

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.

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

[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

[F21S 48/00](#) and subgroups

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

WARNING

[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}

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
- 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 **Non-electric lighting devices or systems employing light sources not covered by main groups [F21S 11/00](#), [F21S 13/00](#) or [F21S 19/00](#)**

F21S 19/00 **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**

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 [B63B 45/00](#))}

WARNING

[F21S 48/00](#) to [F21S 48/34](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [F21S 48/00](#) - [F21S 48/34](#) : [F21S 8/10](#)

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 ([F21S 48/1742](#) 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 B60Q)}

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 (F21S 48/1721 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 (light guides per se G02B 6/0001)}
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 (F21S 48/1757 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 (F21S 48/1768 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 (F21S 48/1168 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 (light guides per se G02B 6/0001)}
F21S 48/2231	.....	{ characterised by the shape of the light guide}
F21S 48/2237	.....	{ Bar or rod-like light guides}
F21S 48/2243	.....	{ Plate-like light guides}
F21S 48/225	.....	{ Light guides of complex shape or comprising a portion having a complex shape}

NOTE

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}

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