



E9*23R00/22*23098*03

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COMUNICACIÓN / COMMUNICATION:

Concerniente a ⁽¹⁾:

~~LA CONCESIÓN DE HOMOLOGACIÓN~~
~~LA EXTENSIÓN DE HOMOLOGACIÓN~~
~~LA DENEGACIÓN DE HOMOLOGACIÓN~~
~~LA RETIRADA DE HOMOLOGACIÓN~~
~~EL CESE DEFINITIVO DE PRODUCCIÓN~~

Concerning ⁽¹⁾:

~~APPROVAL GRANTED~~
~~APPROVAL EXTENDED~~
~~APPROVAL REFUSED~~
~~APPROVAL WITHDRAWN~~
~~PRODUCTION DEFINITELY DISCONTINUED~~

de un tipo de luz de marcha atrás en aplicación del Reglamento N°23.
of a type of reversing lamp pursuant to Regulation No.23.

N° de homologación / Approval No.: E9*23R00/22*23098*03

Extensión N° / Extension No.: 3

1. Marca de fábrica o comercial del dispositivo / Trade name or mark of the device: FRISTOM
2. Designación del tipo de dispositivo dado por el fabricante / Manufacturer's name for the type of device:
FT-270 LED
3. Nombre y dirección del fabricante / Manufacturer's name and address:
FRISTOM SPÓLKA Z OGRANICZONA
ODPOWIEDZIALNOSCIA SPÓLKA
KOMANDYTOWA
UL. PRZEMYSŁOWA 5, 86-014
85416 SICIENKO
SICIENKO (POLONIA)
- 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. En su caso, nombre y dirección del representante del fabricante / If applicable, name and address of manufacturer's representative: ---
5. Dispositivo presentado a homologación el / Submitted for approval on: 07/04/2021
6. Servicio técnico encargado de los ensayos de homologación / Technical service responsible for conducting approval test: IDIADA
7. Fecha del informe emitido por dicho servicio / Date of report issued by that service: : 27/04/2021
8. Número del informe emitido por dicho servicio / Number of report issued by that service: PC19060174, PC19090221, PC20020153, PC20050209, **PC21050057**

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





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9. Breve descripción / *Concise description:*

- Número, categoría(s) y tipo de la(s) fuente(s) luminosa(s) / *Number, category and kind of light source(s):*
6xLEDs
 - Voltaje y potencia / *Voltage and wattage:* 12V, 4W
 - Aplicación de una guía de control electrónica / *Application of an electronic light source control gear:* ---
 - 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 de la(s) fuente(s) luminosa(s) / *Input voltage(s) supplied by an electronic light source control gear:* ---
 - Fabricante de la guía de control electrónica 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 manufacturer and identification number (when the light source control gear is part of the lamp but is not included into the lamp body):* ---
 - Módulo de fuente de luz / *Light source module:* ~~si~~ / ~~yes~~ - no / ~~no~~ ⁽¹⁾
 - Código de identificación específico del módulo de fuente de luz / *Light source module specific identification code:* ---
 - Condiciones geométricas de instalación y variaciones relacionadas, en su caso / *Geometrical conditions of installation and relating variations, if any:* ---
 - Para un tipo de luz de maniobra en aplicación del Reglamento N°23 párrafo 6.2.2. / *For a type of manoeuvring lamp pursuant to Regulation No. 23 paragraph 6.2.2.:*
Altura máxima de montaje / *Maximum mounting:* ---
 - La luz es sólo para uso en un vehículo equipado con un testigo que indique el fallo / *The lamp is only for use on a vehicle fitted with a tell-tale indicating failure:* ~~si~~ / ~~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. En el caso de una luz de marcha atrás, este dispositivo sólo puede instalarse en un vehículo, por pares: ~~si~~ / ~~no~~ ⁽¹⁾
/ *In the case of a reversing lamp, this device shall be installed on a vehicles only as part of a pair of devices:*
~~yes~~ / ~~no~~ ⁽¹⁾
12. Motivos de la extensión (en su caso) / *Reason(s) of extension (if applicable):*
a) Dimensiones físicas del reflector de categoría IIIA se corrigen de acuerdo a: / *Physical dimensions of reflex reflector cat. IIIA have been corrected according to:* R003 - E/ECE/324/Add.2/Rev.4 E/ECE/TRANS/505/Add.2/Rev.4 Annex 5-par 2.6
b) Se añade esquema de conexiones LED / *Scheme of LED connections has been added*

