



MINISTERIO
DE INDUSTRIA
Y TURISMO

SECRETARÍA DE ESTADO DE
INDUSTRIA

DIRECCIÓN GENERAL DE ESTRATEGIA
INDUSTRIAL Y DE LA PEQUEÑA Y
MEDIANA EMPRESA

E9*148R00/05*16715*00

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COMUNICACIÓN / COMMUNICATION:

Concerniente a /
Concerning: ⁽¹⁾

La concesión de homologación / *Approval granted*
~~La extensión de homologación / *Approval extended*~~
~~La denegación de homologación / *Approval refused*~~
~~La retirada de homologación / *Approval withdrawn*~~
~~El cese definitivo de producción / *Production definitively discontinued*~~

de un tipo de lámpara en aplicación del Reglamento UN N° 148 /
of a type of lamp pursuant to UN Regulation No. 148

Lámpara /
Lamp: ⁽¹⁾

~~Luz de la placa de matrícula trasera / *Rear registration plate illuminating lamp*~~
~~Indicador de dirección / *Direction indicator lamp*~~
~~Luz de pare / *Stop lamp*~~
~~Luz de posición / *Position lamp*~~
~~Luz de galibo / *End-outline marker lamp*~~
~~Luz de marcha atrás / *Reversing lamp*~~
~~Luz de maniobra / *Manoeuvring lamp*~~
~~Luz antiniebla trasera / *Rear fog lamp*~~
~~Luz de estacionamiento / *Parking lamp*~~
~~Luz de circulación diurna / *Daytime running lamp*~~
~~Luz de posición lateral / *Side marker lamp*~~

Categoría de la lámpara /
Category of the lamp:

A, R1

Cambio de índice /
Change index: ---

Nº de homologación /
Approval No: E9*148R00/05*16715*00

Identificador Único (si procede) /
Unique Identifier (UI) (if applicable): ---

⁽¹⁾ Táchese lo que no proceda / *Strike out what does not apply*





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E9*148R00/05*16715*00

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1. Marca de fábrica o comercial del dispositivo o sistema / *Trade name or mark of the device or system*:
FRISTOM
2. Tipo dado por el fabricante para el dispositivo o sistema / *Manufacturer's name for the type of device or system*:
FT-147 LED
3. Nombre y dirección del fabricante / *Manufacturer's name and address*:
FRISTOM Spółka z ograniczoną odpowiedzialnością Spółka komandytowa
86-014 Sicienko / Polska ul. Przemysłowa 5 NIP: 5542926937, KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41

Nota / *Note*: Este dispositivo puede ser fabricado en cualquiera de las Plantas de Fabricación que consten declaradas en el Anexo I del Certificado Conformidad Producción en vigor emitido por la UCA. / *This device may be manufactured in any of the Manufacturing Plants declared in Annex I of the Conformity Production Certificate in force issued by the UCA.*

4. Si procede, nombre y dirección del representante del fabricante / *If applicable, name and address of the manufacturer's representative*: ---
5. Dispositivo presentado a homologación el / *Submitted for approval on*: 15/03/2024
6. Servicio técnico encargado de los ensayos de homologación / *Technical service responsible for conducting approval tests*: IDIADA
7. Fecha del informe emitido por dicho servicio / *Date of report issued by that service*: 19/03/2024
8. Número del informe emitido por dicho servicio / *Number of report issued by that service*: PC24030019
9. Breve descripción / *Concise description*:

9.1. En caso de / *In case of*

9.1.1. Una luz de la placa de matrícula trasera / *A rear-registration plate illuminating lamp*:

- Condiciones geométricas de instalación (posiciones e inclinaciones del dispositivo en relación al espacio ocupado por la placa de matrícula y/o diferentes inclinaciones de este espacio) / *Geometrical conditions of installation (position(s) and inclination(s) of the device in relation to the space to be occupied by the registration plate and/or different inclinations of this space)*: ---

9.1.2. Un indicador de dirección / *A direction indicator*: ---

- Activación secuencial de las fuentes luminosas / *Sequential activation of light sources*:
~~sí~~ / ~~yes~~ - ~~no~~ / ~~no~~ ⁽¹⁾

9.1.3. Una luz de marcha atrás / *A reversing lamp*: ---

- La luz sólo puede instalarse en un vehículo como parte de un par de luces / *The lamp shall be installed on a vehicle only as part of a pair of lamps*: ~~sí~~ / ~~yes~~ - ~~no~~ / ~~no~~ ⁽¹⁾

9.1.4. Una luz de maniobra / *A manoeuvring lamp*: ---

⁽¹⁾ Táchese lo que no proceda / *Strike out what does not apply*

Pº DE LA CASTELLANA, 160, 10ª - 28071 MADRID

TLF.: 91 349.51.08

SEDE-E <https://sedeeaplicaciones.minetur.gob.es/consultasSGCSI/>



Código: 14645085-91343674K34HML9NVNJC Autenticidad verificable en: <https://serviciosmin.gob.es/arce>
Documento electrónico, página 2 de 6.

Firmado el 26/03/2024 10:08:54 : JORDI GARCIA BRUSTENGA, Director General de Estrategia Industrial y de la Pyme de Direccion General de Estrategia Industrial y de la Pequeña y Mediana Empresa.



- La altura máxima de montaje / *The maximum mounting height*: ---

9.1.5. Una luz de circulación diurna / *A daytime running lamp*:---

- La intensidad luminosa máxima no excede 700 cd / *Maximum luminous intensity does not exceed 700 cd*: ~~si~~
~~/yes-no/no~~⁽¹⁾

