

# CPC COOPERATIVE PATENT CLASSIFICATION

## F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

### LIGHTING; HEATING

#### F21 LIGHTING (NOTE omitted)

#### F21V FUNCTIONAL FEATURES OR DETAILS OF LIGHTING DEVICES OR SYSTEMS THEREOF; STRUCTURAL COMBINATIONS OF LIGHTING DEVICES WITH OTHER ARTICLES, NOT OTHERWISE PROVIDED FOR

##### 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](#)

##### WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:  
[F21V 8/00](#) covered by [G02B 6/00](#)
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

##### **{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
  - 1/17 . . . the material comprising photoluminescent substances
  - 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 materials, surface treatments or coatings
- 3/049 . . {Patterns or structured surfaces for diffusing light, e.g. frosted surfaces}
- 3/06 . . characterised by the material
- 3/061 . . . {the material being glass}
- 3/0615 . . . . {the material diffusing light, e.g. translucent glass}
- 3/062 . . . {the material being plastics}
- 3/0625 . . . . {the material diffusing light, e.g. translucent plastics}
- 3/063 . . . {comprising air or water bubbles, e.g. foamed materials}
- 3/08 . . . the material comprising photoluminescent substances
- 3/10 . . characterised by coatings
- 3/12 . . . the coatings comprising photoluminescent substances
- 5/00 Refractors for light sources (characterised by cooling arrangements [F21V 29/504](#))**
  - 5/002 . {using microoptical elements for redirecting or diffusing light}
  - 5/003 . . {using holograms}
  - 5/004 . . {using microlenses}
  - 5/005 . . {using microprisms}
  - 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}	7/10	• Construction
5/02	• of prismatic shape ( <a href="#">F21V 5/04 takes precedence</a> )	7/16	• . with provision for adjusting the curvature
5/04	• of lens shape	7/18	• . with provision for folding or collapsing
5/041	• . {Ball lenses}	7/22	• characterised by materials, surface treatments or coatings, e.g. dichroic reflectors
5/043	• . {the lens having cylindrical faces, e.g. rod lenses, toric lenses}	7/24	• . characterised by the material
5/045	• . {the lens having discontinuous faces, e.g. Fresnel lenses}	7/26	• . . the material comprising photoluminescent substances
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}	7/28	• . characterised by coatings
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}	7/30	• . . the coatings comprising photoluminescent substances
5/06	• Hanging lustres for chandeliers	<b>9/00</b>	<b>Elements for modifying spectral properties, polarisation or intensity of the light emitted, e.g. filters (coloured shades <a href="#">F21V 1/00</a>; elements characterised by cooling arrangements <a href="#">F21V 29/502</a>)</b>
5/08	• producing an asymmetric light distribution	9/02	• for simulating daylight ( <a href="#">F21V 9/04</a> , <a href="#">F21V 9/06 take precedence</a> )
5/10	• comprising photoluminescent material	9/04	• for filtering out infrared radiation (dichroic reflectors <a href="#">F21V 7/22</a> ; using liquid-filled chambers <a href="#">F21V 9/12</a> )
