

# CPC COOPERATIVE PATENT CLASSIFICATION

## F21V DETAILS OF LIGHTING DEVICES, OF GENERAL APPLICATION

### NOTES

1. Groups [F21V 1/00-F21V 14/00](#) cover aspects related to light emission or distribution. Groups [F21V 15/00-F21V 31/00](#) cover aspects not related to light emission or distribution.
2. Details of non-electric lighting devices or systems are classified in groups [F21V 35/00-F21V 37/00](#) only if a special adaptation related to the use of a non-electric light source is of interest.
3. In this subclass, it is desirable to add the indexing codes of subclasses [F21W](#) and [F21Y](#)

### WARNING

The following IPC groups are not used in the CPC system. Subject matter covered by these groups is classified in the following CPC groups:

[F21V 8/00](#)

covered by

[G02B 6/00](#)

### {Aspects related to light emission or distribution}

#### **1/00 Shades for light sources {, i.e. lampshades for table, floor, wall or ceiling lamps}**

- 1/02 . Frames
- 1/04 . . rigid ([F21V 1/08](#) takes precedence)
- 1/06 . . foldable or collapsible
- 1/08 . . adjustable
- 1/10 . Rotating shades
- 1/12 . Composite shades {, i.e. shades being made of distinct parts}
- 1/14 . Covers for frames; Frameless shades
- 1/143 . . {The cover being attached to a supporting lampshade frame}
- 1/146 . . {Frameless shades}
- 1/16 . . characterised by the material
- 1/18 . . . the material being paper
- 1/20 . . . the material being glass
- 1/22 . . . the material being plastics
- 1/24 . . . the material being metal
- 1/26 . Manufacturing shades

#### **3/00 Globes; Bowls; Cover glasses (with refracting properties [F21V 5/00](#); with reflecting properties [F21V 7/00](#); characterised by cooling arrangements [F21V 29/506](#))**

- 3/02 . characterised by the shape
- 3/023 . . {Chinese lanterns; Balloons}
- 3/026 . . . {being inflatable}
- 3/04 . characterised by the material; characterised by surface treatments or coatings
- 3/0409 . . {characterised by the material}
- 3/0418 . . . {the material being glass}
- 3/0427 . . . . {the material diffusing light, e.g. translucent glass}
- 3/0436 . . . {the material being plastics}
- 3/0445 . . . . {the material diffusing light, e.g. translucent plastics}
- 3/0454 . . . {comprising air or water bubbles, e.g. foamed materials}
- 3/0463 . . . {comprising fluorescent or light-storing materials}
- 3/0472 . . {Coatings}

3/0481 . . . {provided with fluorescent or light-storing materials}

3/049 . . {Patterns or structured surfaces for diffusing light, e.g. frosted surfaces}

#### **5/00 Refractors for light sources (characterised by cooling arrangements [F21V 29/504](#))**

- 5/002 . {using micro-optical elements for redirecting or diffusing light}
- 5/003 . . {using holograms}
- 5/004 . . {using micro-lenses}
- 5/005 . . {using micro-prisms}
- 5/006 . {applied to portable lighting devices}
- 5/007 . {Array of lenses or refractors for a cluster of light sources, e.g. for arrangement of multiple light sources in one plane ([combination of two or more refractors \[F21V 5/008\]\(#\)](#))}
- 5/008 . {Combination of two or more successive refractors along an optical axis}
- 5/02 . of prismatic shape ([F21V 5/04](#) takes precedence)
- 5/04 . of lens shape
- 5/041 . . {Ball lenses}
- 5/043 . . {the lens having cylindrical faces, e.g. rod lenses, toric lenses}
- 5/045 . . {the lens having discontinuous faces, e.g. Fresnel lenses}
- 5/046 . . {the lens having a rotationally symmetrical shape about an axis for transmitting light in a direction mainly perpendicular to this axis, e.g. ring or annular lens with light source disposed inside the ring}
- 5/048 . . {the lens being a simple lens adapted to cooperate with a point-like source for emitting mainly in one direction and having an axis coincident with the main light transmission direction, e.g. convergent or divergent lenses, plano-concave or plano-convex lenses}
- 5/06 . Hanging lustres for chandeliers
- 5/08 . producing an asymmetric light distribution
- 7/00 Reflectors for light sources (characterised by cooling arrangements [F21V 29/505](#))**
- 7/0008 . {providing for indirect lighting}