9.2. Por función de luz de señalización y categoría / *By light signalling function and category*:

- Para la instalación en el exterior ~~o en el interior o ambos~~⁽¹⁾ / *For mounting either outside or inside or both*⁽¹⁾
- Color de luz emitida / *Colour of light emitted*:
 - Luz de posición / *Position lamp*: ~~roja / red~~ - blanca / *white* - ~~ambar / amber~~ - ~~incolora / colourless~~⁽¹⁾
- Número, categoría(s) y tipo de la(s) fuente(s) luminosa(s) / *Number, category and kind of light source(s)*:
 - Luz de posición / *Position lamp*: 6 x LED (White color) + 6 x LED (Red color)
- Luz homologada para fuente(s) luminosa(s) sustitutiva(s) de LED. En caso afirmativo, categoría de la(s) fuente(s) de luz sustitutiva(s) de LED / *Lamp approved for LED substitute light source(s). If yes, category of LED substitute light source(s)*:
 - Luz de posición / *Position lamp*: ~~si/yes~~ - no / *no*⁽¹⁾
- Voltaje y potencia / *Voltage and wattage*:
 - Luz de posición / *Position lamp*: 12/24V, 0.7W / 1.5W
- Módulo de fuente de luz / *Light source module*:
 - Luz de posición / *Position lamp*: ~~si/yes~~ - no / *no*⁽¹⁾
- Código de identificación específico del módulo de fuente de luz / *Light source module specific identification code*:
 - Luz de posición / *Position lamp*: ---
- Solo para instalación limitada en altura igual o inferior a 750 mm por encima del suelo, si procede / *Only for limited mounting height of equal to or less than 750 mm above the ground, if applicable*:
 - Luz de posición / *Position lamp*: ~~si/yes~~ - no / *no*⁽¹⁾
- Condiciones geométricas de instalación y variaciones relacionadas, si se da el caso / *Geometrical conditions of installation and relating variations, if any*: ---
- Aplicación de una guía de control electrónica/control de intensidad variable de la(s) fuente(s) luminosa(s) / *Application of an electronic light source control gear/variable intensity control*:
 - Luz de posición / *Position lamp*:
 - (a) Formando parte de la luz / *Being part of the lamp*: ~~si/yes~~ - no / *no*⁽¹⁾
 - (b) No formando parte de la luz / *Being not part of the lamp*: ~~si/yes~~ - no / *no*⁽¹⁾
- Tensión(es) de entrada suministrada(s) por la guía de control electrónica/control de intensidad variable la(s) fuente(s) luminosa(s) / *Input voltage(s) supplied by an electronic light source control gear/variable intensity control*: ---

⁽¹⁾ Táchese lo que no proceda / *Strike out what does not apply*



Firmado el 26/03/2024 10:08:54 : JORDI GARCIA BRUSTENGA, Director General de Estrategia Industrial y de la Pyme de Dirección General de Estrategia Industrial y de la Pequeña y Mediana Empresa.



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E9*148R00/05*16715*00

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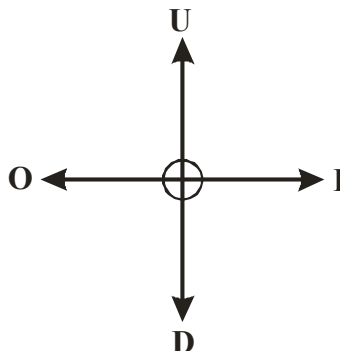
- Fabricante de la guía de control electrónica/control de intensidad variable de la(s) fuente(s) luminosa(s) y número de identificación (cuando la guía de control de la fuente luminosa forma parte de la luz pero no está incluida en el cuerpo de la luz) / *Electronic light source control gear/variable intensity control manufacturer and identification number (when the light source control gear is part of the lamp but is not included into the lamp body): ---*
 - Intensidad luminosa variable, si procede / *Variable luminous intensity, if applicable: sí/yes - no / no* ⁽¹⁾
 - Función(es) producida(s) por una luz interdependiente que forma parte de un sistema de luces interdependientes, si procede / *Function(s) produced by an interdependent lamp forming part of an interdependent lamp system, if applicable: ---*
- 9.3. La luz de posición delantera, ~~luz de posición trasera, luz de pare, luz de galibo, luz de circulación diurna~~ ⁽¹⁾ es sólo para uso en un vehículo equipado con un testigo que indique el fallo / *The front position lamp, ~~rear position lamp, stop lamp, end-outline marker lamp, daytime running lamp~~* ⁽¹⁾ is only for use on a vehicle fitted with a tell-tale indicating failure: sí / yes - ~~no/no~~ ⁽¹⁾
10. Posición de la marca de homologación / *Position of the approval mark*: Ver documentación suministrada por el fabricante. / *See documentation supplied by the manufacturer.*
11. Motivo(s) de la extensión (si procede) / *Reason(s) for extension (if applicable): --*
12. Se concede/~~deniega/~~extiende/~~retira~~ la homologación ⁽¹⁾ / *Approval granted/~~extended/refused/withdrawn~~* ⁽¹⁾
13. Homologación concedida para los dispositivos destinados a ser utilizados en vehículos ya en uso únicamente / *Approval granted for devices to be used on vehicles already in use only: sí/yes - no / no* ⁽¹⁾
14. Lugar / *Place*: Madrid
15. Fecha / *Date*: Ver firma electrónica. / *See electronic signature.*
16. Firma / *Signature*:
- EL DIRECTOR GENERAL DE ESTRATEGIA INDUSTRIAL Y DE LA PEQUEÑA Y MEDIANA EMPRESA
- P.D. Orden ITU/103/2024, de 8 de febrero de 2024
17. La lista de los documentos depositados ante la Autoridad de homologación de Tipo que ha concedido la homologación se adjunta a la presente comunicación y puede obtenerse previa solicitud. / *The list of documents deposited with the Type Approval Authority which has granted approval is annexed to this communication and may be obtained on request.*
- Informe del ensayo. / *Test report.*
 - Documentación suministrada por el fabricante. / *Documentation supplied by the manufacturer.*

⁽¹⁾ Táchese lo que no proceda / *Strike out what does not apply*





SUPERFICIE ILUMINANTE / ILLUMINATING SURFACE



Límite superior / Upper boundary “U” (mm)	Límite inferior / Down boundary “D” (mm)	Límite interior / Inner boundary “I” (mm)	Límite exterior / Outer boundary “O” (mm)
14	14	16	15

THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE2594
LOS ENSAYOS HAN SIDO REALIZADOS POR IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) ACREDITADO POR ENAC CON NÚMERO DE ACREDITACIÓN 35/LE2594

Validate this report with the security code «ETMOWJFG» at: <https://extranet.idiada.com/hom-cve>
Verifique el informe con código de seguridad «ETMOWJFG» en: <https://extranet.idiada.com/hom-cve>