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





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13. Se ~~concede/deniega~~/extiende/~~retira~~ la homologación ⁽¹⁾ / ~~Approval granted/refused/extended/withdrawn~~ ⁽¹⁾

14. Lugar / *Place*: Madrid

15. Fecha / *Date*: Ver firma electrónica / *See electronic signature*

16. Firma / *Signature*:

EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL

Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012

17. Se adjunta la lista de apartados que constituyen el expediente de homologación depositado en el servicio administrativo que ha concedido la homologación y que pueden ser obtenidos a petición. / *The list of documents deposited with the Administrative Service 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*





INFORME N° / REPORT No. PC21050057

RELATIVO A LA EXTENSIÓN HOMOLOGACIÓN DE LAS LUCES DE MARCHA ATRÁS PARA LOS VEHÍCULOS A MOTOR Y SUS REMOLQUES SEGÚN EL REGLAMENTO ECE 23.00 / *CONCERNING THE APPROVAL EXTENDED OF REVERSING LAMPS FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS ACCORDING TO REGULATION 23.00 ECE*

EXTENSIÓN III/ EXTENSION III

Nombre y dirección del fabricante /
Manufacturer's name and address : FRISTOM SPÓLKA Z OGRANICZONA
ODPOWIEDZIALNOSCIA SPÓLKA
KOMANDYTOWA
UL. PRZEMYSŁOWA 5, 86-014
85416 SICIENKO
SICIENKO (POLONIA)

Marca comercial / *Trade mark* : FRISTOM

Tipo / *Type* : FT-270 LED

Lugar y fecha de emisión del informe /
Place and date of test report issue : L'Albornar, Santa Oliva (Tarragona)
27/04/2021

CONCLUSIONES / CONCLUSIONS: Las modificaciones introducidas, que se detallan en el Anexo a este Informe, son objeto de extensión de homologación respecto al tipo homologado por este servicio (Informe N° PC19060174, PC19090221, PC20020153, PC20050209) las prescripciones relativas a la homologación de las luces de marcha atrás en aplicación del Reglamento ECE 23.00 según se detalla en el anexo que se adjunta a este informe. / *Modifications introduced, as detailed in the Annex attached to this report, are extension of homologation with respect to formerly certified type performed by this technical department (Test Report No. PC19060174, PC19090221, PC20020153, PC20050209) FULFILLS the prescriptions with regard to the approval of reversing lamps in application to Regulation 23.00 ECE as detailed in the annex to this report*

Realizado por / *Performed by:*



Joan Fonts Sala
INGENIERO DE ENSAYOS
TEST ENGINEER

V. B° / *Revised by:*



Ramon Santafè Guiu
JEFE DE DEPARTAMENTO
DEPARTMENT MANAGER



**ANEXO AL INFORME
ANNEX TO THE REPORT**

RELATIVO A LA EXTENSIÓN HOMOLOGACIÓN DE LAS LUCES DE MARCHA ATRÁS PARA LOS
VEHÍCULOS A MOTOR Y SUS REMOLQUES SEGÚN EL REGLAMENTO ECE 23.00 / *CONCERNING
THE APPROVAL EXTENDED OF REVERSING LAMPS FOR POWER-DRIVEN VEHICLES AND THEIR
TRAILERS ACCORDING TO REGULATION 23.00 ECE*