7/0016	<ul style="list-style-type: none"> <li>• {on lighting devices that also provide for direct lighting, e.g. by means of independent light sources, by splitting of the light beam, by switching between both lighting modes}</li> </ul>	11/00	<b>Screens not covered by groups <a href="#">F21V 1/00</a>, <a href="#">F21V 3/00</a>, <a href="#">F21V 7/00</a> or <a href="#">F21V 9/00</a> (characterised by cooling arrangements <a href="#">F21V 29/502</a>)</b>
7/0025	<ul style="list-style-type: none"> <li>• {Combination of two or more reflectors for a single light source (array of reflectors for a cluster of light sources <a href="#">F21V 7/0083</a>)}</li> </ul>	11/02	<ul style="list-style-type: none"> <li>• using parallel laminae or strips, e.g. of Venetian-blind type (<a href="#">F21V 11/06</a> takes precedence)</li> </ul>
7/0033	<ul style="list-style-type: none"> <li>• {with successive reflections from one reflector to the next or following}</li> </ul>	11/04	<ul style="list-style-type: none"> <li>• adjustable</li> </ul>
7/0041	<ul style="list-style-type: none"> <li>• {for avoiding direct view of the light source or to prevent dazzling}</li> </ul>	11/06	<ul style="list-style-type: none"> <li>• using crossed laminae or strips, (e.g. grid-shaped louvers); using lattices or honeycombs</li> </ul>
7/005	<ul style="list-style-type: none"> <li>• {with an elongated shape to cooperate with linear light sources}</li> </ul>	11/065	<ul style="list-style-type: none"> <li>• {adjustable}</li> </ul>
7/0058	<ul style="list-style-type: none"> <li>• {adapted to cooperate with light sources of shapes different from point-like or linear, e.g. circular light sources}</li> </ul>	11/08	<ul style="list-style-type: none"> <li>• using diaphragms containing one or more apertures</li> </ul>
7/0066	<ul style="list-style-type: none"> <li>• {specially adapted to co operate with point like light sources; specially adapted to co operate with light sources the shape of which is unspecified (<a href="#">F21V 7/16</a> - <a href="#">F21V 7/22</a> take precedence)}</li> </ul>	11/10	<ul style="list-style-type: none"> <li>• of iris type</li> </ul>
7/0075	<ul style="list-style-type: none"> <li>• {for portable lighting devices}</li> </ul>	11/12	<ul style="list-style-type: none"> <li>• of slot type</li> </ul>
7/0083	<ul style="list-style-type: none"> <li>• {Array of reflectors for a cluster of light sources, e.g. arrangement of multiple light sources in one plane (combination of two or more reflectors <a href="#">F21V 7/0025</a>)}</li> </ul>	11/14	<ul style="list-style-type: none"> <li>• with many small apertures</li> </ul>
7/0091	<ul style="list-style-type: none"> <li>• {using total internal reflection}</li> </ul>	11/16	<ul style="list-style-type: none"> <li>• using sheets without apertures, e.g. fixed</li> </ul>
7/04	<ul style="list-style-type: none"> <li>• Optical design</li> </ul>	11/18	<ul style="list-style-type: none"> <li>• movable, e.g. flaps, slides</li> </ul>
7/041	<ul style="list-style-type: none"> <li>• {with conical or pyramidal surface}</li> </ul>	11/183	<ul style="list-style-type: none"> <li>• {pivotal}</li> </ul>
7/043	<ul style="list-style-type: none"> <li>• {with cylindrical surface}</li> </ul>	11/186	<ul style="list-style-type: none"> <li>• {slidable}</li> </ul>
7/045	<ul style="list-style-type: none"> <li>• {with spherical surface}</li> </ul>	13/00	<b>Producing particular characteristics or distribution of the light emitted by means of a combination of elements specified in two or more of main groups <a href="#">F21V 1/00</a> <a href="#">F21V 11/00</a> (by means of a combination of two or more elements covered by a single one of main groups <a href="#">F21V 1/00</a> <a href="#">F21V 11/00</a>, see the relevant group; changing the characteristics or distribution of the light emitted by adjustment of parts <a href="#">F21V 14/00</a>)</b>
7/046	<ul style="list-style-type: none"> <li>• {with involute curvature}</li> </ul>	13/02	<ul style="list-style-type: none"> <li>• Combinations of only two kinds of elements</li> </ul>
7/048	<ul style="list-style-type: none"> <li>• {with facets structure}</li> </ul>	13/04	<ul style="list-style-type: none"> <li>• the elements being reflectors and refractors {(for vehicle rear lights <a href="#">F21S 48/24</a>)}</li> </ul>
7/05	<ul style="list-style-type: none"> <li>• plane</li> </ul>	13/045	<ul style="list-style-type: none"> <li>• {for portable lighting devices}</li> </ul>
7/06	<ul style="list-style-type: none"> <li>• with parabolic curvature</li> </ul>	13/06	<ul style="list-style-type: none"> <li>• a reflector being rotatable</li> </ul>
7/07	<ul style="list-style-type: none"> <li>• with hyperbolic curvature</li> </ul>	13/08	<ul style="list-style-type: none"> <li>• the elements being reflectors and filters</li> </ul>
7/08	<ul style="list-style-type: none"> <li>• with elliptical curvature</li> </ul>	13/10	<ul style="list-style-type: none"> <li>• the elements being reflectors and screens</li> </ul>
7/09	<ul style="list-style-type: none"> <li>• with a combination of different curvatures</li> </ul>	13/12	<ul style="list-style-type: none"> <li>• Combinations of only three kinds of elements</li> </ul>
7/10	<ul style="list-style-type: none"> <li>• Construction</li> </ul>	13/14	<ul style="list-style-type: none"> <li>• the elements being reflectors, refractors, and filters</li> </ul>
7/16	<ul style="list-style-type: none"> <li>• with provision for adjusting the curvature</li> </ul>	14/00	<b>Changing the characteristics or distribution of the light emitted by adjustment of parts {or by interposition of elements with electrically controlled variable light transmissivity} (reflectors with provision for adjusting the curvature <a href="#">F21V 7/16</a>; light filters with provision for variation of colour or intensity <a href="#">F21V 9/10</a>; screens using adjustable parallel laminae or strips, e.g. of Venetian-blind type, <a href="#">F21V 11/04</a>; screens using iris-type diaphragms <a href="#">F21V 11/10</a>; screens using movable sheets without apertures, e.g. flaps or slides, <a href="#">F21V 11/18</a>; adjustable mountings for lighting devices <a href="#">F21V 21/14</a>)</b>
7/18	<ul style="list-style-type: none"> <li>• with provision for folding or collapsing</li> </ul>	14/003	<ul style="list-style-type: none"> <li>• {by interposition of elements with electrically controlled variable light transmissivity, e.g. liquid crystal elements or electrochromic devices (liquid crystal elements <a href="#">G02F 1/13</a>)}</li> </ul>
7/22	<ul style="list-style-type: none"> <li>• characterised by the material; characterised by surface treatments or coatings</li> </ul>	14/006	<ul style="list-style-type: none"> <li>• {by means of optical elements, e.g. films, filters or screens, being rolled up around a roller}</li> </ul>
9/00	<b>Light filters (coloured shades <a href="#">F21V 1/00</a>; characterised by cooling arrangements <a href="#">F21V 29/502</a>); Selection of luminescent materials for light screens</b>	14/02	<ul style="list-style-type: none"> <li>• by movement of light sources {(in vehicle head lamps <a href="#">F21S 48/1742</a>)}</li> </ul>
9/02	<ul style="list-style-type: none"> <li>• for simulating daylight (<a href="#">F21V 9/04</a>, <a href="#">F21V 9/06</a>, <a href="#">F21V 9/16</a> take precedence)</li> </ul>	14/025	<ul style="list-style-type: none"> <li>• {in portable lighting devices}</li> </ul>
9/04	<ul style="list-style-type: none"> <li>• for filtering out infra-red radiation (using liquid-filled chambers <a href="#">F21V 9/12</a>)</li> </ul>	14/04	<ul style="list-style-type: none"> <li>• by movement of reflectors {(in vehicle head lamps <a href="#">F21S 48/1757</a>)}</li> </ul>
9/06	<ul style="list-style-type: none"> <li>• for filtering out ultra-violet radiation (<a href="#">F21V 9/16</a> takes precedence)</li> </ul>	14/045	<ul style="list-style-type: none"> <li>• {in portable lighting devices}</li> </ul>
9/08	<ul style="list-style-type: none"> <li>• for producing coloured light, e.g. monochromatic; for reducing intensity of light (<a href="#">F21V 9/16</a> takes precedence)</li> </ul>	14/06	<ul style="list-style-type: none"> <li>• by movement of refractors {(in vehicle head lamps <a href="#">F21S 48/1721</a>)}</li> </ul>
9/083	<ul style="list-style-type: none"> <li>• {for portable lighting devices}</li> </ul>	14/065	<ul style="list-style-type: none"> <li>• {in portable lighting devices}</li> </ul>
9/10	<ul style="list-style-type: none"> <li>• with provision for variation of the colour or intensity (<a href="#">F21V 9/12</a> takes precedence)</li> </ul>		
9/12	<ul style="list-style-type: none"> <li>• with liquid-filled chambers</li> </ul>		
9/14	<ul style="list-style-type: none"> <li>• for producing polarised light</li> </ul>		
9/16	<ul style="list-style-type: none"> <li>• Selection of luminescent materials for screens</li> </ul>		