IDIADA PC24030019

- * LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA.
THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.
- * QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA.
THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.
- * EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS.
MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.
- * LA REGLA DE DECISIÓN UTILIZADA, SEGÚN LA NORMA ILAC-G8, HA SIDO LA DECLARACIÓN BINARIA DE ACEPTACIÓN SIMPLE
THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

INFORMATION FOLDER:

FIRST APPLICATION
DATE: 15.03.2024

1. Specification data

Type	FT-147 LED	
Trade name or mark	Fristom	
Variants	See drawing	
Function	front position ; rear position	
Color	white and red color	
Rated	Voltage	12/24V
	Wattage	0,75/1,5W
Applicable Regulation		R148
Light Source and connection		See drawing
Location of marking	Light Source marks	See the drawing
	Trade mark	See the drawing
	Approval mark	See the drawing

2. Construction and material

Construction	Material	Remarks
Lenses	Defined on the technical drawing	--
Reflectors	Defined on the technical drawing	--
Bases	Defined on the technical drawing	--

3. Name and address of manufacturer:

FRISTOM Spółka z ograniczoną odpowiedzialnością Spółka komandytowa
86-014 Sicienko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41

4. REASON OF THE APPROVAL EXTENSION:

-

NOTE : APPROVAL MARKINGS ARE SHOWN IN THE ATTACHED DRAWING.
THIS INFORMATION FOLDER CONSISTS OF 1 PAGES

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
86-014 Sicienko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: Karol Jonoszak	Date: 14-03-2024	Sheet: 1 of 12
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Type: FT-147 LED

LED front and rear position lamp

Light source:

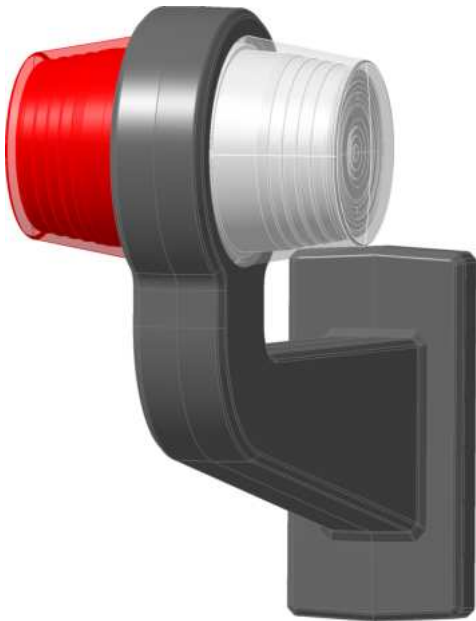
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

isometric lamp view

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
86-014 Sicienko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 2 of 12

Type: FT-147 LED

LED front position lamp

Light source:

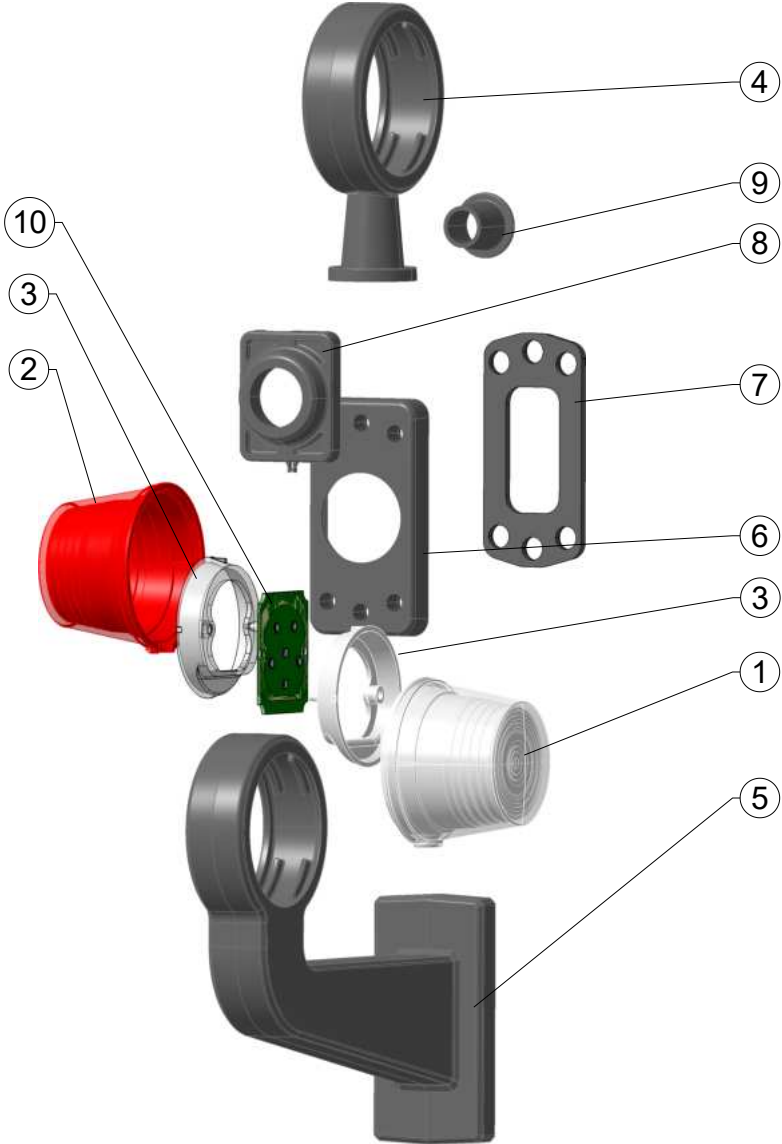
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

isometric lamp view

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



	Description
1	Lampshade white
2	Lampshade red
3	Inner sealing ring
4	Mounting bracket A
5	Mounting bracket F
6	Fixing element
7	Overmoulded reinforcement
8	Clamping bracket
9	Sleeve
10	PCB