<b>7/00</b>	<b>Reflectors for light sources (characterised by cooling arrangements <a href="#">F21V 29/505</a>)</b>	9/06	• for filtering out ultraviolet radiation
7/0008	• {providing for indirect lighting}	9/08	• for producing coloured light, e.g. monochromatic; for reducing intensity of light (with provision for controlling the colour <a href="#">F21V 9/40</a> )
7/0016	• . {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}	9/083	• . {for portable lighting devices}
7/0025	• {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> )}	9/12	• . with liquid-filled chambers
7/0033	• . {with successive reflections from one reflector to the next or following}	9/14	• for producing polarised light
7/0041	• . . {for avoiding direct view of the light source or to prevent dazzling}	9/20	• Dichroic filters, i.e. devices operating on the principle of wave interference to pass specific ranges of wavelengths while cancelling others
7/005	• {with an elongated shape to cooperate with linear light sources}	9/30	• Elements containing photoluminescent material distinct from or spaced from the light source (shades <a href="#">F21V 1/17</a> ; globes, bowls or cover glasses <a href="#">F21V 3/08</a> , <a href="#">F21V 3/12</a> ; refractors <a href="#">F21V 5/10</a> ; reflectors <a href="#">F21V 7/26</a> , <a href="#">F21V 7/30</a> ; elements with provision for controlling the spectral properties or intensity <a href="#">F21V 9/40</a> )
7/0058	• {adapted to cooperate with light sources of shapes different from point-like or linear, e.g. circular light sources}	9/32	• . characterised by the arrangement of the photoluminescent material
7/0066	• {specially adapted to cooperate with point like light sources; specially adapted to cooperate with light sources the shape of which is unspecified ( <a href="#">F21V 7/16 - F21V 7/30 take precedence</a> )}	9/35	• . . at focal points, e.g. of refractors, lenses, reflectors or arrays of light sources
7/0075	• {for portable lighting devices}	9/38	• . Combination of two or more photoluminescent elements of different materials
7/0083	• {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> )}	9/40	• with provision for controlling spectral properties, e.g. colour, or intensity
7/0091	• {using total internal reflection}	9/45	• . by adjustment of photoluminescent elements
7/04	• Optical design	<b>11/00</b>	<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>
7/041	• . {with conical or pyramidal surface}	11/02	• using parallel laminae or strips, e.g. of Venetian-blind type ( <a href="#">F21V 11/06 takes precedence</a> )
7/043	• . {with cylindrical surface}	11/04	• . adjustable
7/045	• . {with spherical surface}	11/06	• using crossed laminae or strips {, e.g. grid-shaped louvers}; using lattices or honeycombs
7/046	• . {with involute curvature}	11/065	• . {adjustable}
7/048	• . {with facets structure}	11/08	• using diaphragms containing one or more apertures
7/05	• . plane	11/10	• . of iris type
7/06	• . with parabolic curvature	11/12	• . of slot type
7/07	• . with hyperbolic curvature	11/14	• . with many small apertures
7/08	• . with elliptical curvature	11/16	• using sheets without apertures, e.g. fixed
7/09	• . with a combination of different curvatures	11/18	• . movable, e.g. flaps, slides
		11/183	• . . {pivotal}

