRAL	C Comfort louvre				x
Surface-mounted/pendant luminaires	MIRAL	L white louvre		x		
Surface-mounted/pendant luminaires	MIREL evolution Lens	Lens optic	x			
Surface-mounted/pendant luminaires	FREELINE	C Comfort louvre				x
Surface-mounted/pendant luminaires	FREELINE	MP micropyramidal optic	x			
Surface-mounted/pendant luminaires	LINCOR	Cell optic	X		X	
Surface-mounted/pendant luminaires	LINCOR	LRO optic	X			
Surface-mounted/pendant luminaires	SEQUENCE	advancedOptics® (LED lens + opal)	X			
Surface-mounted/pendant luminaires	AXON	advancedOptics® (LED lens + opal)	x			
Free-standing luminaires	CAPA		x			
Free-standing luminaires	OPURA		x			
Free-standing luminaires	LIGHT FIELDS	MPO+	X		x	
Free-standing luminaires	MINIUM LITE				x	
Free-standing luminaires	KAREA		x			
Free-standing luminaires	LANOS		x			
Free-standing luminaires	SFERA		x			
Free-standing luminaires	LINETIK		x		x	
Continuous row system	TECTON	Open light distribution		x		
Continuous row system	TECTON	Continuous-row luminaire	x			
Continuous row system	TECTON	Louvre, reflector white/silver		x		
Continuous row system	TECTON	Specular reflector optic				x
Continuous row system	TECTON	Shelf optic				x
Continuous row system	TECTON	Shop reflector		x		
Continuous row system	TECTON	Wallwasher				x
Continuous row system	TECTON	Aluminium louvre				x

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Continuous row system	TECTON	Mellow Light decorative optic	x			
Continuous row system	TECTON	Dir/Ind decorative optic				x
Continuous row system	TECTON	Slimline decorative optic	x			
Continuous row system	TECTON	ECOOS decorative optic	x			
Continuous row system	TECTON	TECTON C LED	x			
Continuous row system	TECTON	TECTON BASIC LED	x			
Continuous row system	TECTON	TECTON MPO LED	x			
Continuous row system	ZX2	white		x		
Continuous row system	ZX2	C Comfort louvre				x
Continuous row system	ZX2	GRS, GRL, GRC louvre				x
Continuous row system	ZX2	Specular reflectors				x
Continuous row system	METRUM LED	WB, NB	x			
Continuous row system	METRUM T16	Open-light distribution		x		
Continuous row system	METRUM T16	R, RGL		x		
Continuous row system	METRUM T16	Specular optics and shop				x
Continuous row system	METRUM T16	IP50	x			
Continuous row system	METRUM T16	RE			x	
Batten luminaire	LINARIA	Open light distribution		x		
Batten luminaire	LINARIA	Diffuser	x			
Batten luminaire	ZE	Open light distribution		x		
Batten luminaire	ZE	Wall-mounted optic	x			
Batten luminaire	ZE	Diffuser	x			
High-bay luminaires	SOLINA	RKF plastic reflector			x	
High-bay luminaires	SOLINA	RAP aluminium reflector				x
High-bay luminaires	SOLINA	RKID reflector			x	
High-bay luminaires	COPA	RA aluminium reflector				x
High-bay luminaires	COPA	RAP aluminium reflector				x
High-bay luminaires	COPA	RKID reflector			x	
High-bay luminaires	COPA A		x			
High-bay luminaires	VALUEA		x			

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
High-bay luminaires	CRAFT		x			
Projector-mirror system	MIROS projector		x			
Projector-mirror system	MIROS mirror					x
Luminaires with higher degree of protection	SLOTLIGHT II IP54 / SLOTLIGHT Infinity IP54	PMMA, PC WW (reflector)	x			x
Luminaires with higher degree of protection	RAIN		x			
Luminaires with higher degree of protection	TOL		x			
Luminaires with higher degree of protection	TUBILUX		x			
Luminaires with higher degree of protection	CLEAN		x			
Luminaires with higher degree of protection	ZX2-IP		x			
Luminaires with higher degree of protection	PERLUCE	PMMA opal or clear	x			Perluce LRO Perluce D Perluce WW
Luminaires with higher degree of protection	CHIARO		x			
Luminaires with higher degree of protection	SCUBA		x			
Luminaires with higher degree of protection	ACQUO II		x			
Luminaires with higher degree of protection	KXA KXB		x			
Emergency lighting	RESCLITE	PC lens PC lens + reflector (escape and wall) PC lens + PC cowl IP65)	x			(x)
Emergency lighting	ARTSIGN	Acrylic glass panel	x			
Emergency lighting	ERGOSIGN	PC pictogram	x			
Emergency lighting	COMSIGN 150	Acrylic glass panel	x			
Emergency lighting	PURESIGN 150	PC pictogram + light guide panel	x			
Emergency lighting	CROSSIGN 110 / 160	PC pictogram + lens	x			
Emergency lighting	ECOSIGN	PC pictogram	x			

Type of luminaire	Range	Optics	Plastic or glass diffuser	Reflectors painted in white or matt silver	Plastic reflectors, sputtered metal reflectors	Anodised aluminium and metal reflectors
Emergency lighting	SQUARESIGN 300+ / 600	PC pictogram	x			
Emergency lighting	CUBESIGN 210 / 450	PC pictogram	x			
Single-bed luminaires	BELIA		x			
Single-bed luminaires	CUREA		x			
Single-bed luminaires	PURELINE II		x			
Medical supply units	PURELINE II		x			
Medical supply units	CONBOARD		x			
Medical supply units	IMWS		x			
Medical supply units	VE-W		x			
Medical supply units	VE-L		x			
Medical supply units	VE-F		x			
Medical supply units	CONCAVE		x			
Medical supply units	SINUS		x			
Façade luminaires	PYLAS		x			
Façade luminaires	IKONO		x			
Façade luminaires	SKENA		x			
Façade luminaires	PAN		x			
Façade luminaires	APHRODITE		x			
Mast luminaires	Supersystem Outdoor	Plastic lens	x			

2. Disassembly

Before disposing of a luminaire, lamps and batteries, if any, must be removed. For removal, reverse the installation procedure as described in the installation instructions.

Then dispose of lamps, batteries and luminaires using the national disposal system as prescribed by WEEE.