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 3 of 12

Type: **FT-147 LED**

LED front and rear position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

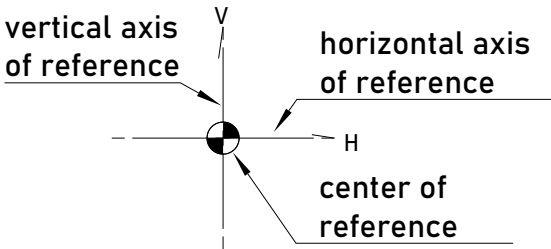
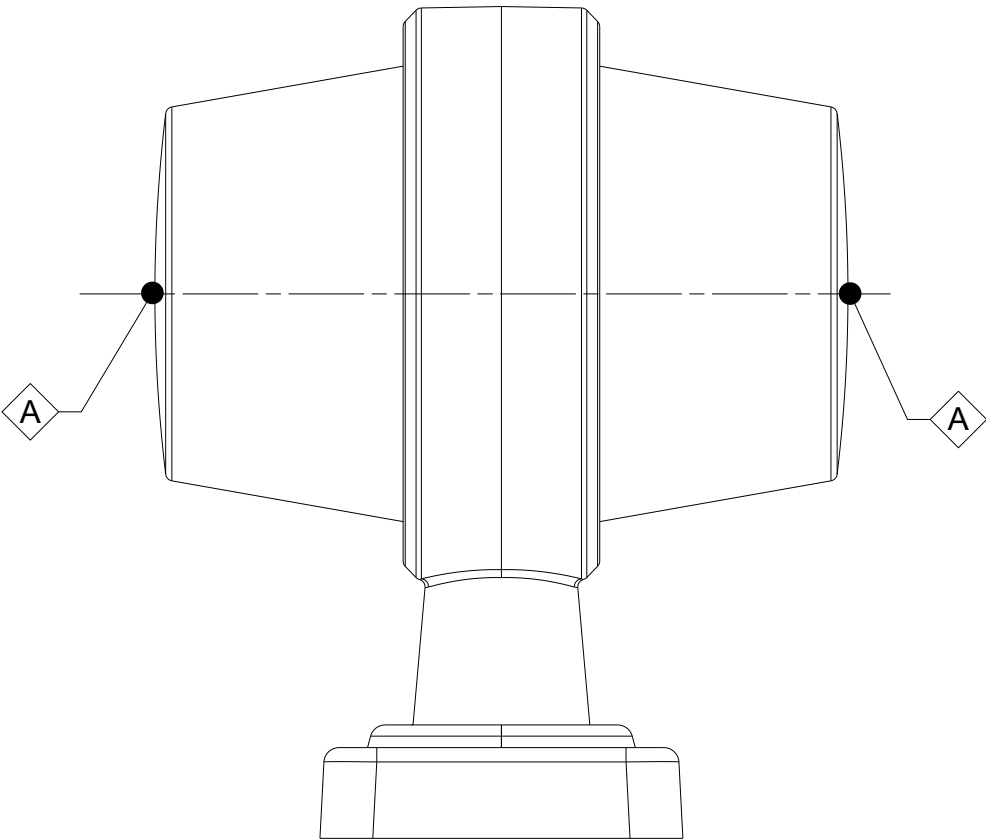
Description:

general drawing , light
emitting areas

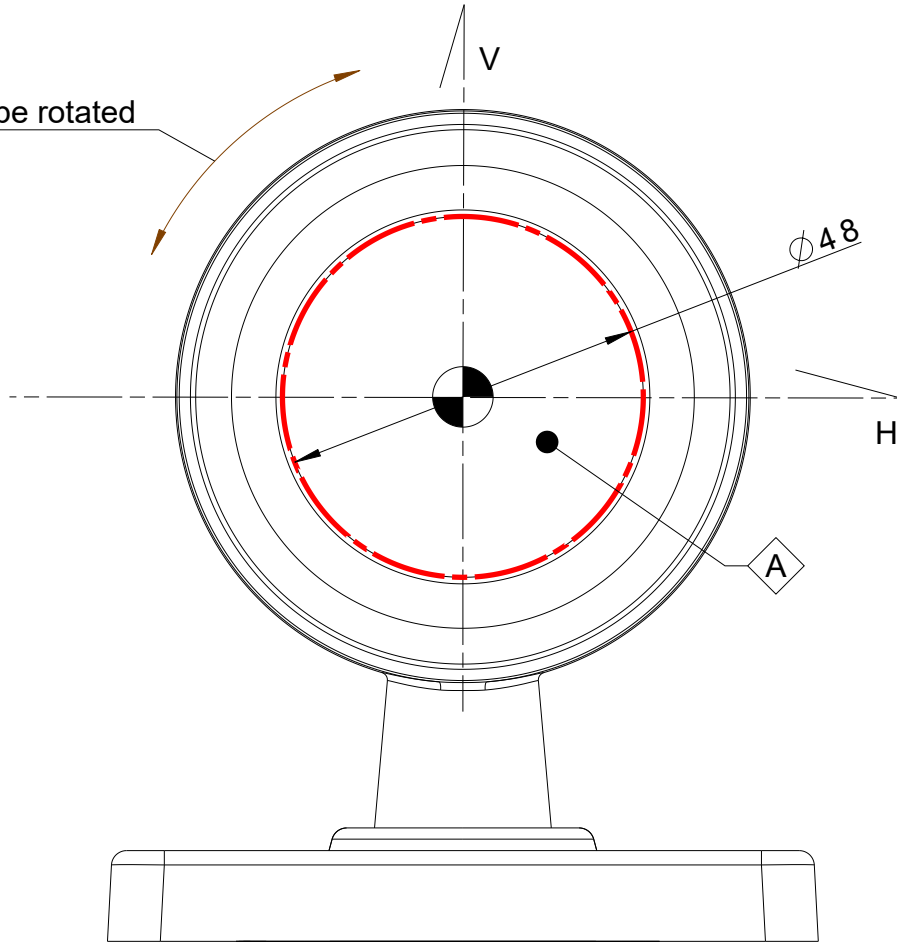
This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



can be rotated



A light emitting area [rear position light R1
or front position light A1]

Manufacturer:
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 4 of 12

Type: **FT-147 LED**

LED front position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

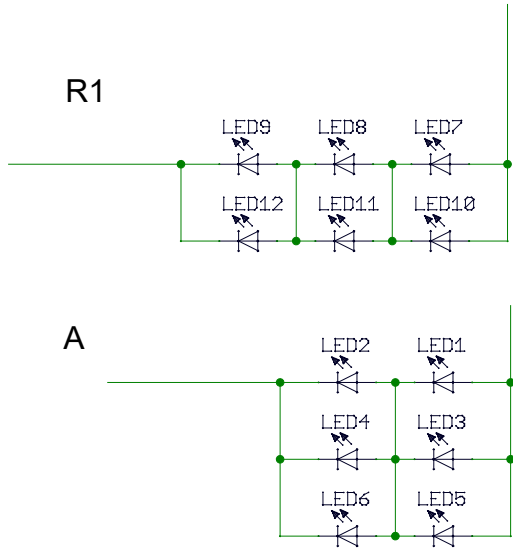
approval , trademark and electrical parameters markings
electrical connection of LED's

