



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*16658*00

Página / Page 1/5



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~~La retirada de homologación / *Approval withdrawn*~~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:

2a R1 S1

Cambio de índice /
Change index:

N° de homologación /
Approval No:

E9*148R00/05*16658*00

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

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





1. Marca de fábrica o comercial de la lámpara / *Trade name or mark of the lamp*: Fristom
2. Tipo dado por el fabricante para la luz / *Manufacturer's name for the type of lamp*: FT-313 LED
3. Nombre y dirección del fabricante / *Manufacturer's name and address*:
FRISTOM Spółka z ograniczoną odpowiedzialnością
Spółka komandytowa ul. Przemysłowa 5
86-014 Sicienko, BYDGOSZCZ (POLONIA / POLAND)

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*: 26/03/2024
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*: 26/03/2024
8. Número del informe emitido por dicho servicio / *Number of report issued by that Service*: PC24020296
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*





- 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*: sí / ~~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*:
 - Indicador de dirección / *Direction indicator lamp*: ~~roja~~ / ~~red~~ - ~~blanca~~ / ~~white~~ - ~~ambar~~ / ~~amber~~ - ~~incolora~~ / ~~colourless~~ ⁽¹⁾
 - Luz de pare / *Stop lamp*: ~~roja~~ / ~~red~~ - ~~blanca~~ / ~~white~~ - ~~ambar~~ / ~~amber~~ - ~~incolora~~ / ~~colourless~~ ⁽¹⁾
 - 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)*:
 - Indicador de dirección / *Direction indicator lamp*: 12x LEDs amber color
 - Luz de pare / *Stop lamp*: 16x LEDs red light color
 - Luz de posición / *Position lamp*: 24x LEDs red light 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)*:
 - Indicador de dirección / *Direction indicator lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de pare / *Stop lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de posición / *Position lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
- Voltaje y potencia / *Voltage and wattage*:
 - Indicador de dirección / *Direction indicator lamp*: 12V / 2.4W
 - Luz de pare / *Stop lamp*: 12V / 1.2W, 24V / 2.4 W
 - Luz de posición / *Position lamp*: 12V / 3W
- Módulo de fuente de luz / *Light source module*:
 - Indicador de dirección / *Direction indicator lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de pare / *Stop lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de posición / *Position lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
- Código de identificación específico del módulo de fuente de luz / *Light source module specific identification code*:
 - Indicador de dirección / *Direction indicator lamp*: ---
 - Luz de pare / *Stop lamp*: ---
 - 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*:
 - Indicador de dirección / *Direction indicator lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de pare / *Stop lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾
 - Luz de posición / *Position lamp*: ~~sí~~ / ~~yes~~ - no / no ⁽¹⁾

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





- 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:*
 - Indicador de dirección / *Direction indicator lamp:*
 - (a) Formando parte de la luz / *Being part of the lamp: sí+yes - no / no* ⁽¹⁾
 - (b) No formando parte de la luz / *Being not part of the lamp: sí+yes - no / no* ⁽¹⁾
 - Luz de posición / *Position lamp:*
 - (a) Formando parte de la luz / *Being part of the lamp: sí+yes - no / no* ⁽¹⁾
 - (b) No formando parte de la luz / *Being not part of the lamp: sí+yes - no / no* ⁽¹⁾
 - Luz de pare / *Stop lamp:*
 - (a) Formando parte de la luz / *Being part of the lamp: sí+yes - no / no* ⁽¹⁾
 - (b) No formando parte de la luz / *Being not part of the lamp: sí+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: ---*
- 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.*

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





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MEDIANA EMPRESA

E9*148R00/05*16658*00

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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.*

Nota / Note:

En el caso de la luz de posición trasera recíprocamente incorporada a una luz de pare, la lámpara deberá / *In the case of rear position lamp reciprocally incorporated with a stop lamp, the lamp shall either:*

- ~~Ser parte de un conjunto de fuente de luz múltiple.~~ / *Be a part of a multiple light source arrangement.* ⁽¹⁾
- Estar destinado a ser utilizado en un vehículo equipado con un sistema de seguimiento de fallo para esa función. / *Be intended for use in a vehicle equipped with a failure monitoring system for that function.* ⁽¹⁾

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



INFORMATION FOLDER:

FIRST APPLICATION
DATE: 26.03.2024

1. Specification data

Type	FT-313 LED	
Trade name or mark	Fristom	
Variants	See drawing	
Function	Rear position R1;stop S1;direction indicator 2a	
Color	Red and amber light color	
Rated	Voltage	12/24V
	Wattage	R1-3W ; S1-1,2/2,4W ; 2a-2,4W
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: 13-02-2024
Sheet: 1 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

Description:

isometric lamp view

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



Isometric view
 Scale: 4:5

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: 13-02-2024
Sheet: 2 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

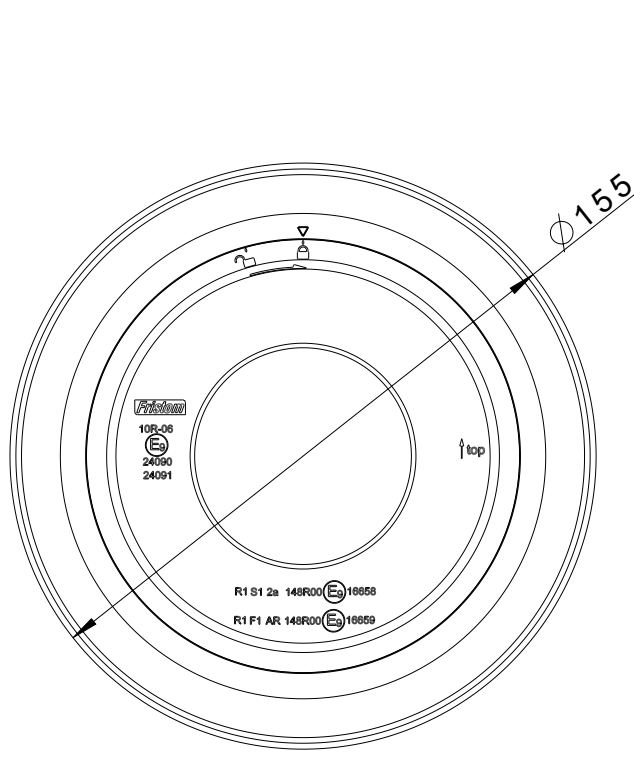
Description:

general drawing

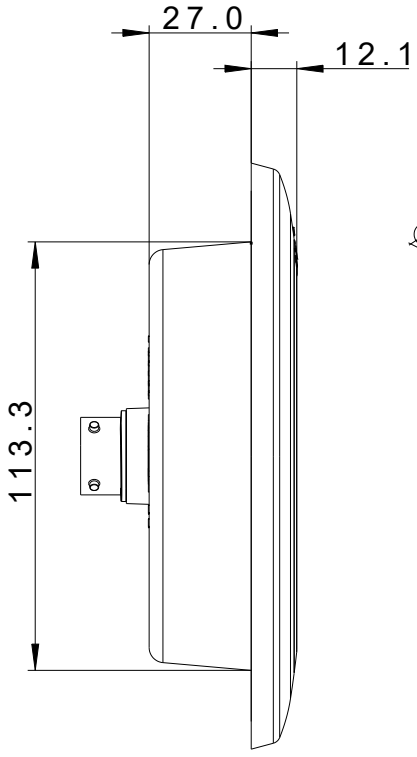
This drawing is a part of the application for approval

Material used in manufacturing :

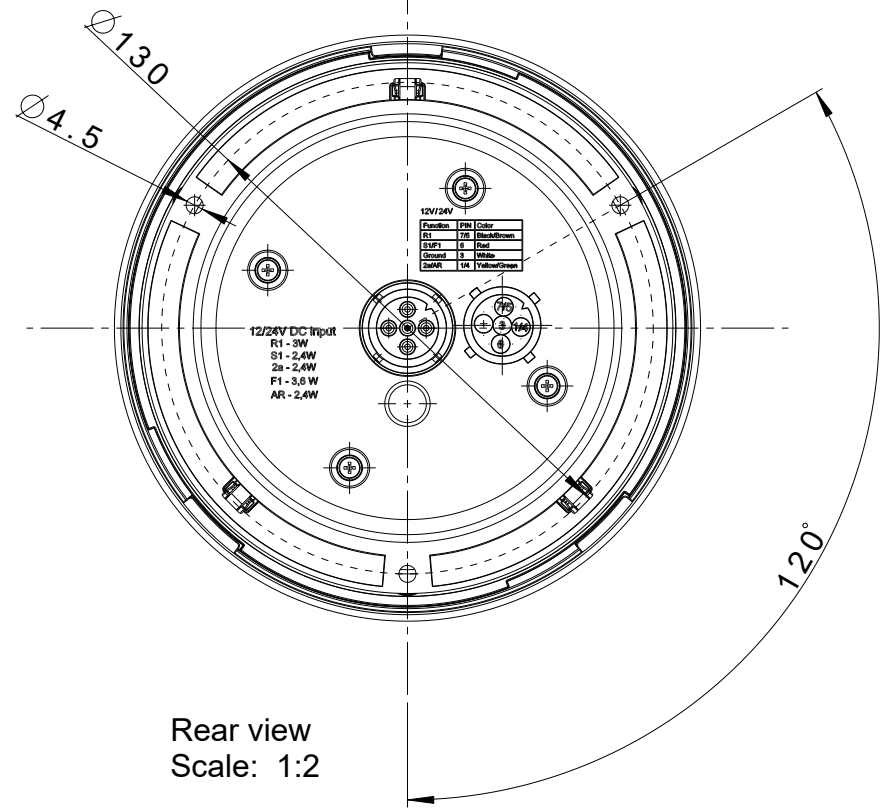
part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



Front view[3]
 Scale: 1:2



Left view[2]
 Scale: 1:2



Rear view
 Scale: 1:2

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: 13-02-2024
Sheet: 3 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

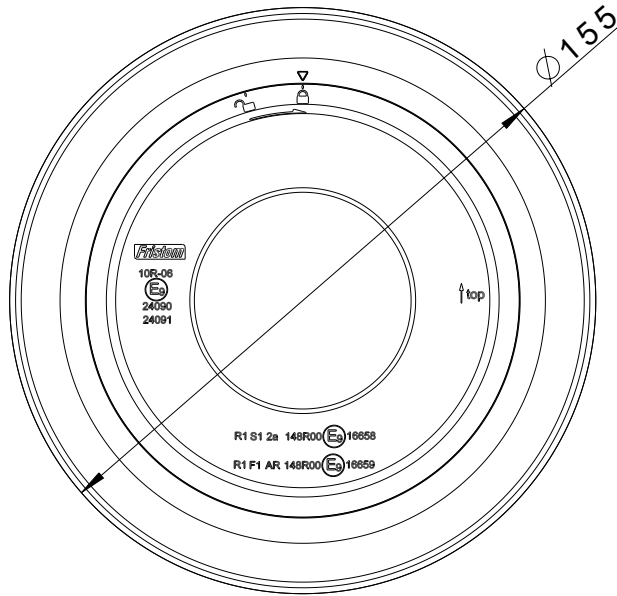
LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

Description:

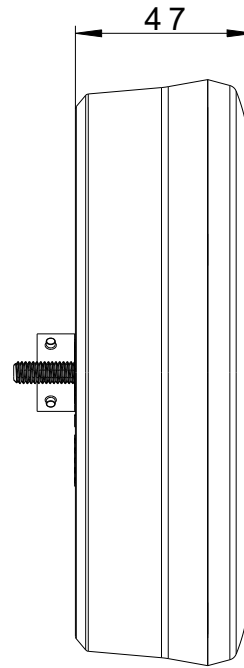
general drawing
 electrical connection of LED's
 This drawing is a part of the application for approval

Material used in manufacturing :

