

**CPC****COOPERATIVE PATENT CLASSIFICATION****F21S****NON-PORTABLE LIGHTING DEVICES OR SYSTEMS THEREOF ( burners [F23D](#) )****NOTE**

1. This subclass covers devices or systems intended for fixed installation, e.g. vehicle lighting, or for use at a permanent location, e.g. free-standing floor- or table-lamps.
2. This subclass does not cover devices or systems specially adapted for transportation, which are covered by subclass [F21L](#).
3. Non-electric lighting devices or systems are classified in groups [F21S 11/00](#) to [F21S 15/00](#) only if a special adaptation related to the use of a non-electric light source is of interest.

**Guidance heading:** Electric lighting**F21S 2/00** Systems of lighting devices, not provided for in main groups [F21S 4/00](#) to [F21S 10/00](#) or [F21S 19/00](#), e.g. of modular construction

F21S 2/005 . { of modular construction }

**F21S 4/00** Lighting devices or systems using a string or strip of light sources

F21S 4/001 . { using a string of light sources, i.e. lighting devices or systems where the light sources are supported by loose electric cables, e.g. Christmas tree lights }

F21S 4/002 .. { the strings forming a grid, net or web structure }

F21S 4/003 . { using a strip of light sources, i.e. lighting devices or systems where the light sources are supported on a linear support }

F21S 4/005 .. { the lighting device being flexible or deformable, e.g. into a curved shape }

F21S 4/006 ... { the lighting device being a LED tape }

F21S 4/007 ... { the lighting device being a LED rope light }

F21S 4/008 .. { the lighting device being rigid or comprising an elongated rigid housing, e.g. LED bars }

**F21S 6/00** Lighting devices intended to be free-standing ( [F21S 9/00](#), [F21S 10/00](#), { [F21S 13/12](#) } take precedence ) { lighting devices specially adapted to be transported from place to place, e.g. lighting devices carried on wheeled supports [F21L](#); details of supports for lighting devices [F21V 21/00](#) }F21S 6/001 . { being candle-shaped ( with varying lighting effect of simulating flames [F21S 10/04](#); string of light sources [F21S 4/00](#) ) }

F21S 6/002 . { Table lamps, e.g. for ambient lighting }

F21S 6/003 .. { for task lighting, e.g. for reading or desk work, e.g. angle poise lamps }

- F21S 6/004 . { with a lamp housing in direct contact with the floor or ground }
- F21S 6/005 . { with a lamp housing maintained at a distance from the floor or ground via a support, e.g. standing lamp for ambient lighting }
- F21S 6/006 .. { for direct lighting only, e.g. task lighting }
- F21S 6/007 .. { for indirect lighting only, e.g. torchiere with reflector bowl directed towards ceiling }
- F21S 6/008 .. { with a combination of direct and indirect lighting }

**F21S 8/00** **Lighting devices intended for fixed installation** ( [F21S 9/00](#) , [F21S 10/00](#) take precedence; using a string or strip of light sources [F21S 4/00](#) )

- F21S 8/003 . { Searchlights, i.e. outdoor lighting device producing powerful beam of parallel rays, e.g. for military or attraction purposes ( searchlights mounted on a vehicle [B60Q 1/24](#) ) }
- F21S 8/006 . { Solar simulators, e.g. for testing photovoltaic panels }
- F21S 8/02 . of recess-mounted type, e.g. downlighters ( [F21S 8/10](#) takes precedence; { details of recessed bases [F21V 21/04](#) } )
- F21S 8/022 .. { intended to be recessed in a floor or like ground surface, e.g. pavement or false floor }
- F21S 8/024 .. { intended to be recessed in a wall or like vertical structure, e.g. building facade }
- F21S 8/026 .. { intended to be recessed in a ceiling or like overhead structure, e.g. suspended ceiling }
- F21S 8/028 .. { being retractable, i.e. having two fixed positions, one recessed, e.g. in a wall, floor or ceiling, and one extended when in use }
- F21S 8/03 . { of surface-mounted type ( [F21S 8/02](#) , [F21S 8/04](#) take precedence; details of wall or floor bases [F21V 21/02](#) ) }