This drawing is a part of the application for approval

Material used in manufacturing :

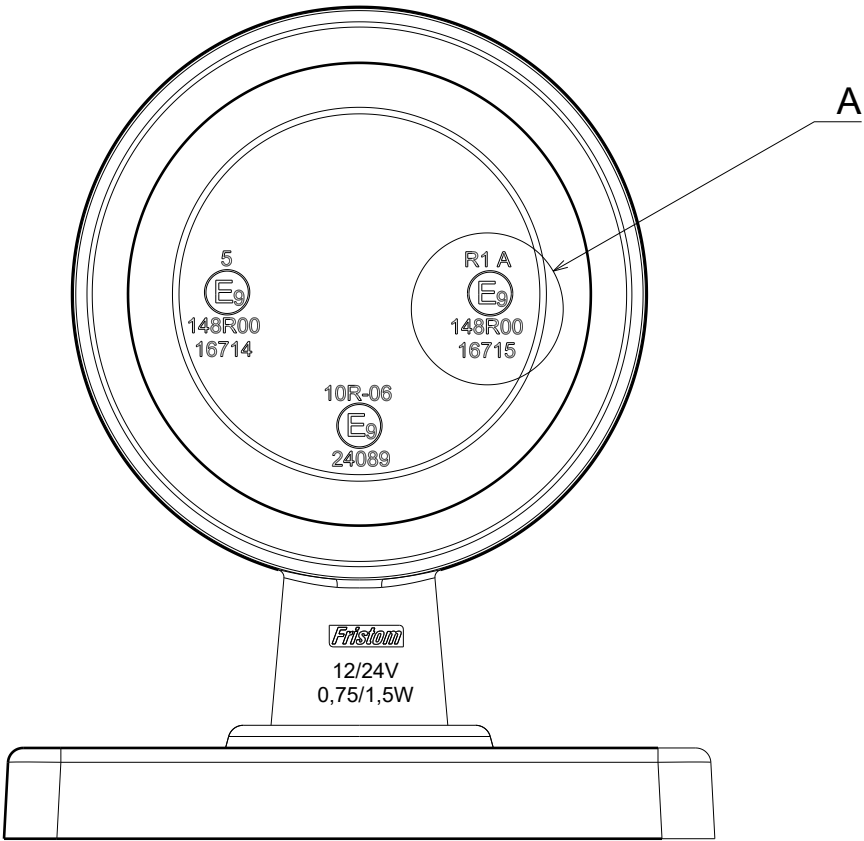
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	

electrical connection

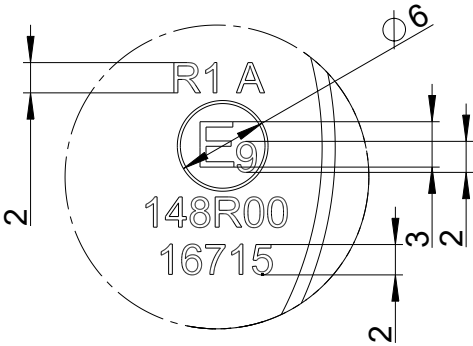


electrical data

12/24 V DC input
0,75/1,5W



approval marking dimensions



Detail A
Scale: 2:1

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
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Type: FT-147 LED

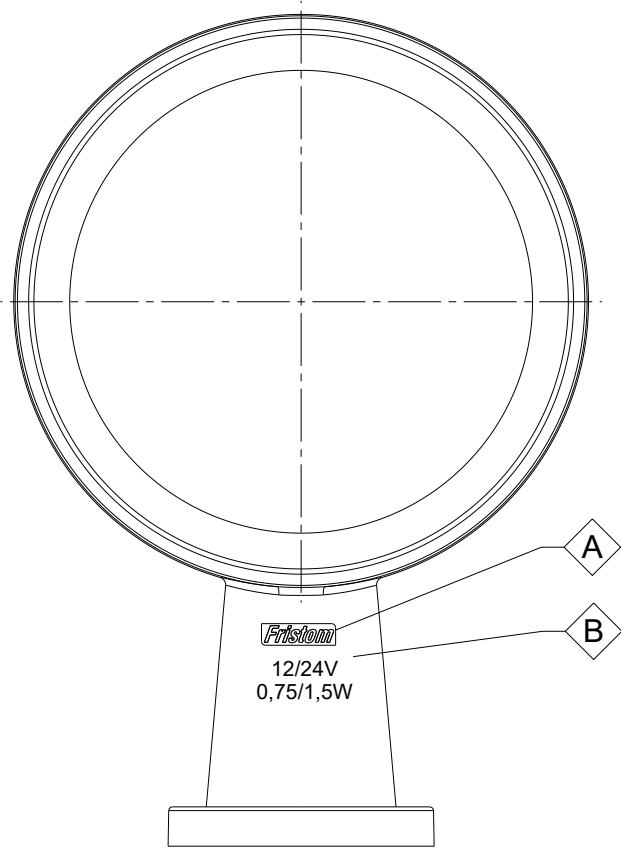
LED front position lamp

Light source:
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:
approval , trademark and electrical parameters markings

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



A	trademark location
B	electric parameters



Detail A

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
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Drawn by: Karol Jonoszak	Date: 14-03-2024	Sheet: 6 of 12
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Type: **FT-147 LED**