- 14/08 . by movement of the screens {or filters}
- 14/085 . . {in portable lighting devices}

**{Aspects not related to light emission or distribution, e.g. fittings}**

**15/00 Protecting lighting devices from damage**

(protection from thermal damage [F21V 29/00](#); gas-tight or water-tight arrangements [F21V 31/00](#))

- 15/005 . {Measures against vandalism, stealing or tampering ([F21V 15/02](#), [F21V 15/04](#) take precedence)}
- 15/01 . Housings, e.g. material or assembling of housing parts ([F21V 15/02](#) takes precedence {housings forming signs or letters [G09F 13/04](#)})
- 15/012 . . {Housings with variable shape or dimensions, e.g. by means of elastically deformable materials or by movement of parts forming telescopic extensions of the housing body}
- 15/013 . . {the housing being an extrusion}
- 15/015 . . Devices for covering joints between adjacent lighting devices; End coverings
- 15/02 . Cages
- 15/04 . Resilient mountings, e.g. shock absorbers (in general [F16F 15/04](#) {shock absorbing devices of vehicle headlamp housings [B60Q 1/0491](#)})

**17/00 Fastening of component parts of lighting devices, e.g. shades, globes, refractors, reflectors, filters, screens, grids or protective cages (of light sources or light holders [F21V 19/00](#))**

- 17/002 . {with provision for interchangeability, i.e. component parts being especially adapted to be replaced by another part with the same or a different function ([F21V 17/10](#) takes precedence)}
- 17/005 . {with keying means, i.e. for enabling the assembling of component parts in distinctive positions, e.g. for preventing wrong mounting}
- 17/007 . {with provision for shipment or storage}
- 17/02 . with provision for adjustment ([F21V 17/04](#) - [F21V 17/08](#) take precedence)
- 17/04 . the fastening being onto or by the light source
- 17/06 . the fastening being onto or by the lampholder
- 17/08 . onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards
- 17/10 . characterised by specific fastening means or way of fastening ([F21V 17/02](#) - [F21V 17/08](#) take precedence)
- 17/101 . . {permanently, e.g. welding, gluing or riveting}
- 17/102 . . {using gravity or suction}
- 17/104 . . {using feather joints, e.g. tongues and grooves, with or without friction}
- 17/105 . . {using magnets}
- 17/107 . . {using hinge joints}
- 17/108 . . {using hook and loop-type fasteners}
- 17/12 . . by screwing
- 17/14 . . Bayonet-type fastening
- 17/16 . . by deformation of parts; Snap action mounting
- 17/162 . . . {the parts being subjected to traction or compression, e.g. coil springs}
- 17/164 . . . {the parts being subjected to bending, e.g. snap joints}
- 17/166 . . . {the parts being subjected to torsion, e.g. spiral springs}
- 17/168 . . . {the parts being resilient rings acting substantially isotropically, e.g. split rings}
- 17/18 . . Latch-type fastening, e.g. with rotary action

- 17/20 . . by toggle-action levers

**19/00 Fastening of light sources or lamp holders**

(fastening electric light source solely by the coupling device [H01R 33/00](#); {special means for attaching candle to candle holder [F21V 35/003](#)})