**WARNING**

Group [F21S 8/03](#) does not correspond to former or future IPC groups.  
Correspondence CPC : IPC for this group is as following: - [F21S 8/03](#) :  
[F21S 8/00](#)

- F21S 8/031 .. { the device consisting essentially only of a light source holder with an exposed light source, e.g. a fluorescent tube }
- F21S 8/032 .. { the surface being a floor or like ground surface, e.g. pavement }
- F21S 8/033 .. { the surface being a wall or like vertical structure, e.g. building facade }
- F21S 8/035 ... { by means of plugging into a wall outlet, e.g. night light }
- F21S 8/036 ... { by means of a rigid support, e.g. bracket or arm }
- F21S 8/037 ... { for mounting in a corner, i.e. between adjacent walls or wall and ceiling }
- F21S 8/038 .. { intended to be mounted on a light track ( suspended from a light track [F21S 8/066](#) ; details of supporting elements displaceable along a guiding element [F21V 21/34](#) ) }
- F21S 8/04 . intended only for mounting on a ceiling or the like overhead structures ( [F21S 8/02](#) takes precedence; { details of ceiling bases [F21V 21/03](#) } )
- F21S 8/043 .. { mounted by means of a rigid support, e.g. bracket or arm }

- F21S 8/046 . . { having multiple lighting devices, e.g. connected to a common ceiling base }
- F21S 8/06 . . by suspension
- F21S 8/061 . . . { with a non-rigid pendant, i.e. a cable, wire or chain }
- F21S 8/063 . . . { with a rigid pendant, i.e. a pipe or rod }
- F21S 8/065 . . . { multi-branched, e.g. a chandelier }
- F21S 8/066 . . . { from a light track ( details of supporting elements displaceable along a guiding element [F21V 21/34](#) ) }
- F21S 8/068 . . . { from a stretched wire }
  
- F21S 8/08 . with a standard { ( [F21S 6/00](#) takes precedence ) }
- F21S 8/081 . . { of low-built type, e.g. landscape light }
- F21S 8/083 . . . { of bollard type, i.e. with lighting fixture integrated into the standard or mounted on top of it and having substantially the same diameter }
- F21S 8/085 . . { of high-built type, e.g. street light }
- F21S 8/086 . . . { with lighting device attached sideways of the standard, e.g. for roads and highways }
- F21S 8/088 . . . { with lighting device mounted on top of the standard, e.g. for pedestrian zones }
  
- F21S 8/10 . specially adapted for vehicles

**WARNING**

This group is no longer used for the classification of new documents as from January 1st, 2012. The backlog of this group is being continuously reclassified to [F21S 48/00](#) and subgroups

- F21S 8/12 . . providing single shaped beams or asymmetric beams, e.g. for penetrating fog or for preventing glare

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This group is no longer used for the classification of new documents as from January 1st, 2012. The backlog of this group is being continuously reclassified to [F21S 48/00](#) and subgroups

## **F21S 9/00      Lighting devices with a built-in power supply ; Systems employing lighting devices with a built-in power supply**

- F21S 9/02 . the power supply being a battery or accumulator
- F21S 9/022 . . { Emergency lighting devices }
- F21S 9/024 . . . { using a supplementary light source for emergency lighting }
- F21S 9/026 . . { rechargeable by using wind power, e.g. using wind turbines }
- F21S 9/028 . . { rechargeable by using hydropower, e.g. using water powered turbines }
- F21S 9/03 . . rechargeable by exposure to light
- F21S 9/032 . . . { the solar unit being separate from the lighting unit }
- F21S 9/035 . . . { the solar unit being integrated within the support for the lighting unit, e.g. within or on a pole }
- F21S 9/037 . . . { the solar unit and the lighting unit being located within or on the same housing }