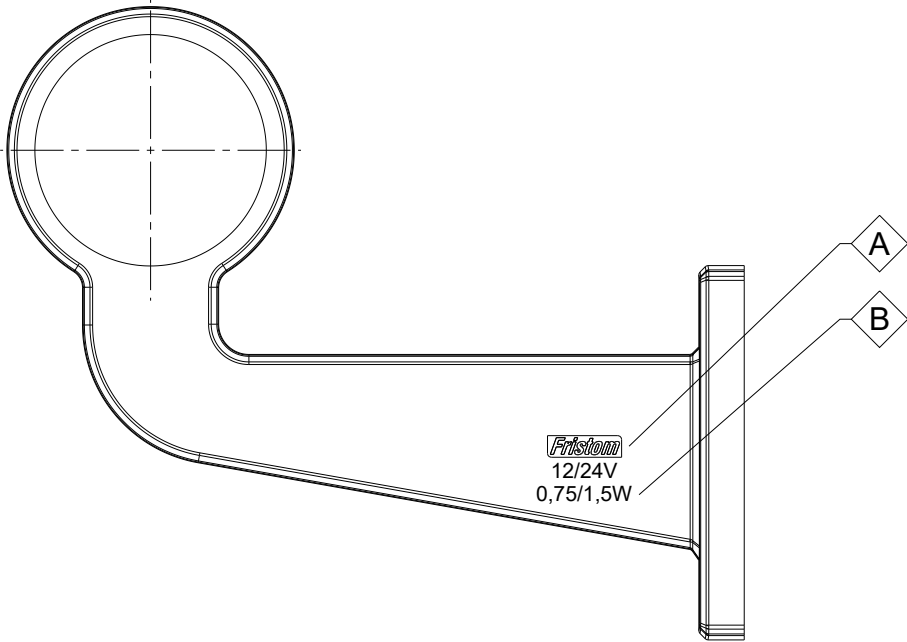
LED front position lamp

Light source:
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:
approval , trademark and electrical parameters markings

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



A	trademark location
B	electric parameters



Detail A

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 7 of 12

Type: **FT-147 LED**

LED front position lamp

Light source:

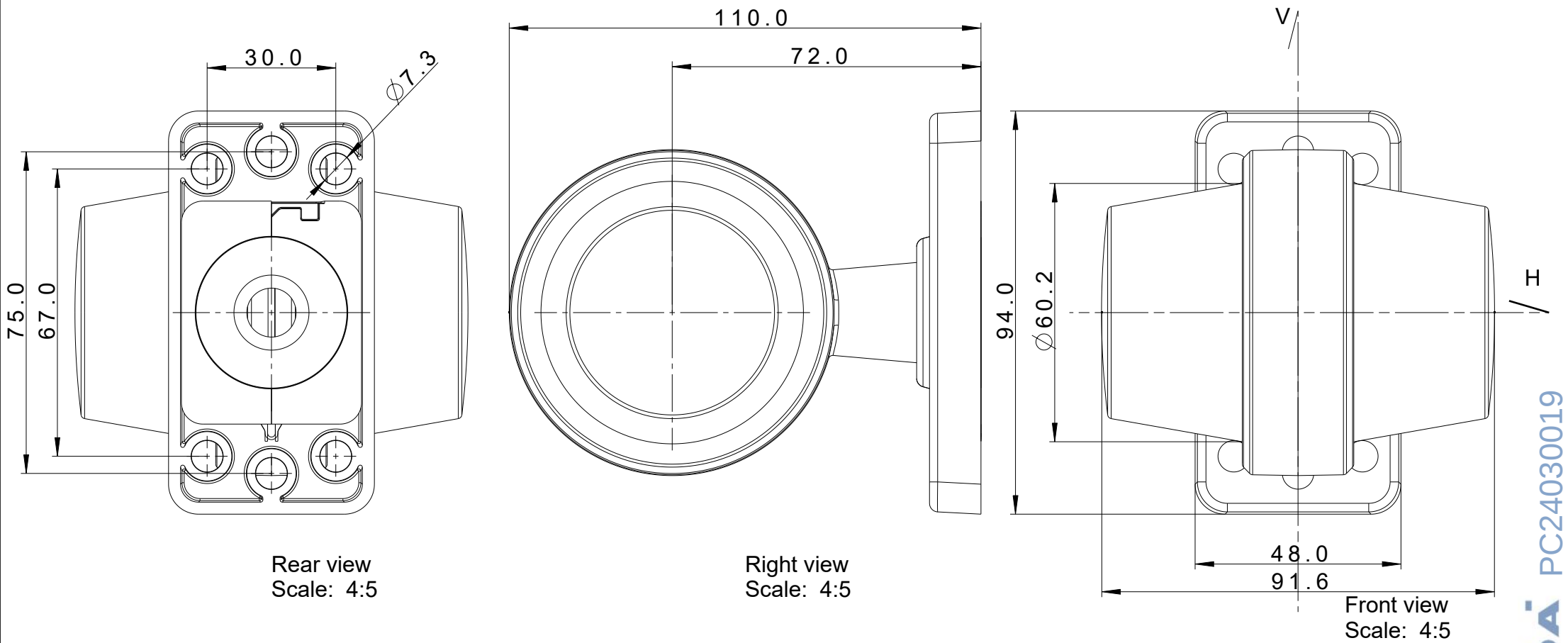
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

general drawing

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



Manufacturer:
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 8 of 12

Type: **FT-147 LED**

LED front position lamp

Light source:

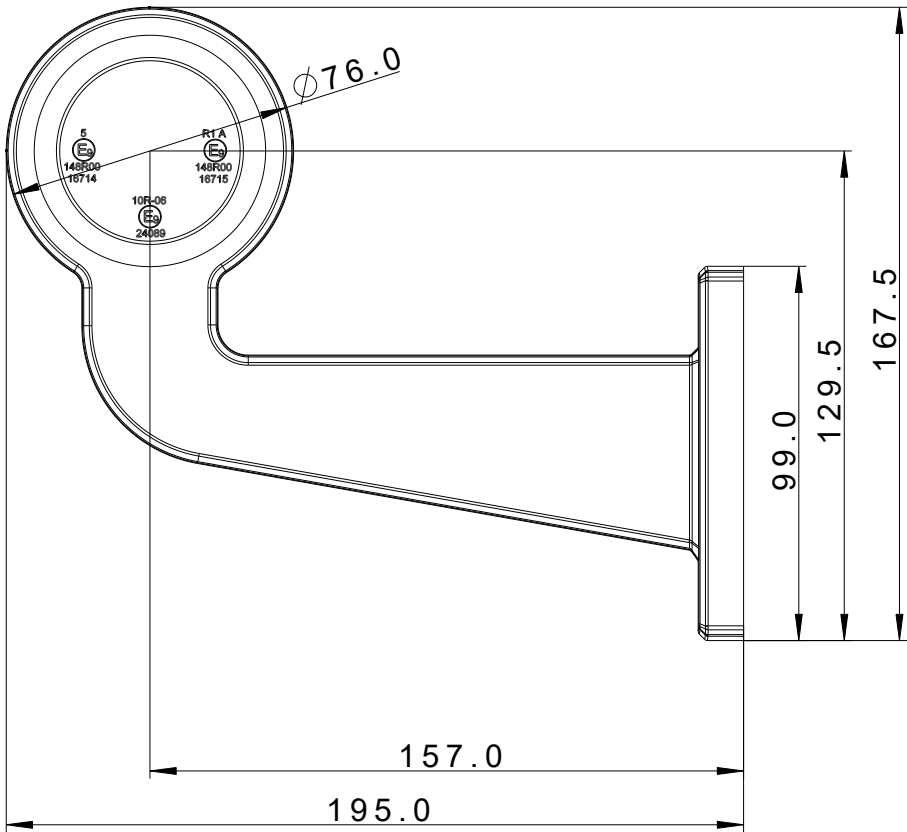
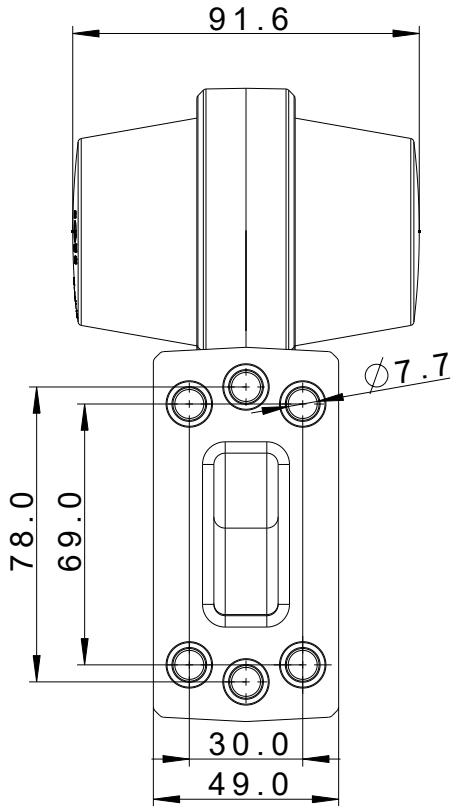
LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

general drawing

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



Front view
Scale: 1:2

Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
86-014 Sicienko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 9 of 12

Type: FT-147 LED

LED front position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

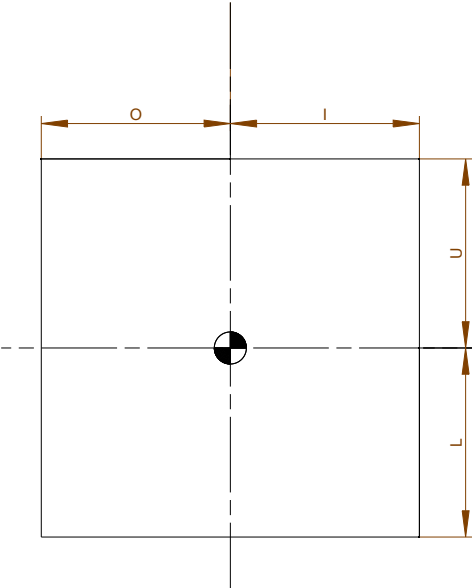
Description:

lighting surface

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	



lighting surface				
function	U (upper limit) [mm]	L (lower limit) [mm]	O (outer limit) [mm]	I (inner limit) [mm]
A1	24	24	24	24
R1	24	24	24	24

Determining the lower, upper and lateral limits of the ilumination surface of the lamp device.

According to ECE regulation 48/06 " Instalation of light-signalling devices clause 2.10.3.2.

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Drawn by: Karol Jonaszak
Date: 14-03-2024
Sheet: 10 of 12

Type:
FT-147 LED
LED front position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

positioning on vehicle

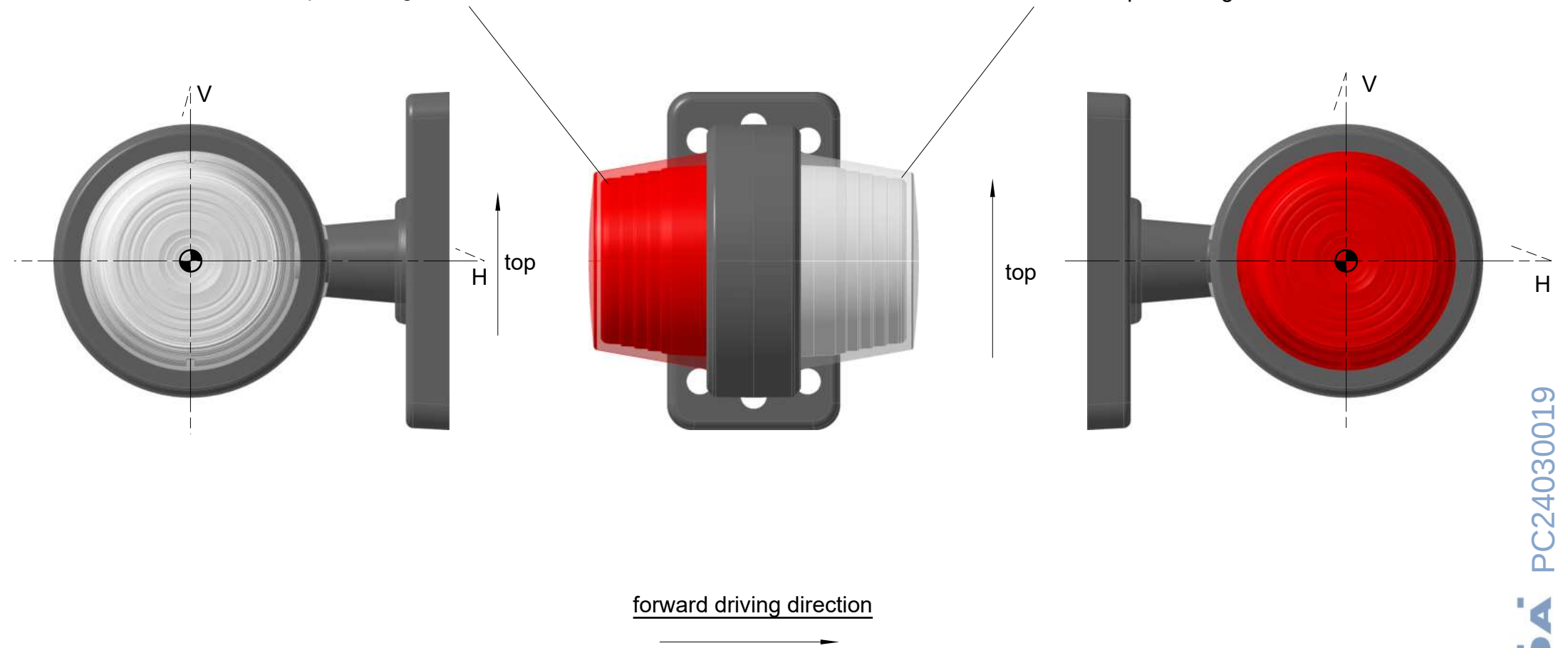
This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	