11/186	. . . {slidable}	15/04	. Resilient mountings, e.g. shock absorbers {(shock absorbing devices of vehicle headlamp housings <a href="#">B60Q 1/0491</a> ; in general <a href="#">F16F 15/04</a> )}
<b>13/00</b>	<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> (controlling the distribution of the light emitted by adjustment of elements <a href="#">F21V 14/00</a>)</b>	<b>17/00</b>	<b>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 <a href="#">F21V 19/00</a>)</b>
13/02	. Combinations of only two kinds of elements	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 ( <a href="#">F21V 17/10</a> takes precedence)}
13/04	. . the elements being reflectors and refractors {(for vehicle rear lights <a href="#">F21S 43/40</a> )}	17/005	. {with keying means, i.e. for enabling the assembling of component parts in distinctive positions, e.g. for preventing wrong mounting}
13/045	. . . {for portable lighting devices}	17/007	. {with provision for shipment or storage}
13/06	. . . a reflector being rotatable	17/02	. with provision for adjustment ( <a href="#">F21V 17/04</a> - <a href="#">F21V 17/08</a> take precedence)
13/08	. . the elements being filters or photoluminescent elements and reflectors	17/04	. the fastening being onto or by the light source
13/10	. . the elements being reflectors and screens	17/06	. the fastening being onto or by the lampholder
13/12	. Combinations of only three kinds of elements	17/08	. onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards
13/14	. . the elements being filters or photoluminescent elements, reflectors and refractors	17/10	. characterised by specific fastening means or way of fastening ( <a href="#">F21V 17/02</a> - <a href="#">F21V 17/08</a> take precedence)
<b>14/00</b>	<b>Controlling the distribution of the light emitted by adjustment of elements (reflectors with provision for adjusting the curvature <a href="#">F21V 7/16</a>; light filters or the like with provision for controlling the colour or intensity <a href="#">F21V 9/40</a>; screens using adjustable parallel laminae or strips <a href="#">F21V 11/04</a>; screens using iris-type diaphragms <a href="#">F21V 11/10</a>; screens using movable sheets without apertures <a href="#">F21V 11/18</a>; adjustable mountings for lighting devices <a href="#">F21V 21/14</a>)</b>	17/101	. . {permanently, e.g. welding, gluing or riveting}
14/003	. {by interposition of elements with electrically controlled variable light transmissivity, e.g. liquid crystal elements or electrochromic devices}	17/102	. . {using gravity or suction}
14/006	. {by means of optical elements, e.g. films, filters or screens, being rolled up around a roller}	17/104	. . {using feather joints, e.g. tongues and grooves, with or without friction}
14/02	. by movement of light sources {(in vehicle head lamps <a href="#">F21S 41/657</a> )}	17/105	. . {using magnets}
14/025	. . {in portable lighting devices}	17/107	. . {using hinge joints}
14/04	. by movement of reflectors {(in vehicle head lamps <a href="#">F21S 41/675</a> )}	17/108	. . {using hook and loop-type fasteners}
14/045	. . {in portable lighting devices}	17/12	. . by screwing
14/06	. by movement of refractors {(in vehicle head lamps <a href="#">F21S 41/635</a> )}	17/14	. . Bayonet-type fastening
14/065	. . {in portable lighting devices}	17/16	. . by deformation of parts; Snap action mounting
14/08	. by movement of the screens {or filters}	17/162	. . . {the parts being subjected to traction or compression, e.g. coil springs}
14/085	. . {in portable lighting devices}	17/164	. . . {the parts being subjected to bending, e.g. snap joints}
<b>{Aspects not related to light emission or distribution, e.g. fittings}</b>		17/166	. . . {the parts being subjected to torsion, e.g. spiral springs}
<b>15/00</b>	<b>Protecting lighting devices from damage (protection from thermal damage <a href="#">F21V 29/00</a>; gas-tight or water-tight arrangements <a href="#">F21V 31/00</a>)</b>	17/168	. . . {the parts being resilient rings acting substantially isotropically, e.g. split rings}
15/005	. {Measures against vandalism, stealing or tampering ( <a href="#">F21V 15/02</a> , <a href="#">F21V 15/04</a> take precedence)}	17/18	. . Latch-type fastening, e.g. with rotary action
15/01	. Housings, e.g. material or assembling of housing parts ( <a href="#">F21V 15/02</a> takes precedence {housings forming signs or letters <a href="#">G09F 13/04</a> })	17/20	. . by toggle-action levers
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}	<b>19/00</b>	<b>Fastening of light sources or lamp holders (fastening electric light source solely by the coupling device <a href="#">H01R 33/00</a> {; special means for attaching candle to candle holder <a href="#">F21V 35/003</a>})</b>
15/013	. . {the housing being an extrusion}	19/0005	. {of sources having contact pins, wires or blades, e.g. pinch sealed lamp ( <a href="#">F21V 19/001</a> takes precedence)}
15/015	. . Devices for covering joints between adjacent lighting devices; End coverings	19/001	. {the light sources being semiconductor devices, e.g. LEDs}
15/02	. Cages	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](#))}
- 19/047 . . {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