}

- F21S 9/04 . the power supply being a generator
- F21S 9/043 . . { driven by wind power, e.g. by wind turbines }
- F21S 9/046 . . { driven by hydropower, e.g. by water powered turbines }

## **F21S 10/00 Lighting devices or systems producing a varying lighting effect**

- F21S 10/002 . { using liquids, e.g. water ( [F21S 8/00P7](#) takes precedence ) }
- F21S 10/005 . { using light guides ( light guides specially adapted for lighting devices [G02B 6/0001](#) ) }
- F21S 10/007 . { using rotating transparent or colored disks, e.g. gobo wheels }
- F21S 10/02 . changing colors { ( [F21S 10/002](#) to [F21S 10/007](#) , [F21S 10/04](#) take precedence ) }
- F21S 10/023 . . { by selectively switching fixed light sources }
- F21S 10/026 . . { by movement of parts, e.g. by movement of reflectors or light sources ( [F21S 10/007](#) takes precedence ) }
- F21S 10/04 . simulating flames
- F21S 10/043 . . { by selectively switching fixed light sources }
- F21S 10/046 . . { by movement of parts, e.g. by movement of reflectors or light sources }
- F21S 10/06 . flashing, e.g. with rotating reflector or light source { ( signalling lighting devices mounted on vehicles [B60Q 1/26](#) ) }
- F21S 10/063 . . { for providing a rotating light effect }
- F21S 10/066 . . . { by selectively switching fixed light sources }

## **Guidance heading: Non-electric lighting**

- F21S 11/00 Non-electric lighting devices or systems using daylight { ( roofs with sky-light opening [E04D 13/03](#) ; sun blinds for windows with means for redirecting light onto ceiling of a room [E06B 9/00](#) ; hybrid lighting devices combining artificial and natural light [F21S 19/00](#) ; solar heat collectors [F24J 2/00](#) ; solar cells or solar cell modules [H01L 31/00](#) ) }**
- F21S 11/002 . { characterised by the means for collecting or concentrating the sunlight, e.g. parabolic reflectors or Fresnel lenses }
- F21S 11/005 . . { with tracking means for following the position of the sun }
- F21S 11/007 . { characterised by the means for transmitting light into the interior of a building }
- F21S 13/00 Non-electric lighting devices or systems employing a point-like light source ( candle holders [F21V 35/00](#) ) ; Non-electric lighting devices or systems employing a light source of unspecified shape**
- F21S 13/02 . Devices intended to be fixed, e.g. ceiling lamp, wall lamp
- F21S 13/04 . . with a pendant