function: rear position light R1

function: front position light A1



Manufacturer:
FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
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Drawn by: Karol Jonoszak
Date: 14-03-2024
Sheet: 11 of 12

Type: **FT-147 LED**

LED front position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

positioning on vehicle

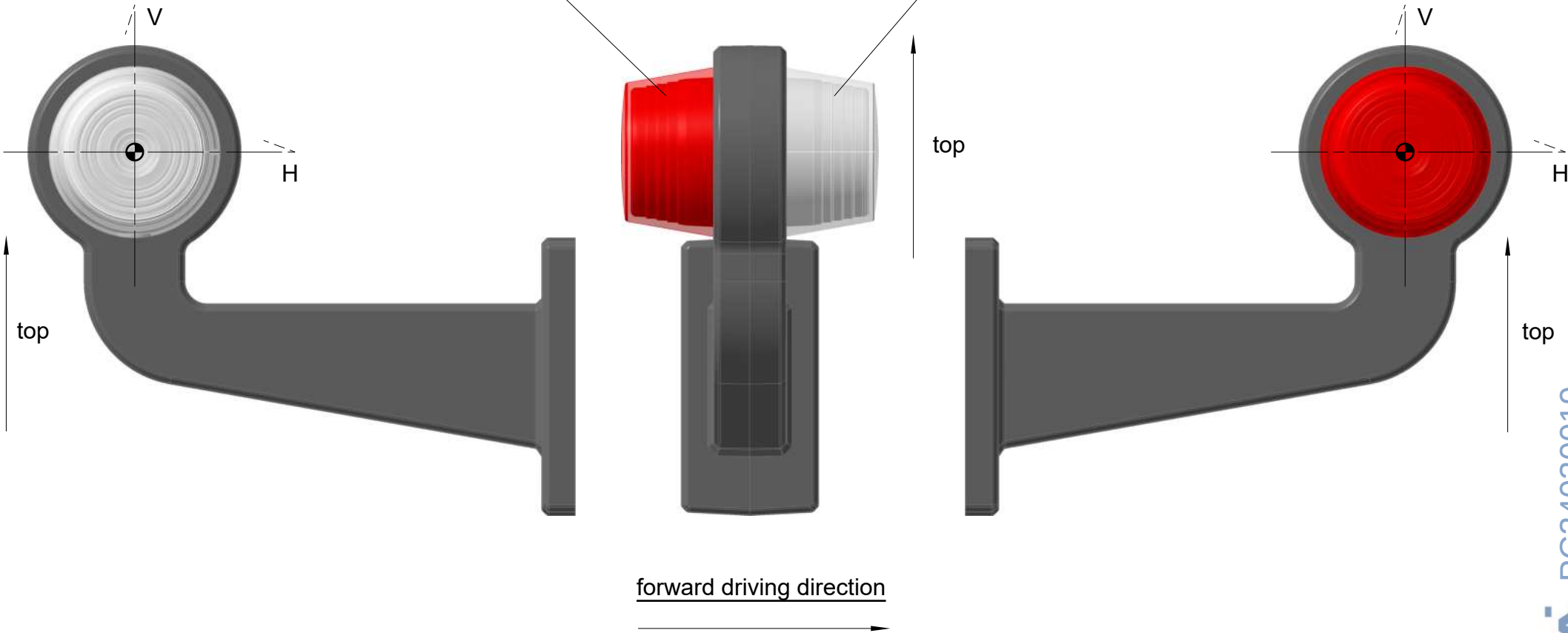
This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	

function: rear position light R1

function: front position light A1



Manufacturer:
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Drawn by:	Date:	Sheet:
Karol Jonoszak	14-03-2024	12 of 12

Type: **FT-147 LED**

LED front position lamp

Light source:

LED CHIP SMD chip mounted
6 LED's white light color
6 LED's red light color

Description:

variants / tradenames

This drawing is a part of the application for approval

Material used in manufacturing :		
part	material	color
lampshade	PMMA	red transparent
lampshade	PMMA	clear transparent
mounting bracket	TPE SEBS	black
inner sealing ring	ABS	red or black
fixing element	PP	black
overmoulded reinforcement	PA GF 30	black
PCB	FR4	
sealing	potting compound - epoxy resin	

FT-147 A B/C LED	LED white/red clearance marker lamp on a short straight rubber bracket with a cable.
FT-147 A C/Z LED	LED red/yellow clearance marker lamp on a short straight rubber bracket with a cable.
FT-147 A Z/Z LED	LED yellow/yellow clearance marker lamp on a short straight rubber bracket with a cable.
FT-147 F L B/C LED	LED white/red clearance marker lamp left on a long L-shaped rubber bracket with a cable.
FT-147 F P B/C LED	LED white/red clearance marker lamp right on a long L-shaped rubber bracket with a cable.
FT-147 F L C/Z LED	LED red/yellow clearance marker lamp left on a long L-shaped rubber bracket with a cable.
FT-147 F P C/Z LED	LED red/yellow clearance marker lamp right on a long L-shaped rubber bracket with a cable.
FT-147 F Z/Z LED	LED yellow/yellow clearance marker lamp on a long L-shaped rubber bracket with a cable.