21/34	<ul style="list-style-type: none"> <li>Supporting elements displaceable along a guiding element <a href="#">{(telescopic mounting of lighting devices F21V 21/22)}</a></li> </ul>	23/0485	<ul style="list-style-type: none"> <li><a href="#">{the sensor sensing the physical interaction between a user and certain areas located on the lighting device, e.g. a touch sensor}</a></li> </ul>
21/35	<ul style="list-style-type: none"> <li>with direct electrical contact between the supporting element and electric conductors running along the guiding element</li> </ul>	23/0492	<ul style="list-style-type: none"> <li><a href="#">{the sensor detecting a change in orientation, a movement or an acceleration of the lighting device, e.g. a tilt switch}</a></li> </ul>
21/36	<ul style="list-style-type: none"> <li>Hoisting or lowering devices, e.g. for maintenance</li> </ul>	23/06	<ul style="list-style-type: none"> <li>the elements being coupling devices <a href="#">{, e.g. connectors}</a></li> </ul>
21/38	<ul style="list-style-type: none"> <li>with a cable</li> </ul>	<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>
21/40	<ul style="list-style-type: none"> <li>Hand grips</li> </ul>	25/02	<ul style="list-style-type: none"> <li>coming into action when lighting device is disturbed, dismantled, or broken</li> </ul>
21/403	<ul style="list-style-type: none"> <li><a href="#">{for operation or dentist lamps}</a></li> </ul>	25/04	<ul style="list-style-type: none"> <li>breaking the electric circuit</li> </ul>
21/406	<ul style="list-style-type: none"> <li><a href="#">{for portable lighting devices}</a></li> </ul>	25/06	<ul style="list-style-type: none"> <li>feeding a quenching fluid to the light source</li> </ul>
<b>23/00</b>	<b>Arrangement of electric circuit elements in or on lighting devices <a href="#">{(characterised by cooling arrangements F21V 29/508)}</a></b>	25/08	<ul style="list-style-type: none"> <li>cutting the incandescent filament</li> </ul>
23/001	<ul style="list-style-type: none"> <li><a href="#">{the elements being electrical wires or cables}</a></li> </ul>	25/10	<ul style="list-style-type: none"> <li>coming into action when lighting device is overloaded, e.g. thermal switch</li> </ul>
23/002	<ul style="list-style-type: none"> <li><a href="#">{Arrangements of cables or conductors inside a lighting device, e.g. means for guiding along parts of the housing or in a pivoting arm}</a></li> </ul>	25/12	<ul style="list-style-type: none"> <li>Flameproof or explosion-proof arrangements</li> </ul>
23/003	<ul style="list-style-type: none"> <li><a href="#">{the elements being electronics drivers or controllers for operating the light source, e.g. for a LED array}</a></li> </ul>	25/125	<ul style="list-style-type: none"> <li><a href="#">{using intumescent material, i.e. using materials which swells up as a result of heat exposure}</a></li> </ul>
23/004	<ul style="list-style-type: none"> <li><a href="#">{arranged on a substrate, e.g. a printed circuit board}</a></li> </ul>	<b>27/00</b>	<b>Cable-stowing arrangements structurally associated with lighting devices, e.g. reels <a href="#">{(storing lengths of cable in general B65H; the lighting devices being vehicle headlamps F21S 41/192; the lighting devices being vehicle lights F21S 43/195)}</a></b>
23/005	<ul style="list-style-type: none"> <li><a href="#">{the substrate is supporting also the light source}</a></li> </ul>	27/005	<ul style="list-style-type: none"> <li><a href="#">{for portable lighting devices}</a></li> </ul>
23/006	<ul style="list-style-type: none"> <li><a href="#">{the substrate being distinct from the light source holder}</a></li> </ul>	27/02	<ul style="list-style-type: none"> <li>Cable inlets</li> </ul>
23/007	<ul style="list-style-type: none"> <li><a href="#">{enclosed in a casing}</a></li> </ul>	<b>29/00</b>	<b>Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems <a href="#">(lighting fixtures combined with outlets for air-treatment systems F24F 13/078)</a></b>