- 19/0005 . {of sources having contact pins, wires or blades, e.g. pinch sealed lamp ([F21V 19/001](#) takes precedence)}
- 19/001 . {the light sources being semiconductor devices, e.g. LEDs}
- 19/0015 . . {Fastening arrangements intended to retain light sources}
- 19/002 . . . {the fastening means engaging the encapsulation or the packaging of the semiconductor device}
- 19/0025 . . . {the fastening means engaging the conductors of the light source, i.e. providing simultaneous fastening of the light sources and their electric connections}
- 19/003 . . {Fastening of light source holders, e.g. of circuit boards or substrates holding light sources}
- 19/0035 . . . {the fastening means being capable of simultaneously attaching of an other part, e.g. a housing portion or an optical component}
- 19/004 . . . {by deformation of parts or snap action mountings, e.g. using clips}
- 19/0045 . . . {by tongue and groove connections, e.g. dovetail interlocking means fixed by sliding}
- 19/005 . . . {by permanent fixing means, e.g. gluing, riveting or embedding in a potting compound}
- 19/0055 . . . {by screwing}
- 19/006 . {of point-like light sources, e.g. incandescent or halogen lamps, with screw-threaded or bayonet base (of sources having contact pins, wires or blades [F21V 19/0005](#); of LEDs or sources mounted on printed-circuit board [F21V 19/001](#))}
- 19/0065 . . {at least one conductive element acting as a support means, e.g. spring-mounted contact plate in a bayonet base}
- 19/007 . . {the support means engaging the vessel of the source}
- 19/0075 . {of tubular light sources, e.g. ring-shaped fluorescent light sources}
- 19/008 . . {of straight tubular light sources, e.g. straight fluorescent tubes, soffit lamps}
- 19/0085 . . . {at least one conductive element acting as a support means, e.g. resilient contact blades, piston-like contact}
- 19/009 . . . {the support means engaging the vessel of the source}
- 19/0095 . . {of U-shaped tubular light sources, e.g. compact fluorescent tubes}
- 19/02 . with provision for adjustment, e.g. for focusing
- 19/04 . with provision for changing light source, e.g. turret {(auxiliary devices for cleaning, placing, or removing incandescent lamps [H01K 3/32](#), fluorescent lamps [H01J 9/006](#))}

- 19/042 . . {the light source being a semiconductor, e.g. an LED} (Frozen)
- WARNING**
- Group [F21V 19/042](#) is no longer used for the classification of documents as of August 1, 2016. The content of this group is being reclassified into groups [F21K 9/00](#), [F21K 9/20](#), [F21K 9/23](#), [F21K 9/232](#), [F21K 9/233](#), [F21K 9/235](#), [F21K 9/237](#), [F21K 9/238](#), [F21K 9/27](#), [F21K 9/272](#), [F21K 9/275](#), [F21K 9/278](#), [F21K 9/60](#), [F21K 9/61](#), [F21K 9/62](#), [F21K 9/64](#), [F21K 9/65](#), [F21K 9/66](#), [F21K 9/68](#), [F21K 9/69](#), [F21K 9/90](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 19/045 . . {the light source being a semiconductor mounted on a holder, e.g. a circuit board} (Frozen)
- WARNING**
- Group [F21V 19/045](#) is no longer used for the classification of documents as of August 1, 2016. The content of this group is being reclassified into groups [F21K 9/00](#), [F21K 9/20](#), [F21K 9/23](#), [F21K 9/232](#), [F21K 9/233](#), [F21K 9/235](#), [F21K 9/237](#), [F21K 9/238](#), [F21K 9/27](#), [F21K 9/272](#), [F21K 9/275](#), [F21K 9/278](#), [F21K 9/60](#), [F21K 9/61](#), [F21K 9/62](#), [F21K 9/64](#), [F21K 9/65](#), [F21K 9/66](#), [F21K 9/68](#), [F21K 9/69](#), [F21K 9/90](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 19/047 . . {by using spare light sources comprised in or attached to the lighting device and being intended to replace a defect light source by manual mounting}
- 19/06 . . Fastening incandescent mantles or other incandescent bodies to lamp parts; Suspension devices for incandescent mantles or other incandescent bodies (arrangements of mantles or other incandescent bodies on burners [F21V 36/00](#))
- 21/00 Supporting, suspending, or attaching arrangements for lighting devices** ([F21V 17/00](#), [F21V 19/00](#) take precedence; arrangement of signalling or lighting devices, the mounting or supporting thereof or circuits therefor, for vehicles in general [B60Q](#), stands for supporting apparatus or articles in general [F16M 11/00](#)); **Hand grips**
- 21/002 . . making direct electrical contact, e.g. by piercing ([F21V 21/35](#) takes precedence)
- 21/005 . . for several lighting devices in an end-to-end arrangement, i.e. light tracks
- 21/008 . . Suspending from a cable or suspension line
- 21/02 . . Wall, ceiling, or floor bases; Fixing pendants or arms to the bases ([F21V 21/08](#) takes precedence; bases for movable standing lamps [F21V 21/06](#))
- 21/025 . . {Elongated bases having a U-shaped cross section}
- 21/03 . . Ceiling bases, e.g. ceiling roses ([F21V 21/04](#) takes precedence)
- 21/04 . . Recessed bases
- 21/041 . . . {Mounting arrangements specially adapted for false ceiling panels or partition walls made of plates ([F21V 21/047](#) takes precedence)}
- 21/042 . . . . {using clamping means, e.g. for clamping with panel or wall}
- 21/043 . . . . . {actuated by screwing}
- 21/044 . . . . . {with elastically deformable elements, e.g. spring tongues}
- 21/045 . . . . . {being tensioned by translation of parts, e.g. by pushing or pulling}
- 21/046 . . . . . {being tensioned by rotation of parts}
- 21/047 . . . {Mounting arrangements with fastening means engaging the inner surface of a hole in a ceiling or wall, e.g. for solid walls or for blind holes}
- 21/048 . . . {Mounting arrangements for fastening lighting devices to false ceiling frameworks}
- 21/049 . . . {Mounting arrangements for attaching lighting devices to the ceiling, the lighting devices being recessed in a false or stretched ceiling}
- 21/06 . . Bases for movable standing lamps; Fixing standards to the bases ([F21V 21/08](#) takes precedence)
- 21/08 . . Devices for easy attachment to any desired place, e.g. clip, clamp, magnet
- 21/0808 . . {Adhesive means}
- 21/0816 . . {Strap fasteners, e.g. fasteners with a buckle}
- 21/0824 . . {Ground spikes}
- 21/0832 . . {Hook and loop-type fasteners}
- 21/084 . . Head fittings
- 21/088 . . Clips; Clamps
- 21/0885 . . . {for portable lighting devices}
- 21/092 . . Suction devices
- 21/0925 . . . {for portable lighting devices}
- 21/096 . . Magnetic devices
- 21/0965 . . . {for portable lighting devices}
- 21/10 . . Pendants, arms, or standards; Fixing lighting devices to pendants, arms, or standards ([adjustable mounting F21V 21/14](#); construction of posts not peculiar to use with lighting devices [E04H 12/00](#))
- 21/104 . . Pendants
- 21/108 . . Arms
- 21/112 . . Fixing lighting devices to pendants ([F21V 21/002](#) takes precedence)
- 21/116 . . Fixing lighting devices to arms or standards ([F21V 21/002](#) takes precedence)
- 21/12 . . capable of being elongated or shortened by the insertion or removal of intermediate pieces
- 21/13 . . Spring-loaded poles fixed at both ends
- 21/14 . . Adjustable mountings
- 21/145 . . {for portable lighting devices}
- 21/15 . . specially adapted for power operation, e.g. by remote control
- 21/16 . . using wires or cords
- 21/18 . . . operated by springs
- 21/20 . . . operated by weights
- 21/22 . . telescopic
- 21/24 . . Lazy-tongs
- 21/26 . . Pivoted arms
- 21/28 . . . adjustable in more than one plane
- 21/29 . . . . employing universal joints
- 21/30 . . Pivoted housings or frames