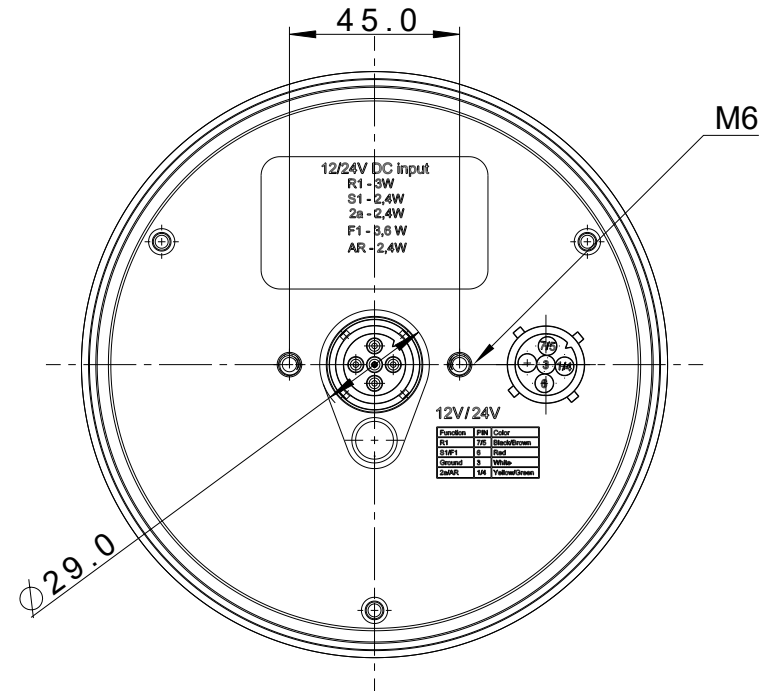
part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



Front view[2]
 Scale: 1:2



Left view[3]
 Scale: 1:2



Rear view[2]
 Scale: 1:2

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: 13-02-2024
Sheet: 4 of 13

Type: FT-313 LED

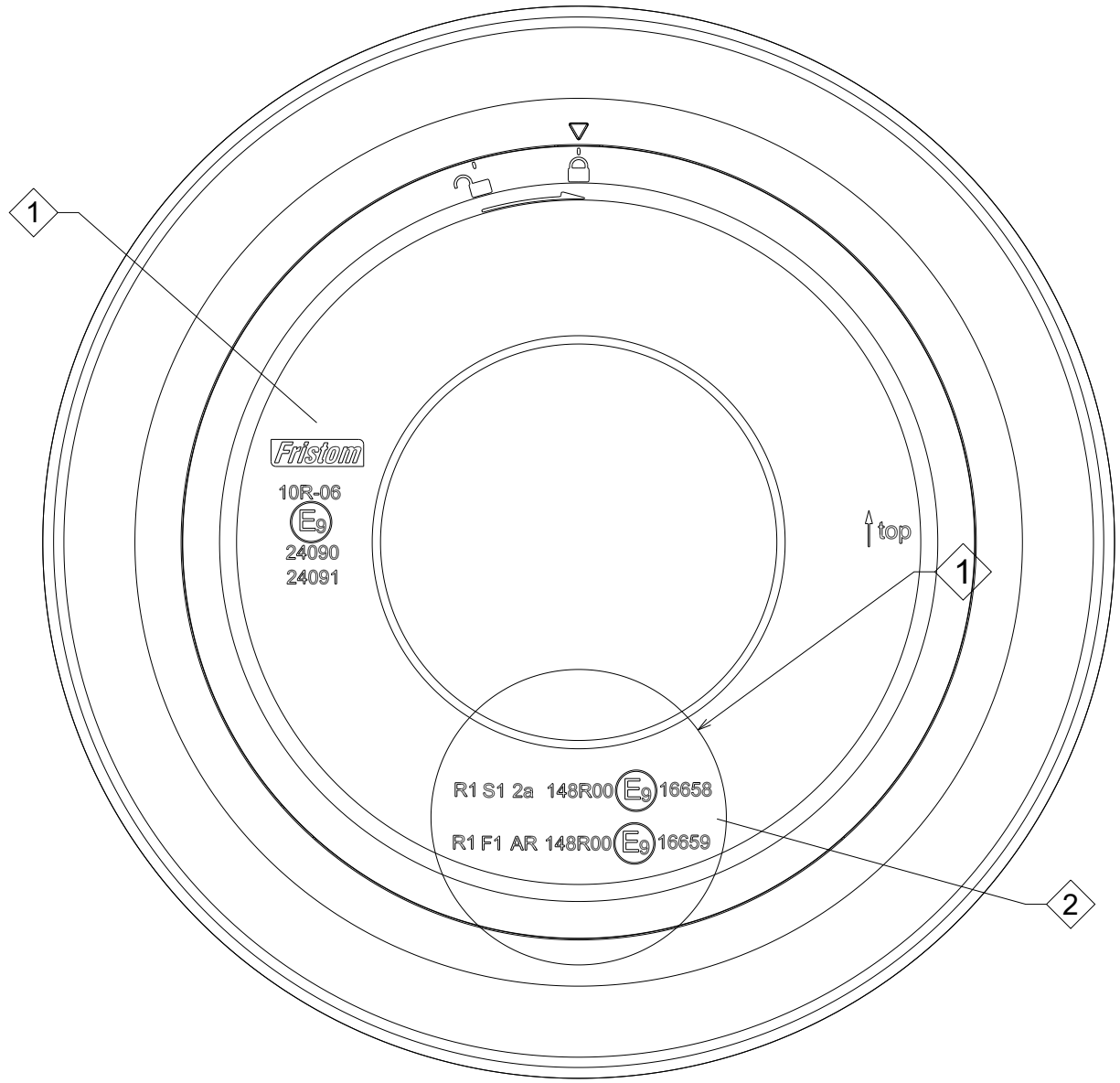
rear combined lamp (rear position; stop; direction indicator)

Light source:
 LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

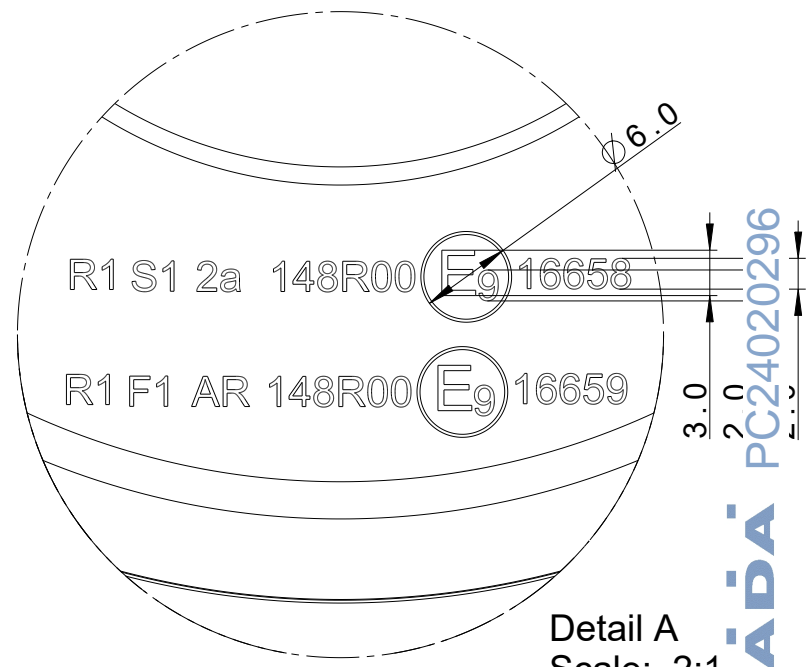
Description:
 approval and trademark markings
 This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