23/008	<ul style="list-style-type: none"> <li><a href="#">{the casing being outside the housing of the lighting device}</a></li> </ul>	29/10	<ul style="list-style-type: none"> <li>Arrangement of heat-generating components to reduce thermal damage, e.g. by distancing heat-generating components from other components to be protected</li> </ul>
23/009	<ul style="list-style-type: none"> <li><a href="#">{the casing being inside the housing of the lighting device}</a></li> </ul>	29/15	<ul style="list-style-type: none"> <li>Thermal insulation</li> </ul>
23/02	<ul style="list-style-type: none"> <li>the elements being transformers, impedances <a href="#">{or power supply units, e.g. a transformer with a rectifier}</a></li> </ul>	29/50	<ul style="list-style-type: none"> <li>Cooling arrangements <a href="#">(air-treatment systems dissipating or using the heat of lighting fixtures F24F 3/056)</a></li> </ul>
23/023	<ul style="list-style-type: none"> <li><a href="#">{Power supplies in a casing <a href="#">(F21V 23/003 takes precedence)</a>}</a></li> </ul>	29/502	<ul style="list-style-type: none"> <li><a href="#">{characterised by the adaptation for cooling of specific components}</a></li> </ul>
23/026	<ul style="list-style-type: none"> <li><a href="#">{Fastening of transformers or ballasts}</a></li> </ul>	29/503	<ul style="list-style-type: none"> <li><a href="#">{of light sources <a href="#">(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 H10H 20/858)</a>}</a></li> </ul>
23/04	<ul style="list-style-type: none"> <li>the elements being switches <a href="#">(safety devices F21V 25/00)</a></li> </ul>	29/504	<ul style="list-style-type: none"> <li><a href="#">{of refractors}</a></li> </ul>
23/0407	<ul style="list-style-type: none"> <li><a href="#">{for flashing}</a></li> </ul>	29/505	<ul style="list-style-type: none"> <li><a href="#">{of reflectors}</a></li> </ul>
23/0414	<ul style="list-style-type: none"> <li><a href="#">{specially adapted to be used with portable lighting devices}</a></li> </ul>	29/506	<ul style="list-style-type: none"> <li><a href="#">{of globes, bowls or cover glasses}</a></li> </ul>
23/0421	<ul style="list-style-type: none"> <li><a href="#">{the switch being part of, or disposed on the tail cap portion thereof}</a></li> </ul>	29/507	<ul style="list-style-type: none"> <li><a href="#">{of means for protecting lighting devices from damage, e.g. housings}</a></li> </ul>
23/0428	<ul style="list-style-type: none"> <li><a href="#">{the switch being part of, or disposed on the lamp head portion thereof}</a></li> </ul>	29/508	<ul style="list-style-type: none"> <li><a href="#">{of electrical circuits}</a></li> </ul>
23/0435	<ul style="list-style-type: none"> <li><a href="#">{activated by remote control means}</a></li> </ul>	29/51	<ul style="list-style-type: none"> <li><a href="#">{using condensation or evaporation of a fluid, e.g. heat pipes}</a></li> </ul>
23/0442	<ul style="list-style-type: none"> <li><a href="#">{activated by means of a sensor, e.g. motion or photodetectors}</a></li> </ul>	29/52	<ul style="list-style-type: none"> <li><a href="#">{electrically powered, e.g. refrigeration systems}</a></li> </ul>
23/045	<ul style="list-style-type: none"> <li><a href="#">{the sensor receiving a signal from a remote controller}</a></li> </ul>	29/54	<ul style="list-style-type: none"> <li><a href="#">{using thermoelectric means, e.g. Peltier elements}</a></li> </ul>
23/0457	<ul style="list-style-type: none"> <li><a href="#">{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}</a></li> </ul>		
23/0464	<ul style="list-style-type: none"> <li><a href="#">{the sensor sensing the level of ambient illumination, e.g. dawn or dusk sensors}</a></li> </ul>		
23/0471	<ul style="list-style-type: none"> <li><a href="#">{the sensor detecting the proximity, the presence or the movement of an object or a person}</a></li> </ul>		
23/0478	<ul style="list-style-type: none"> <li><a href="#">{by means of an image recording device, e.g. a camera}</a></li> </ul>		