21/32	. . Flexible tubes	23/008	. . . {the casing being outside the housing of the lighting device}
21/34	. Supporting elements displaceable along a guiding element {(telescopic mounting of lighting devices <a href="#">F21V 21/22</a> )}	23/009	. . . {the casing being inside the housing of the lighting device}
21/35	. . with direct electrical contact between the supporting element and electric conductors running along the guiding element	23/02	. the elements being transformers, impedances {or power supply units, e.g. a transformer with a rectifier}
21/36	. Hoisting or lowering devices, e.g. for maintenance	23/023	. . {Power supplies in a casing ( <a href="#">F21V 23/003</a> takes precedence)}
21/38	. . with a cable	23/026	. . {Fastening of transformers or ballasts}
21/40	. Hand grips	23/04	. the elements being switches (safety devices <a href="#">F21V 25/00</a> )
21/403	. . {for operation or dentist lamps}	23/0407	. . {for flashing}
21/406	. . {for portable lighting devices}	23/0414	. . {specially adapted to be used with portable lighting devices}
<b>23/00</b>	<b>Arrangement of electric circuit elements in or on lighting devices {(characterised by cooling arrangements <a href="#">F21V 29/508</a>)}</b>	23/0421	. . . {the switch being part of, or disposed on the tail cap portion thereof}
23/001	. {the elements being electrical wires or cables}	23/0428	. . . {the switch being part of, or disposed on the lamp head portion thereof}
23/002	. . {Arrangements of cables or conductors inside a lighting device, e.g. means for guiding along parts of the housing or in a pivoting arm}	23/0435	. . {activated by remote control means}
23/003	. {the elements being electronics drivers or controllers for operating the light source, e.g. for a LED array}	23/0442	. . {activated by means of a sensor, e.g. motion or photodetectors}
	<b><u>WARNING</u></b>	23/045	. . . {the sensor receiving a signal from a remote controller}
	Group <a href="#">F21V 23/003</a> is impacted by reclassification into groups <a href="#">F21K 9/238</a> and <a href="#">F21K 9/278</a> .	23/0457	. . . {the sensor sensing the operating status of the lighting device, e.g. to detect failure of a light source or to provide feedback to the device}
	All groups listed in this Warning should be considered in order to perform a complete search.	23/0464	. . . {the sensor sensing the level of ambient illumination, e.g. dawn or dusk sensors}
23/004	. . {arranged on a substrate, e.g. a printed circuit board}	23/0471	. . . {the sensor detecting the proximity, the presence or the movement of an object or a person}
	<b><u>WARNING</u></b>	23/0478	. . . . {by means of an image recording device, e.g. a camera}
	Group <a href="#">F21V 23/004</a> is impacted by reclassification into groups <a href="#">F21K 9/238</a> and <a href="#">F21K 9/278</a> .	23/0485	. . . {the sensor sensing the physical interaction between a user and certain areas located on the lighting device, e.g. a touch sensor}
	All groups listed in this Warning should be considered in order to perform a complete search.	23/0492	. . . {the sensor detecting a change in orientation, a movement or an acceleration of the lighting device, e.g. a tilt switch}
23/005	. . . {the substrate is supporting also the light source}	23/06	. the elements being coupling devices, {e.g. connectors}
	<b><u>WARNING</u></b>	<b>25/00</b>	<b>Safety devices structurally associated with lighting devices (gas- tight or water-tight arrangements <a href="#">F21V 31/00</a>; in general <a href="#">F16P</a>; protective circuit arrangements <a href="#">per se H02H 7/00</a>)</b>
	Group <a href="#">F21V 23/005</a> is impacted by reclassification into groups <a href="#">F21K 9/238</a> and <a href="#">F21K 9/278</a> .	25/02	. coming into action when lighting device is disturbed, dismantled, or broken
	All groups listed in this Warning should be considered in order to perform a complete search.	25/04	. . breaking the electric circuit
23/006	. . . {the substrate being distinct from the light source holder}	25/06	. . feeding a quenching fluid to the light source
	<b><u>WARNING</u></b>	25/08	. . cutting the incandescent filament
	Group <a href="#">F21V 23/006</a> is impacted by reclassification into groups <a href="#">F21K 9/238</a> and <a href="#">F21K 9/278</a> .	25/10	. coming into action when lighting device is overloaded, e.g. thermal switch
	All groups listed in this Warning should be considered in order to perform a complete search.	25/12	. Flame-proof or explosion-proof arrangements
23/007	. . {enclosed in a casing}	25/125	. . {using intumescent material, i.e. using materials which swells up as a result of heat exposure}
		<b>27/00</b>	<b>Cable-stowing arrangements structurally associated with lighting devices, e.g. reels (storing lengths of cable in general <a href="#">B65H</a> {the lighting devices being vehicle headlamps <a href="#">F21S 48/1109</a>; the lighting devices being vehicle lights <a href="#">F21S 48/212</a>})</b>
		27/005	. {for portable lighting devices}