- 1 trademark location
- 2 approval number



Detail A
 Scale: 2:1

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: 13-02-2024
Sheet: 5 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

Description:

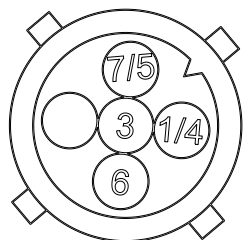
electrical parameters markings

This drawing is a part of the application for approval

Material used in manufacturing :

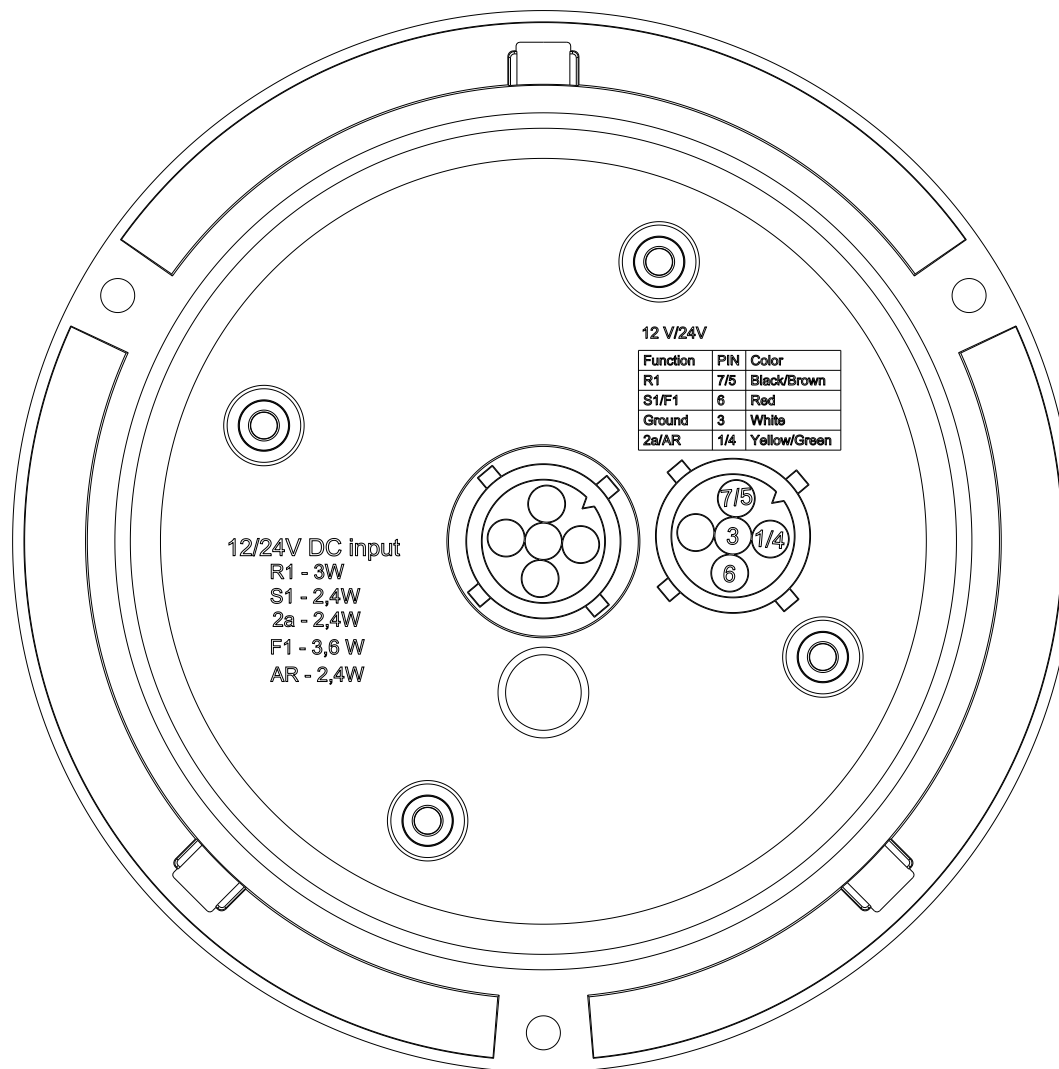
part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	

electrical
markings outside
rear housing for
recessed
assembly



12 V/24V

Function	PIN	Color
R1	7/5	Black/Brown
S1/F1	6	Red
Ground	3	White
2a/AR	1/4	Yellow/Green



Manufacturer:

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



Drawn by: Karol Jonoszak
Date: 13-02-2024
Sheet: 6 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