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|--|---|---|
| F21S 13/06   | ...   | multi-branched, e.g. chandelier   |
| F21S 13/08   | ..  | with suspension from a stretched wire   |
| F21S 13/10   | ..  | with a standard, e.g. street lamp   |
| F21S 13/12   | .   | Devices intended to be free-standing, e.g. table lamp, floor lamp   |
| F21S 13/14   | .   | Lighting systems  |
| F21S 15/00   | <b>Non-electric lighting devices or systems employing light sources not covered by main groups <a href="#">F21S 11/00</a> , <a href="#">F21S 13/00</a> or <a href="#">F21S 19/00</a></b>            |   |
| F21S 19/00   | <b>Lighting devices or systems employing combinations of electric and non-electric light sources ; Replacing or exchanging electric light sources with non-electric light sources or vice-versa</b> |   |
| F21S 19/005  | .   | { Combining sunlight and electric light sources for indoor illumination }   |
| F21S 48/00   | { Lighting devices or systems specially adapted for vehicles ( arrangements or adaptations for ships or waterborne vessels <a href="#">B63B 45/00</a> ) }   |   |
| <b><u>WARNING</u></b>  |   |   |
| Groups <a href="#">F21S 48/00</a> to <a href="#">F21S 48/34</a> do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - <a href="#">F21S 48/00</a> - <a href="#">F21S 48/34</a> : <a href="#">F21S 8/10</a> |   |   |
| F21S 48/10   | .   | { Headlamps }   |
| F21S 48/11   | ..  | { characterised by the light source }   |
| F21S 48/1104   | ...   | { Attachment of light sources; Lamp holders; Terminals or connectors therefor ( <a href="#">F21S 48/1742</a> takes precedence ) }   |
| F21S 48/1109   | ....  | { Details of lamp holders, terminals or connectors ( mounting of a ballast for a high intensity discharge lamp on the housing wall of a headlamp <a href="#">B60Q</a> ) } |
| F21S 48/1113   | ....  | { Bayonet attachments }   |
| F21S 48/1118   | ....  | { Wire spring attachments }   |
| F21S 48/1122   | ....  | { Snap-fit attachments }  |
| F21S 48/1127   | ...   | { Type of emitted light }   |
| F21S 48/1131   | ....  | { Colored light }   |
| F21S 48/1136   | ....  | { Ultraviolet (UV) or infrared (IR) light }   |
| F21S 48/114  | ....  | { Polarized light }   |
| F21S 48/1145   | ...   | { Type of light source }  |
| F21S 48/115  | ....  | { Light emitting diodes (LEDs) }  |
| F21S 48/1154   | .....   | { the main emission direction of the LED being parallel to the optical axis of the headlamp }   |
| F21S 48/1159   | .....   | { the main emission direction of the LED being angled to the optical axis of the headlamp }   |
| F21S 48/1163   | .....   | { Surface emitters, e.g. OLEDs }  |

|              |       |   |
|--------------|-------|---|
| F21S 48/1168 | ....  | { Incandescent light sources, e.g. filament or halogen lamps }  |
| F21S 48/1172 | ..... | { having two or more filaments }  |
| F21S 48/1177 | ..... | { characterised by the shape of the filament }  |
| F21S 48/1181 | ..... | { having a filament being arranged transversally to the optical axis of the headlamp }                              |
| F21S 48/1186 | ....  | { High intensity discharge (HID) light source }   |
| F21S 48/119  | ....  | { Fluorescent, elongated light source }   |
| F21S 48/1195 | ....  | { Combination of light sources of different types or shapes }   |
| F21S 48/12   | ..    | { characterised by refractors, transparent cover plates or filters }  |
| F21S 48/1208 | ...   | { Attachment of refractors, transparent cover plates or filters ( <a href="#">F21S 48/1721</a> takes precedence ) } |
| F21S 48/1216 | ....  | { specially adapted to projection lenses }  |
| F21S 48/1225 | ...   | { Type of refractor, transparent cover plates or filters }  |
| F21S 48/1233 | ....  | { Cover glass }   |
| F21S 48/1241 | ....  | { Light guides ( <a href="#">light guides per se G02B 6/0001</a> ) }  |
| F21S 48/125  | ....  | { Projection lenses }   |
| F21S 48/1258 | ..... | { Lenses with a circular or truncated circular outline, when seen from the front }                                  |
| F21S 48/1266 | ..... | { Elongated lenses }  |
| F21S 48/1275 | ..... | { Composite lenses; Lenses with a patch like shape }  |
| F21S 48/1283 | ..... | { Lens surfaces, e.g. coatings, surface structures }  |
| F21S 48/1291 | ..... | { Thick lenses for providing the final automotive light distribution }  |
| F21S 48/13   | ..    | { characterised by reflectors }   |
| F21S 48/1305 | ...   | { Attachment of reflectors ( <a href="#">F21S 48/1757</a> takes precedence ) }                                      |
| F21S 48/1311 | ....  | { specially adapted to extension reflectors }   |
| F21S 48/1317 | ...   | { Optical design }  |
| F21S 48/1323 | ....  | { the reflector being a surface of revolution or a planar surface, e.g. truncated }                                 |
| F21S 48/1329 | ....  | { the reflector using total internal reflection }   |
| F21S 48/1335 | ....  | { the reflector having two perpendicular cross sections having regular geometrical curves of a distinct nature }    |
| F21S 48/1341 | ....  | { the reflector consisting of complete annular areas }  |
| F21S 48/1347 | ..... | { with continuity at the junction between adjacent areas }  |
| F21S 48/1352 | ..... | { with discontinuity at the junction between adjacent areas }   |
| F21S 48/1358 | ....  | { the reflector consisting of patch like sectors }  |
| F21S 48/1364 | ..... | { with continuity at the junction between adjacent areas }  |
| F21S 48/137  | ..... | { with discontinuity at the junction between adjacent areas }   |
| F21S 48/1376 | ....  | { the reflector having a structured surface, e.g. with facets or corrugations }                                     |
| F21S 48/1382 | ....  | { the reflector having surface portions added to its general concavity }  |
| F21S 48/1388 | ....  | { Combination of two or more reflectors }   |
| F21S 48/1394 | ...   | { Material, surface treatment or coating of the reflector }   |
| F21S 48/14   | ..    | { characterised by screens, non-reflecting members, light-shielding members or fixed shades }                       |
| F21S 48/142  | ...   | { Attachment thereof ( <a href="#">F21S 48/1768</a> takes precedence ) }  |