27/02 . Cable inlets

**29/00** **Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems** (lighting fixtures combined with outlets for air-treatment systems [F24F 13/078](#))

#### **WARNING**

Groups [F21V 29/002](#) - [F21V 29/006](#), [F21V 29/02](#), [F21V 29/20](#), [F21V 29/2212](#), [F21V 29/30](#), [F21V 29/40](#), and [F21V 29/402](#) are no longer used for the classification of documents as of January 15, 2015. The backfile of these groups is being reclassified into groups [F21V 29/002](#) - [F21V 29/89](#).

Until reclassification is complete, groups [F21V 29/002](#) - [F21V 29/006](#) and [F21V 29/02](#), [F21V 29/20](#), [F21V 29/2212](#), [F21V 29/30](#), [F21V 29/40](#), and [F21V 29/402](#) should be considered in order to perform a complete search.

29/002 . {Cooling arrangements ([F21V 29/02](#) takes precedence)}

(Frozen)

#### **WARNING**

Group [F21V 29/002](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/00](#) - [F21V 29/89](#).

Until reclassification is complete, group [F21V 29/002](#) should also be considered in order to perform a complete search.

29/004 . . {Natural cooling, i.e. by natural convection, conduction or radiation}

(Frozen)

#### **WARNING**

Group [F21V 29/004](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/00](#) - [F21V 29/89](#).

Until reclassification is complete, group [F21V 29/004](#) should also be considered in order to perform a complete search.

29/006 . . {Cooling devices or systems using condensation or evaporation of a fluid, e.g. heat pipes or two phase cooling systems}

(Frozen)

#### **WARNING**

Group [F21V 29/006](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/51](#) and [F21V 29/52](#).

Until reclassification is complete, groups [F21V 29/006](#), [F21V 29/51](#) and [F21V 29/52](#) should also be considered in order to perform a complete search.

29/02 . Cooling by forcing air {or gas} over or around the light source (cooling arrangements structurally associated with electric {discharge or incandescent} lamps [H01J 61/52](#), [H01K 1/58](#))

(Frozen)

#### **WARNING**

Group [F21V 29/02](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/503](#), and [F21V 29/60](#) - [F21V 29/89](#).

Until reclassification is complete, group [F21V 29/02](#) should also be considered in order to perform a complete search.

29/10 . Arrangement of heat-generating components to reduce thermal damage, e.g. by distancing heat-generating components from other components to be protected

#### **WARNING**

Group [F21V 29/10](#) is incomplete pending reclassification of documents from groups [F21V 29/002](#), [F21V 29/004](#) and [F21V 29/02](#).

Until reclassification is complete, groups [F21V 29/002](#), [F21V 29/004](#) and [F21V 29/02](#) should also be considered in order to perform a complete search.

29/15 . Thermal insulation

29/20 . {Cooling devices, cooling systems or arrangements thereof}

(Frozen)

#### **WARNING**

Group [F21V 29/20](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/00](#) - [F21V 29/89](#).

Until reclassification is complete, group [F21V 29/20](#) should also be considered in order to perform a complete search.

29/2212 . . {the fins or blades being planar}

(Frozen)

#### **WARNING**

Group [F21V 29/2212](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/76](#) - [F21V 29/78](#).

Until reclassification is complete, group [F21V 29/2212](#) should also be considered in order to perform a complete search.

- 29/30 . {Forced cooling using liquids, e.g. water}

(Frozen)

### **WARNING**

Group [F21V 29/30](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [F21V 29/56](#) - [F21V 29/59](#).

Until reclassification is complete, groups [F21V 29/30](#) should also be considered in order to perform a complete search.

- 29/40 . {Forced cooling by electrically-powered actuators  
(Frozen) (fans [F21V 29/025](#))}

### **WARNING**

Groups [F21V 29/40](#) and [F21V 29/402](#) are no longer used for the classification of documents as of January 15, 2015. The backfile of these groups is being reclassified into groups [F21V 29/51](#) - [F21V 29/677](#).

Until reclassification is complete, groups [F21V 29/40](#) and [F21V 29/402](#) should also be considered in order to perform a complete search.

- 29/402 . . {Multi-phase cooling systems actuated by  
(Frozen) pumps}

- 29/50 . Cooling arrangements (air-treatment systems  
dissipating or using the heat of lighting fixtures  
[F24F 3/056](#))

### **WARNING**

Groups [F21V 29/50](#) - [F21V 29/503](#) are incomplete pending reclassification of documents from groups [F21V 29/002](#), [F21V 29/004](#), and [F21V 29/02](#).