29/56	. . using liquid coolants ( <a href="#">F21V 29/51 takes precedence</a> )	29/90	. Heating arrangements
29/57	. . . characterised by control arrangements	<b>31/00</b>	<b>Gas-tight or water-tight arrangements</b>
29/58	. . . characterised by the coolants	31/005	. {Sealing arrangements therefor}
29/59	. . . {with forced flow of the coolant}	31/03	. with provision for venting {(for vehicle head lights <a href="#">F21S 45/33</a> ; for vehicle rear lights <a href="#">F21S 41/192</a> )}
29/60	. . characterised by the use of a forced flow of gas, e.g. air	31/04	. Provision of filling media
29/61	. . . characterised by control arrangements	<b>33/00</b>	<b>Structural combinations of lighting devices with other articles, not otherwise provided for</b>
29/63	. . . using electrically-powered vibrating means; using ionic wind	33/0004	. {Personal or domestic articles}
29/65	. . . the gas flowing in a closed circuit	33/0008	. . {Clothing or clothing accessories, e.g. scarfs, gloves or belts}
29/67	. . . characterised by the arrangement of fans	33/0012	. . {Furniture ( <a href="#">hospital beds F21V 33/0072</a> )}
29/673	. . . . {the fans being used for intake}	33/0016	. . . {Furnishing for windows and doors ( <a href="#">sunshades F21V 33/006</a> )}
29/677	. . . . {the fans being used for discharging}	33/002	. . . {Racks for compact discs or the like}
29/70	. . characterised by passive heat-dissipating elements, e.g. heat-sinks	33/0024	. . {Household or table equipment}
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	33/0028	. . . {Decorative household equipment, e.g. plant holders or food dummies}
29/713	. . . . {in direct thermal and mechanical contact of each other to form a single system}	33/0032	. . . . {Paintings, pictures or photographs; Frames therefor}
29/717	. . . . {using split or remote units thermally interconnected, e.g. by thermally conductive bars or heat pipes}	33/0036	. . . {Table-ware or table equipment, e.g. dishes, cutlery or trays}
29/73	. . . the elements being adjustable with respect to each other, e.g. hinged	33/004	. . {Sanitary equipment, e.g. mirrors, showers, toilet seats or paper dispensers}
29/74	. . . with fins or blades	33/0044	. . {Household appliances, e.g. washing machines or vacuum cleaners}
29/745	. . . . {the fins or blades being planar and inclined with respect to the joining surface from which the fins or blades extend}	33/0048	. . {Office articles, e.g. bookmarks, desk lamps with drawers, stands for books or music scores}
29/75	. . . . with fins or blades having different shapes, thicknesses or spacing	33/0052	. . {Audio or video equipment, e.g. televisions, telephones, cameras or computers; Remote control devices therefor}
29/76	. . . . with essentially identical parallel planar fins or blades, e.g. with comb-like cross-section	33/0056	. . . {Audio equipment, e.g. music instruments, radios or speakers}
29/763	. . . . . {the planes containing the fins or blades having the direction of the light emitting axis}	33/006	. {General building constructions or finishing work for buildings, e.g. roofs, gutters, stairs or floors; Garden equipment; Sunshades or parasols}
29/767	. . . . . {the planes containing the fins or blades having directions perpendicular to the light emitting axis}	33/0064	. {Health, life-saving or fire-fighting equipment}
29/77	. . . . with essentially identical diverging planar fins or blades, e.g. with fan-like or star-like cross-section	33/0068	. . {Medical equipment}
29/773	. . . . . {the planes containing the fins or blades having the direction of the light emitting axis}	33/0072	. . . {Hospital beds}
29/777	. . . . . {the planes containing the fins or blades having directions perpendicular to the light emitting axis}	33/0076	. . {Safety or security signalisation, e.g. smoke or burglar alarms, earthquake detectors; Self-defence devices}
29/78	. . . . with helically or spirally arranged fins or blades	33/008	. {Leisure, hobby or sport articles, e.g. toys, games or first-aid kits; Hand tools; Toolboxes}
29/80	. . . with pins or wires	33/0084	. . {Hand tools; Toolboxes}
29/81	. . . . with pins or wires having different shapes, lengths or spacing	33/0088	. {Ventilating systems ( <a href="#">lighting fixtures combined with outlets for air treatment systems F24F 13/078</a> )}
29/83	. . . the elements having apertures, ducts or channels, e.g. heat radiation holes	33/0092	. . {with heating or cooling devices}
29/85	. characterised by the material ( <a href="#">liquid coolants F21V 29/56</a> )	33/0096	. . {Fans, e.g. ceiling fans ( <a href="#">forced cooling of lighting devices characterised by the arrangement of fans F21V 29/67</a> )}
29/86	. . {Ceramics or glass}	<b>35/00</b>	<b>Candle holders</b>
29/87	. . Organic material, e.g. filled polymer composites; Thermo-conductive additives or coatings therefor	35/003	. {Special means for attaching the candle to the candle holder}
29/89	. . Metals	35/006	. {Drop catchers; Shade holders}
		<b>36/00</b>	<b>Arrangements of mantles or other incandescent bodies on burners</b>
		36/02	. in ceiling lamps
		<b>37/00</b>	<b>Details of lighting devices employing combustion as light source, not otherwise provided for</b>
		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