|              |       |   |
|--------------|-------|---|
| F21S 48/145  | ...   | { Details of the shape of screens, non-reflecting members, light-shielding members or fixed shades }  |
| F21S 48/147  | ....  | { Hoods or cap-shaped }   |
| F21S 48/15   | ..    | { characterised by aesthetical components or components other than light sources, reflectors, refractors or screens, e.g. partition walls, covers, decorative trims } |
| F21S 48/155  | ...   | { Attachment thereof }  |
| F21S 48/17   | ..    | { characterised by a variable light distribution }  |
| F21S 48/1705 | ...   | { Light distributions being switched }  |
| F21S 48/171  | ....  | { between right and left traffic side }   |
| F21S 48/1715 | ...   | { by acting on refractors, filters or transparent cover plates }  |
| F21S 48/1721 | ....  | { by moving refractors, filters or transparent cover plates }   |
| F21S 48/1726 | ....  | { by changing the light transmissivity of the refractors, filters or transparent cover plates }   |
| F21S 48/1731 | ..... | { by electro-optic means, e.g. liquid crystal or electrochromic devices }   |
| F21S 48/1736 | ...   | { by acting on light sources }  |
| F21S 48/1742 | ....  | { by moving light sources }   |
| F21S 48/1747 | ....  | { by switching light sources ( <a href="#">F21S 48/1168</a> takes precedence ) }  |
| F21S 48/1752 | ...   | { by acting on reflectors }   |
| F21S 48/1757 | ....  | { by moving reflectors }  |
| F21S 48/1763 | ...   | { by acting on screens }  |
| F21S 48/1768 | ....  | { by moving screens }   |
| F21S 48/1773 | ..... | { Blades, i.e. screens moving in a vertical plane }   |
| F21S 48/1778 | ..... | { Flaps, i.e. screens pivoting around one of its edges }  |
| F21S 48/1784 | ..... | { Shields, i.e. screens not creating an image meant to be projected, e.g. shielding a part of the light source or a part of an additional optical element }           |
| F21S 48/1789 | ..... | { Rotating screens, i.e. screens rotating around a vertical axis }  |
| F21S 48/1794 | ..... | { Shafts, i.e. screens being a rotating shaft }   |
| F21S 48/20   | .     | { Signal lamps, e.g. brake lamps or turn signal lamps }   |
| F21S 48/21   | ..    | { characterised by the light source }   |
| F21S 48/211  | ...   | { Attachment of light sources; Lamp holders, terminals or connectors therefor }   |
| F21S 48/212  | ....  | { Details of lamp holders, terminals or connectors }  |
| F21S 48/214  | ...   | { Type of the light source }  |
| F21S 48/215  | ....  | { Light emitting diodes (LEDs) }  |
| F21S 48/217  | ..... | { Surface emitters, e.g. OLEDs }  |
| F21S 48/218  | ....  | { Strips of light sources }   |
| F21S 48/22   | ..    | { characterised by refractors, filters or transparent cover plates }  |
| F21S 48/2206 | ...   | { Attachment thereof }  |
| F21S 48/2212 | ...   | { Type of refractors, filters or transparent cover plates }   |
| F21S 48/2218 | ....  | { Filters }   |
| F21S 48/2225 | ....  | { Light guides ( <a href="#">light guides per se G02B 6/0001</a> ) }  |
| F21S 48/2231 | ..... | { characterised by the shape of the light guide }   |
| F21S 48/2237 | ..... | { Bar or rod-like light guides }  |