Until reclassification is complete, groups [F21V 29/002](#), [F21V 29/004](#), and [F21V 29/02](#) should also be considered in order to perform a complete search.

- 29/502 . . characterised by the adaption for cooling of  
specific components

- 29/503 . . . of light sources (cooling arrangements  
structurally associated with gas-discharge or  
vapour-discharge lamps [H01J 61/52](#); cooling  
arrangements structurally associated with  
electric incandescent lamps [H01K 1/58](#);  
cooling arrangements structurally associated  
with light-emitting diodes [H01L 33/64](#))

- 29/504 . . . of refractors

- 29/505 . . . of reflectors

- 29/506 . . . of globes, bowls or cover glasses

- 29/507 . . . of means for protecting lighting devices from  
damage, e.g. housings

- 29/508 . . . of electrical circuits

- 29/51 . . using condensation or evaporation of a fluid, e.g.  
heat pipes

### **WARNING**

Groups [F21V 29/51](#) - [F21V 29/52](#) are incomplete pending reclassification of documents from groups [F21V 29/006](#), [F21V 29/40](#), and [F21V 29/402](#).

Until reclassification is complete, groups [F21V 29/006](#), [F21V 29/40](#) and [F21V 29/402](#) should also be considered in order to perform a complete search.

- 29/52 . . . electrically powered, e.g. refrigeration systems

- 29/54 . . using thermoelectric means, e.g. Peltier elements

### **WARNING**

Group [F21V 29/54](#) is incomplete pending reclassification of documents from groups [F21V 29/40](#) and [F21V 29/402](#).

Until reclassification is complete, groups [F21V 29/40](#) and [F21V 29/402](#) should also be considered in order to perform a complete search.

- 29/56 . . using liquid coolants ([F21V 29/51](#) takes  
precedence)

### **WARNING**

Groups [F21V 29/56](#) - [F21V 29/59](#) are incomplete pending reclassification of documents from groups [F21V 29/30](#), [F21V 29/40](#) and [F21V 29/402](#).

Until reclassification is complete, groups [F21V 29/30](#), [F21V 29/40](#) and [F21V 29/402](#) should also be considered in order to perform a complete search.

- 29/57 . . . characterised by control arrangements

- 29/58 . . . characterised by the coolants

- 29/59 . . . {with forced flow of the coolant}

- 29/60 . . characterised by the use of a forced flow of gas,  
e.g. air

### **WARNING**

Groups [F21V 29/60](#) - [F21V 29/677](#) are incomplete pending reclassification of documents from groups [F21V 29/02](#), [F21V 29/40](#) and [F21V 29/402](#).

Until reclassification is complete, groups [F21V 29/02](#), [F21V 29/40](#) and [F21V 29/402](#) should also be considered in order to perform a complete search.

- 29/61 . . . characterised by control arrangements

- 29/63 . . . using electrically-powered vibrating means;  
using ionic wind

- 29/65 . . . the gas flowing in a closed circuit

- 29/67 . . . characterised by the arrangement of fans

- 29/673 . . . . {the fans being used for intake}

- 29/677 . . . . {the fans being used for discharging}

- 29/70 . . characterised by passive heat-dissipating elements, e.g. heat-sinks

**WARNING**

Groups [F21V 29/70](#) - [F21V 29/83](#) are incomplete pending reclassification of documents from group [F21V 29/02](#).

Until reclassification is complete, group [F21V 29/02](#) should be considered in order to perform a complete search.

- 29/71 . . . using a combination of separate elements interconnected by heat-conducting means, e.g. with heat pipes or thermally conductive bars between separate heat-sink elements
- 29/713 . . . . {in direct thermal and mechanical contact of each other to form a single system}
- 29/717 . . . . {using split or remote units thermally interconnected, e.g. by thermally conductive bars or heat pipes}
- 29/73 . . . the elements being adjustable with respect to each other, e.g. hinged
- 29/74 . . . with fins or blades
- 29/745 . . . . {the fins or blades being planar and inclined with respect to the joining surface from which the fins or blades extend}
- 29/75 . . . . with fins or blades having different shapes, thicknesses or spacing
- 29/76 . . . . with essentially identical parallel planar fins or blades, e.g. with comb-like cross-section

**WARNING**

Groups [F21V 29/76](#) - [F21V 29/767](#) are incomplete pending reclassification of documents from group [F21V 29/2212](#).

Until reclassification is complete, group [F21V 29/2212](#) should also be considered in order to perform a complete search.

- 29/763 . . . . . {the planes containing the fins or blades having the direction of the light emitting axis}
- 29/767 . . . . . {the planes containing the fins or blades having directions perpendicular to the light emitting axis}
- 29/77 . . . . with essentially identical diverging planar fins or blades, e.g. with fan-like or star-like cross-section

**WARNING**

Groups [F21V 29/77](#) - [F21V 29/777](#) are incomplete pending reclassification of documents from group [F21V 29/2212](#).

Until reclassification is complete, group [F21V 29/2212](#) should also be considered in order to perform a complete search.

- 29/773 . . . . . {the planes containing the fins or blades having the direction of the light emitting axis}
- 29/777 . . . . . {the planes containing the fins or blades having directions perpendicular to the light emitting axis}

- 29/78 . . . . with helically or spirally arranged fins or blades

**WARNING**

Group [F21V 29/78](#) is incomplete pending reclassification of documents from group [F21V 29/2212](#).

Until reclassification is complete, group [F21V 29/2212](#) should also be considered in order to perform a complete search.