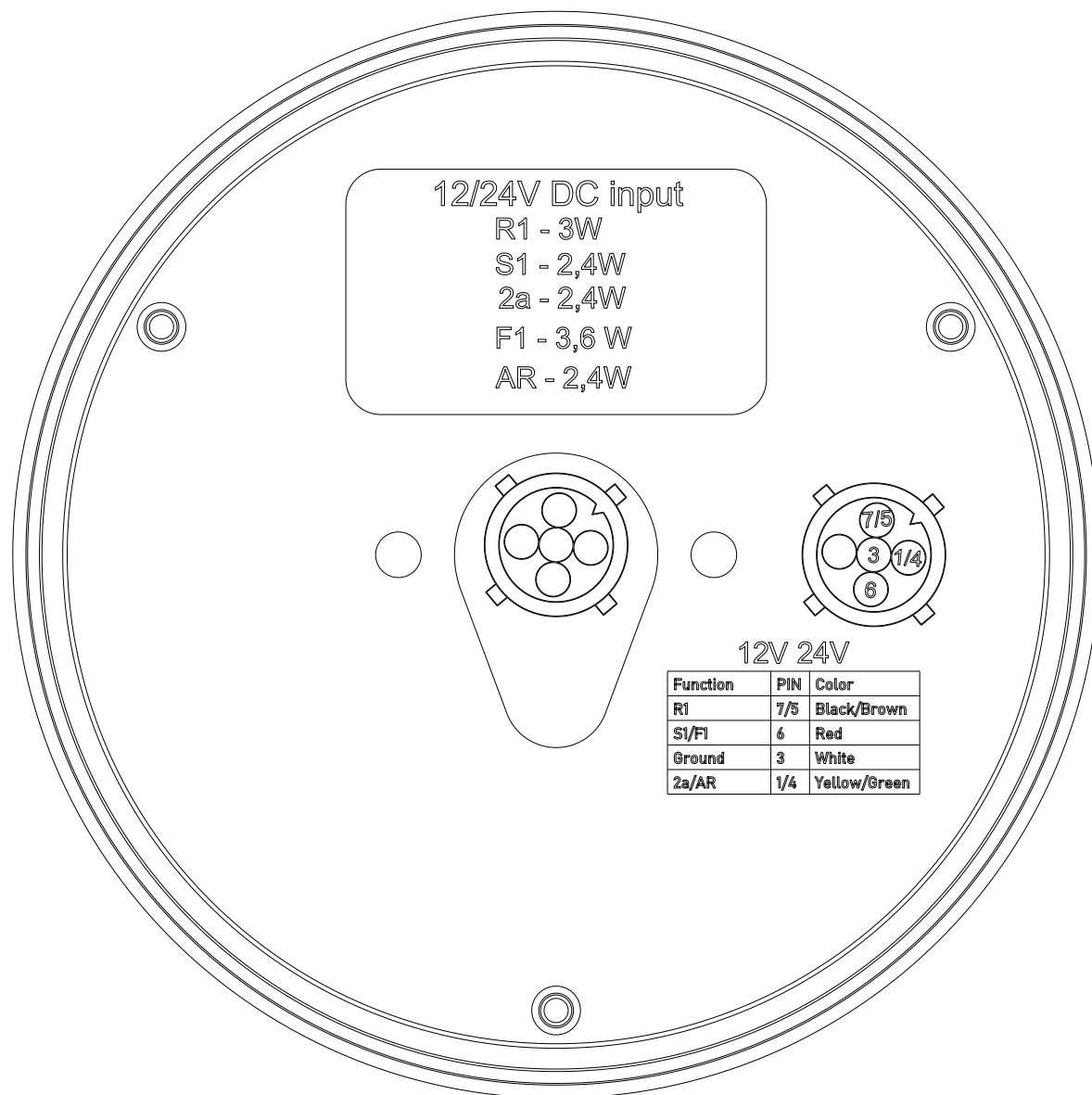
Description:

electrical parameters markings

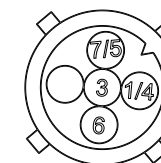
This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



electrical markings outside rear housing



12V 24V

Function	PIN	Color
R1	7/5	Black/Brown
S1/F1	6	Red
Ground	3	White
2a/AR	1/4	Yellow/Green

Manufacturer:

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp.K.
86-014 Sicienka / Polska
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Drawn by: Karol Jonoszak
Date: 13-02-2024
Sheet: 7 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

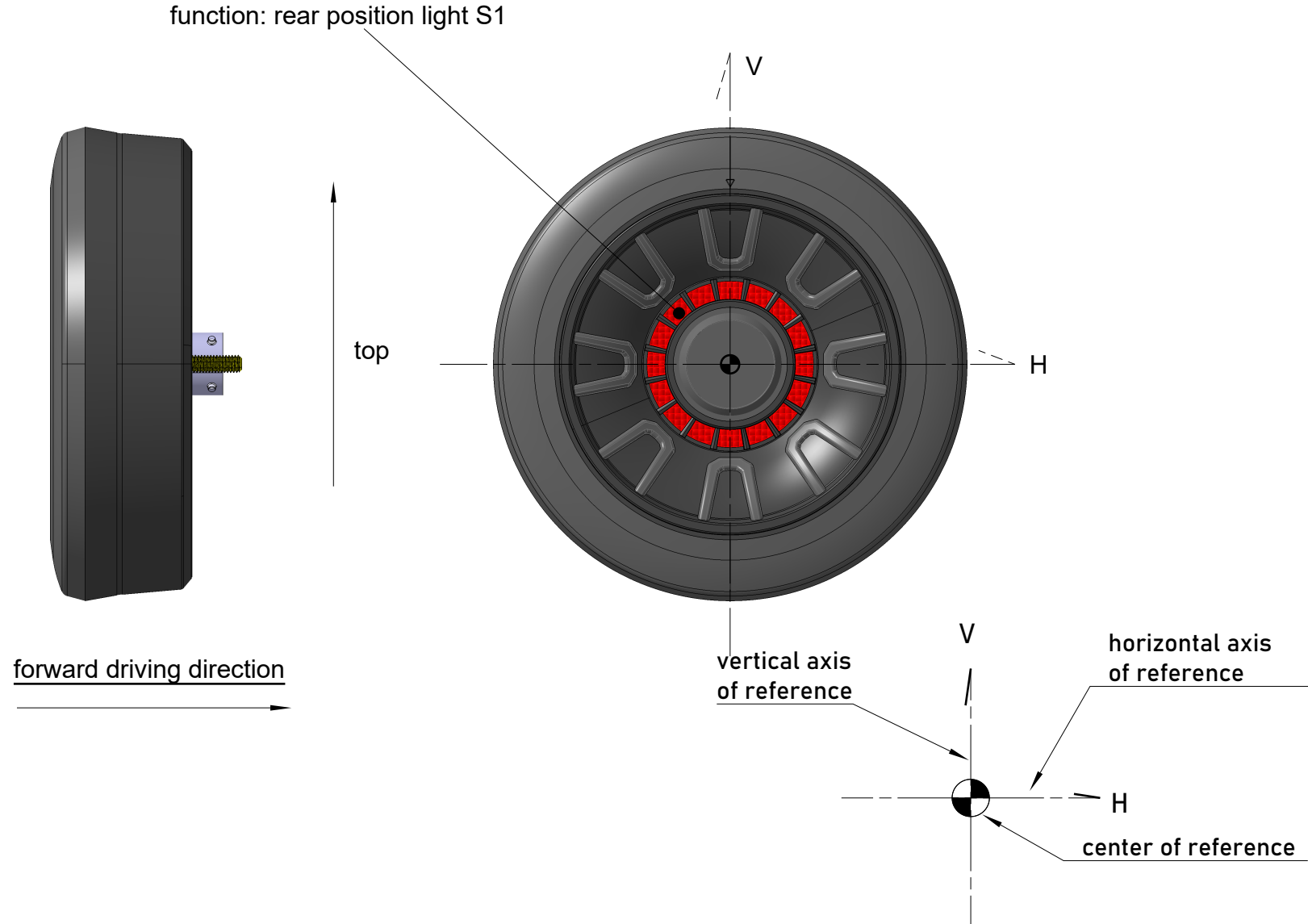
Description:

lamp functions

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	

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

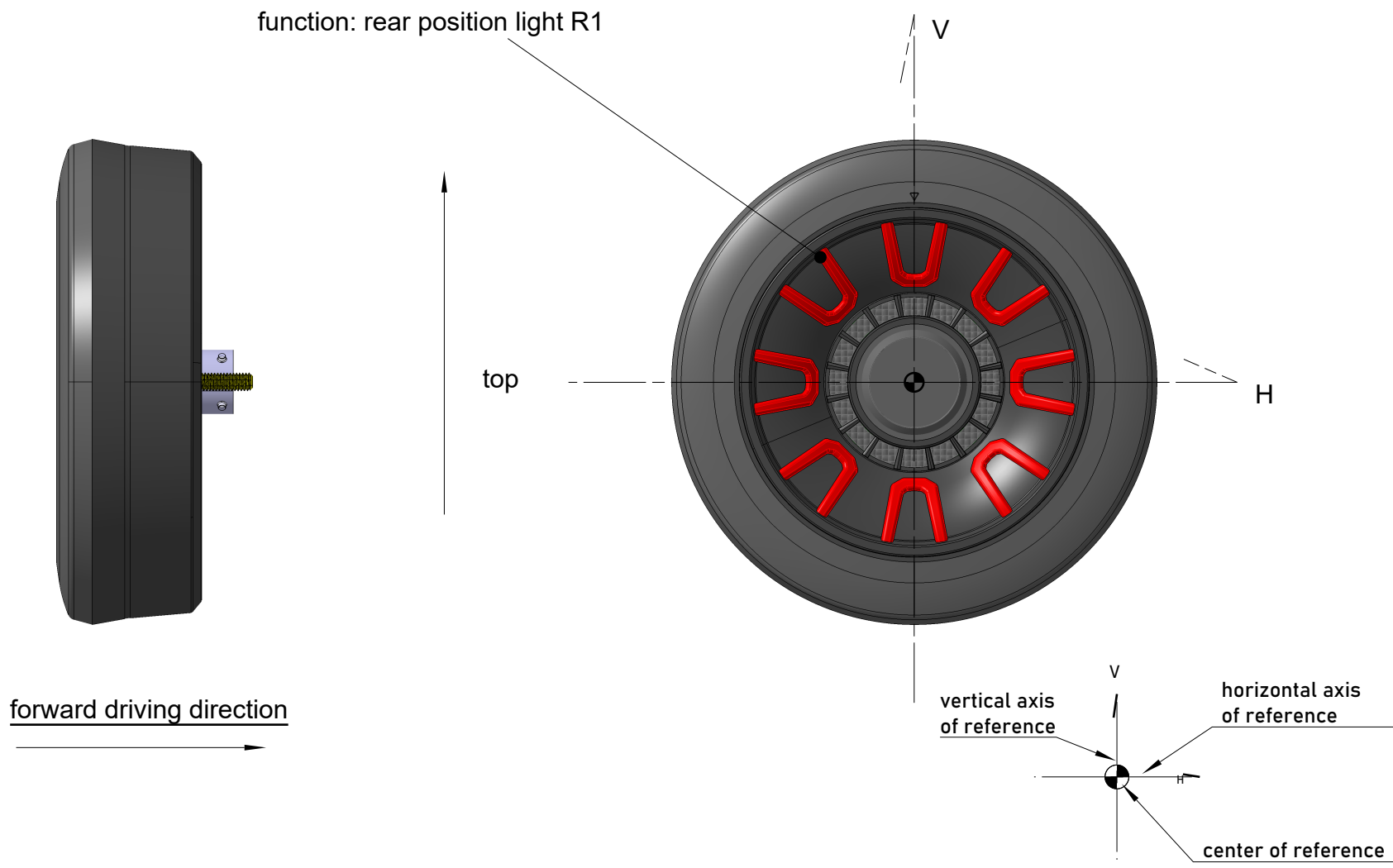
Type: **FT-313 LED**
 rear combined lamp (rear position; stop; direction indicator)



Light source:
 LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

Description:
 lamp functions
 This drawing is a part of the application for approval

Drawn by: Karol Jonoszak
Date: 13-02-2024
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part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	

Manufacturer:

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



Type: FT-313 LED

rear combined lamp (rear position; stop; directon indicator)

Light source:

LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

Description:

lamp functions

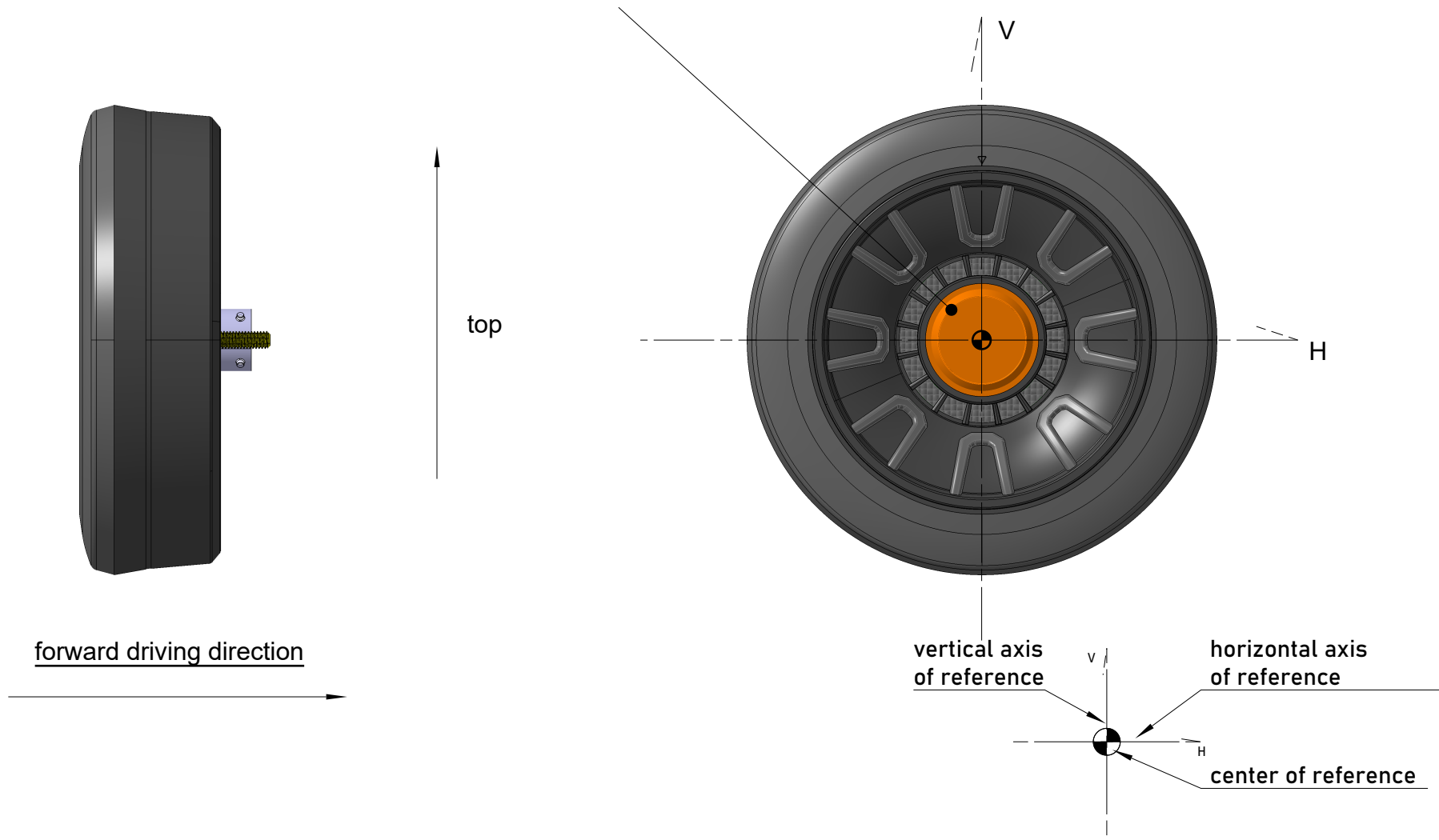
This drawing is a part of the application for approval

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Date: 13-02-2024

Sheet: 9 of 13

function: director indicator 2a



Manufacturer:

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Drawn by: Karol Jonoszak
Date: 13-02-2024
Sheet: 10 of 13

Type: **FT-313 LED**

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

Description:

variants / tradenames

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	

FT-313 LED CHROME	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, cable 1m.
FT-313 LED CHROME Mxx	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, cable Mxxm
FT-313 LED CHROME BAJONET	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, 5PIN bayonet connector.
FT-313/1 LED CHROME	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, cable 1m
FT-313/1 LED CHROME Mxx	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, cable Mxxm
FT-313/1 LED CHROME BAJONET	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, 5PIN bayonet connector
FT-313 LED BLACK	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, cable 1m
FT-313 LED BLACK Mxx	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, cable Mxxm
FT-313 LED BLACK BAJONET	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round recessed lamp, 5PIN bayonet connector
FT-313/1 LED BLACK	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, cable Mxxm
FT-313/1 LED BLACK Mxx	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, cable 1m
FT-313/1 LED BLACK BAJONET	Universal LED 3-functional rear lamp, rear position, stop, indicator lights, 12/36V, round, flat mounting, 5PIN bayonet connector

* where x is a digit between 0-9

Manufacturer:

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 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: 13-02-2024
Sheet: 11 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
 40 LED's red light color
 12 LED's amber color

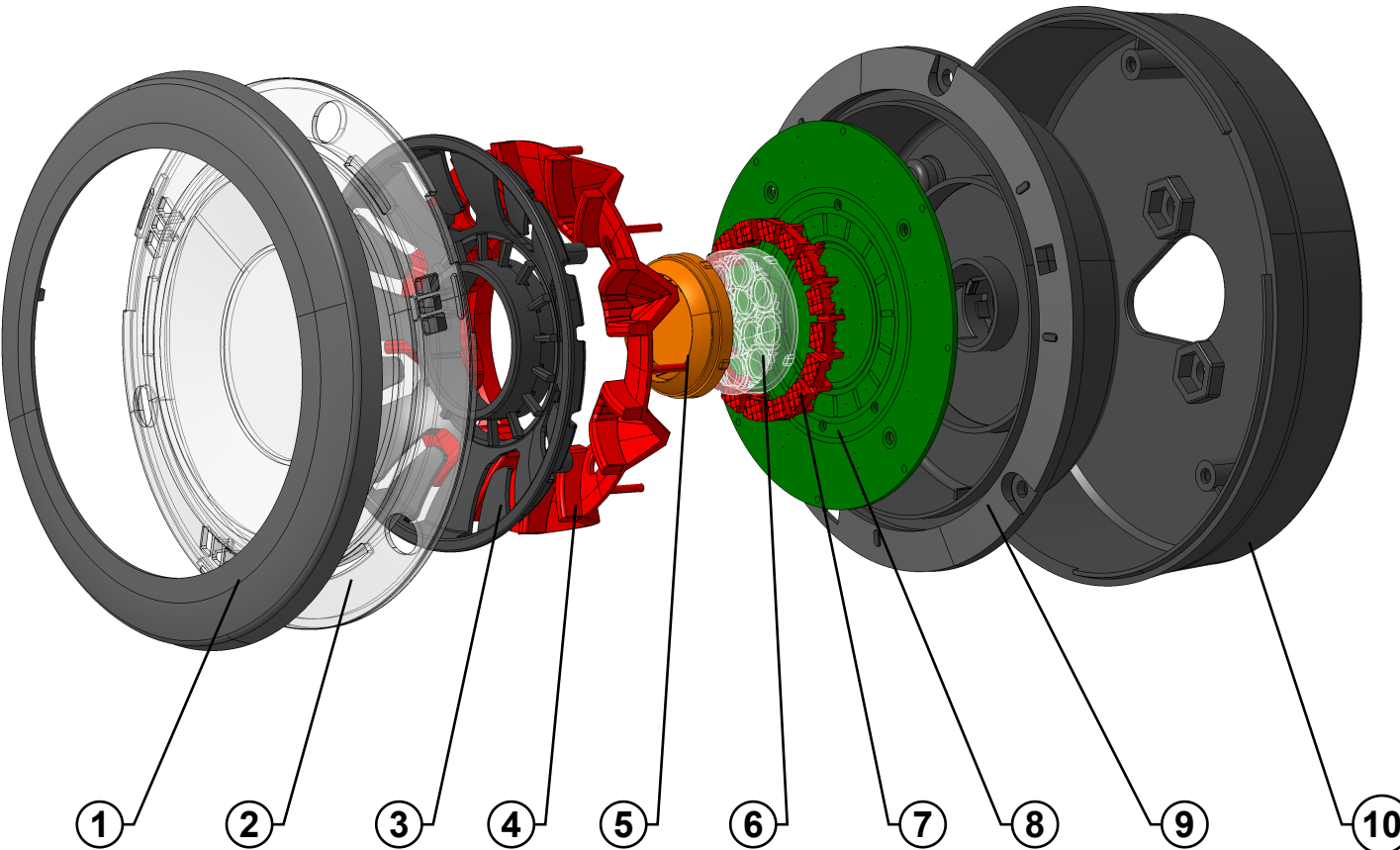
Description:

exploded lamp view

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cable	4 x0.5 mm ²	



No	Description
1	Bezel
2	Lampshade
3	Frame
4	Rear position optical insert
5	Upper optical direction indicator
6	Lower optical insert
7	Optical insert stop
8	PCB
9	Housing for recessed assembly
10	Outer housing

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: 13-02-2024

Sheet: 12 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; directon indicator)

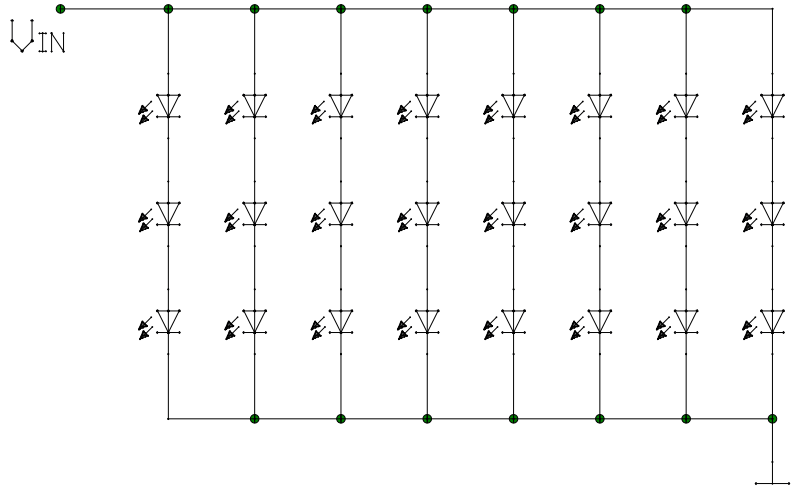
Light source:
LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

Description:
simplified LED connection
This drawing is a part of the application for approval extension

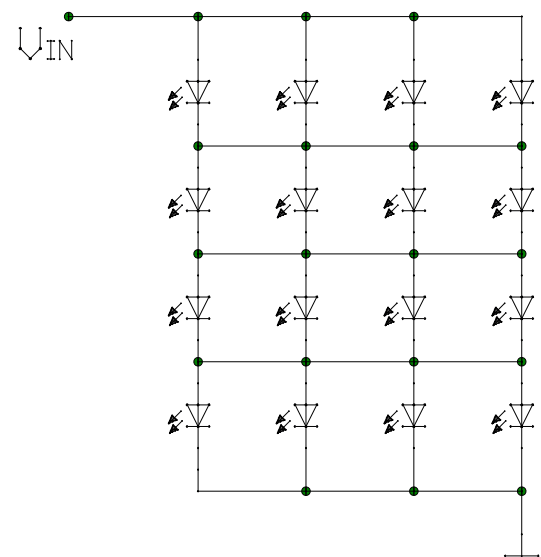
Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cablc	4 x0.5 mm ²	

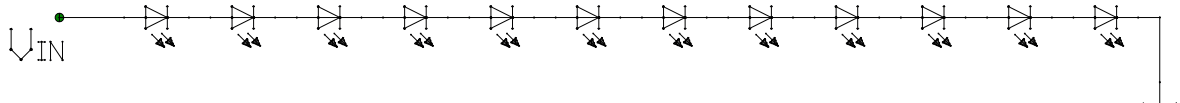
R1



S1



Za



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: 13-02-2024
Sheet: 13 of 13

Type: FT-313 LED

rear combined lamp (rear position; stop; direction indicator)

Light source:

LED CHIP SMD chip mounted
40 LED's red light color
12 LED's amber color

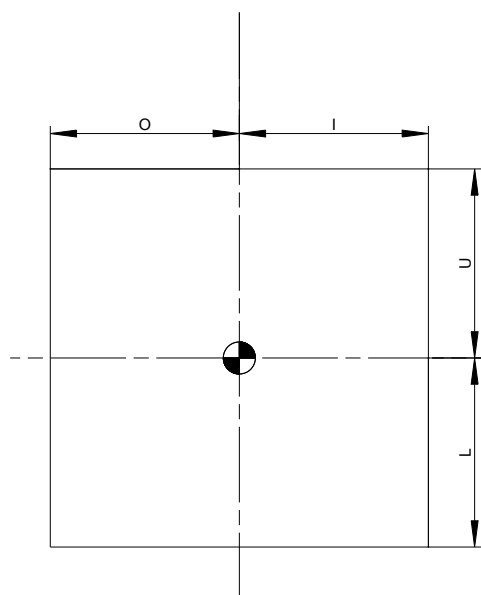
Description:

light emitting surface

This drawing is a part of the application for approval

Material used in manufacturing :

part	material	color
lampshade	PC	clear transparent
bezel	ABS	black or galvanic coated
housing for recessed assembly	ABS	black
other housing	ABS	black
frame	ABS	black
rear position optical insert	PC	red diffusive
stop optical insert	PC	red clear transparent
lower and upper optical insert direct indicator	PC	amber clear transparent
PCB	FR4	
potting compound	epoxy resin	
cablc	4 x0.5 mm ²	



lighting surface				
function	U (upper limit) [mm]	L (lower limit) [mm]	O (outer limit) [mm]	I (inner limit) [mm]
S1	27	27	27	27
R1	52	52	52	52
2a	18,5	18,5	18,5	18,5

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

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