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|--|-------|--|
| F21S 48/2243   | ..... | { Plate-like light guides }  |
| F21S 48/225  | ..... | { Light guides of complex shape or comprising a portion having a complex shape }   |
| <b>NOTE</b>  |       |  |
| additional classification should be given in the groups characterising the shape of the light guides |       |  |
| F21S 48/2256   | ..... | { characterised by the emission area }   |
| F21S 48/2262   | ..... | { the light guide emitting on its extremity }  |
| F21S 48/2268   | ..... | { the light guide emitting on its surface }  |
| F21S 48/2275   | ..... | { characterised by the number of light sources coupled into the light guide }  |
| F21S 48/2281   | ..... | { Multiple light sources }   |
| F21S 48/2287   | ..... | { Single light source }  |
| F21S 48/2293   | ..... | { the light guide being used to transport light from a remote light source, e.g. from light generators }   |
| F21S 48/23   | ..    | { characterised by reflectors }  |
| F21S 48/232  | ...   | { Attachment thereof }   |
| F21S 48/234  | ...   | { Optical design thereof }   |
| F21S 48/236  | ....  | { using total internal reflection }  |
| F21S 48/238  | ...   | { Materials thereof, e.g. coatings }   |
| F21S 48/24   | ..    | { characterised by the combination of reflectors and refractors }  |
| F21S 48/25   | ..    | { characterised by aesthetical components or components other than light sources, reflectors, refractors, e.g. partition walls, covers or decorative trims } |
| F21S 48/255  | ...   | { Attachment thereof }   |
| F21S 48/30   | ..    | { Arrangements dedicated to purposes other than light emission or distribution }   |
| F21S 48/31   | ..    | { Protection of the lighting devices }   |
| F21S 48/32   | ..    | { Cooling of the lighting devices }  |
| F21S 48/321  | ...   | { Attachment of the means for cooling; Cooling arrangements }  |
| F21S 48/323  | ...   | { Forced cooling }   |
| F21S 48/325  | ....  | { using air or other gas }   |
| F21S 48/326  | ....  | { using liquid }   |
| F21S 48/328  | ...   | { Passive cooling }  |
| F21S 48/33   | ..    | { Waterproofing }  |
| F21S 48/332  | ...   | { Provisions for ventilation or drainage }   |
| F21S 48/335  | ....  | { specifically adapted for headlamps }   |
| F21S 48/337  | ....  | { specifically adapted for signal lamps }  |
| F21S 48/34   | ..    | { Heating of the lighting devices, e.g. for de-fogging }   |

**Guidance heading:**

**F21S 2017/00** Details solely applicable to the devices covered by groups **F21S 13/00** and **F21S 15/00**



F21S 2017/02

. Fastening and lifting of the lamp-glass