- 29/80 . . . with pins or wires
- 29/81 . . . . with pins or wires having different shapes, lengths or spacing
- 29/83 . . . the elements having apertures, ducts or channels, e.g. heat radiation holes
- 29/85 . characterised by the material ([liquid coolants F21V 29/56](#))

**WARNING**

Groups [F21V 29/85](#) - [F21V 29/89](#) are incomplete pending reclassification of documents from group [F21V 29/02](#).

Until reclassification is complete, group [F21V 29/02](#) should also be considered in order to perform a complete search.

- 29/86 . . {Ceramics or glass}
- 29/87 . . Organic material, e.g. filled polymer composites; Thermo-conductive additives or coatings therefor
- 29/89 . . Metals
- 29/90 . Heating arrangements

**31/00 Gas-tight or water-tight arrangements**

- 31/005 . {Sealing arrangements therefor}
- 31/03 . with provision for venting {(for vehicle head lights [F21S 48/335](#); for vehicle rear lights [F21S 48/337](#))}
- 31/04 . Provision of filling media

**33/00 Structural combinations of lighting devices with other articles, not otherwise provided for**

- 33/0004 . {Personal or domestic articles}
- 33/0008 . . {Clothing or clothing accessories, e.g. scarfs, gloves or belts}
- 33/0012 . . {Furniture ([hospital beds F21V 33/0072](#))}
- 33/0016 . . . {Furnishing for windows and doors ([sunshades F21V 33/006](#))}
- 33/002 . . . {Racks for compact discs or the like}
- 33/0024 . . {Household or table equipment}
- 33/0028 . . . {Decorative household equipment, e.g. plant holders or food dummies}
- 33/0032 . . . . {Paintings, pictures or photographs; Frames therefor}
- 33/0036 . . . {Table-ware or table equipment, e.g. dishes, cutlery or trays}
- 33/004 . . {Sanitary equipment, e.g. mirrors, showers, toilet seats or paper dispensers}
- 33/0044 . . {Household appliances, e.g. washing machines or vacuum cleaners}
- 33/0048 . . {Office articles, e.g. bookmarks, desk lamps with drawers, stands for books or music scores}
- 33/0052 . . {Audio or video equipment, e.g. televisions, telephones, cameras or computers; Remote control devices therefor}



- 33/0056 . . . {Audio equipment, e.g. music instruments, radios or speakers}
- 33/006 . {General building constructions or finishing work for buildings, e.g. roofs, gutters, stairs or floors; Garden equipment; Sunshades or parasols}
- 33/0064 . {Health, life-saving or fire-fighting equipment}
- 33/0068 . . {Medical equipment}
- 33/0072 . . . {Hospital beds}
- 33/0076 . . {Safety or security signalisation, e.g. smoke or burglar alarms, earthquake detectors; Self-defence devices}
- 33/008 . {Leisure, hobby or sport articles, e.g. toys, games or first-aid kits; Hand tools; Toolboxes}
- 33/0084 . . {Hand tools; Toolboxes}
- 33/0088 . {Ventilating systems (lighting fixtures combined with outlets for air treatment systems [F24F 13/078](#))}
- 33/0092 . . {with heating or cooling devices}
- 33/0096 . . {Fans, e.g. ceiling fans (forced cooling of lighting devices characterised by the arrangement of fans [F21V 29/67](#))}
- 35/00 Candle holders**
- 35/003 . {Special means for attaching the candle to the candle holder}
- 35/006 . {Drop catchers; Shade holders}
- 36/00 Arrangements of mantles or other incandescent bodies on burners**
- 36/02 . in ceiling lamps
- 37/00 Details of lighting devices employing combustion as light source, not otherwise provided for; Night lamps; Votive lamps**
- 37/0004 . {using liquid fuel}
- 37/0008 . . {Fuel containers}
- 37/0012 . . . {Filling or level checking}
- 37/0016 . . . {Fastening of the container to other parts of the lamp}
- 37/002 . . {Wicks}
- 37/0025 . . . {vegetal ([F21V 37/0033](#) takes precedence)}
- 37/0029 . . . {mineral ([F21V 37/0033](#) takes precedence)}
- 37/0033 . . . {combination of vegetal and mineral}
- 37/0037 . . . {Cleaning devices}
- 37/0041 . . {Fuel supply}
- 37/0045 . . . {using hydrostatic pressure or weights}
- 37/005 . . . {using air or gas pressure}
- 37/0054 . . . {Controlling means, e.g. floaters}
- 37/0058 . . {Reflectors, cover glasses, chimneys; Smoke-removing devices; Preheaters}
- 37/0062 . . . {Reflectors}
- 37/0066 . . . {Chimneys}
- 37/007 . . . {Globs}
- 37/0075 . . {Fastening or safety devices for reflectors, cover glasses or chimneys}
- 37/0079 . . . {Fastening of chimneys ([F21V 37/0087](#) takes precedence)}
- 37/0083 . . . {Fastening of cover glasses ([F21V 37/0087](#) takes precedence)}
- 37/0087 . . . {Devices for lifting chimneys or cover glasses}
- 37/0091 . . . {Protections against shocks}
- 37/0095 . {Night lamps; Votive lamps}
- 37/02 . Special adaptation for protection against draughts {(for lanterns [F21L 19/006](#)); Draft controllers}

**99/00 Subject matter not provided for in other groups of this subclass**

- 2200/00 Use of light guides, e.g. fibre optic devices, in lighting devices or systems**
- 2200/10 . of light guides of the optical fibres type
- 2200/13 . . the light being emitted at the end of the guide
- 2200/15 . . the light being emitted along at least a portion of the outer surface of the guide
- 2200/17 . . characterised by the admission of light into the guide
- 2200/20 . of light guides of a generally planar shape
- 2200/30 . of light guides doped with fluorescent agents
- 2200/40 . of hollow light guides