Nombre y dirección del fabricante / <i>Manufacturer's name and address</i>	:	FRISTOM SPÓLKA Z OGRANICZONA ODPOWIEDZIALNOSCIA SPÓLKA KOMANDYTOWA UL. PRZEMYSŁOWA 5, 86-014 85416 SICIENKO SICIENKO (POLONIA)
Marca comercial / <i>Trade mark</i>	:	FRISTOM
Tipo / <i>Type</i>	:	FT-270 LED
Identificación de las muestras / <i>Sample identification</i>	:	HTC-2104/0194
Nº de luces / <i>No. of lamps</i> *	:	-Una luz / <i>One lamp</i> -Par de luces / <i>Pair of lamps</i>
Luz / <i>Lamp</i>	:	Simple / <i>Single</i> (2.16.1 (a) R.48)
Número y categoría(s) de la(s) fuente(s) luminosa(s) / <i>Light source(s) number and category(ies)</i>	:	6xLEDs
Módulo de fuente luminosa / <i>Light source module</i> *	:	Si / <i>Yes</i> – No / <i>No</i>
Código específico de identificación del módulo de fuente luminosa / <i>Light source module specific identification code</i> :		---

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

* 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



MOTIVO DE EXTENSIÓN/ REASON OF EXTENSION:

- a) Dimensiones físicas del reflector de categoría IIIA se corrigen de acuerdo a: / *Physical dimensions of reflex reflector cat. IIIA have been corrected according to: R003 – E/ECE/324/Add.2/Rev.4 E/ECE/TRANS/505/Add.2/Rev.4 Annex 5-par 2.6*
- b) Se añade esquema de conexiones LED / *Scheme of LED connections has been added.*

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

Lugar / Place: L'Albornar, E-43710 Santa Oliva (Tarragona)
Fecha / Date: 27/04/2021



Joan Fonts Sala
INGENIERO DE ENSAYOS
TEST ENGINEER

IDIADA PC21050057

* 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.
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DOCUMENTACIÓN TÉCNICA /
TECHNICAL DOCUMENTATION

INFORMATION FOLDER:

DATE: 16.04.2021

1. Specification data

Type	FT-270 LED	
Trade name or mark	Fristom	
Variants	See drawing	
Function	rear position R1 ; stop light S1 ; retro reflex reflector cat IIIA , rear fog light F1 ,registration plate light L, reversing light AR, rear direction indicator light 2a	
Color	red light color , white light color , amber light color	
Rated	Voltage	12V
	Wattage	R1=4W ; R1+L=5W ; S1=5W ; F1=5W ; AR=4W ; 2a=15W
Applicable Regulation	R03;R04;R06;R07;R23;R38	
Light Source and connection	R1 - 4 LED's serial connected in 2 parallel sections S1 - all 8 LED's series-parallel connected 2a - 3 LED's serial connected in 2 parallel sections F1 - all 8 LED's series-parallel connected AR- all 6 LED's series-parallel connected L - 3 LED's serial connected	
Location of marking	Light Source marks	See the drawing
	Trade mark	Marked on reflex reflector visible under lampshade
	Approval mark	Marked on the lampshade

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	--

2. 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:

- a) Physycal dimensions of reflex reflector cat. IIIA has been corrected according:
R003 - E/ECE/324/Add.2/Rev.4 E/ECE/TRANS/505/Add.2/Rev.4 Annex 5 – par 2.6
b) schemes of LED connections has been added

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

FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. k.
86-014 SICIENKO, ul. Przemysłowa 5
tel. 52 350 90 50
www.fristom.com.pl
NIP 5542926937 REGON 341640907
MICHAŁ DYBISZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
88-014 Sielenko, Polska
ul. Przemysłowa 5
NIP: 5542526937, KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** **sheet Nr.**

Michał Dybicz 13-04-2020 1/13

Type

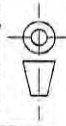
FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

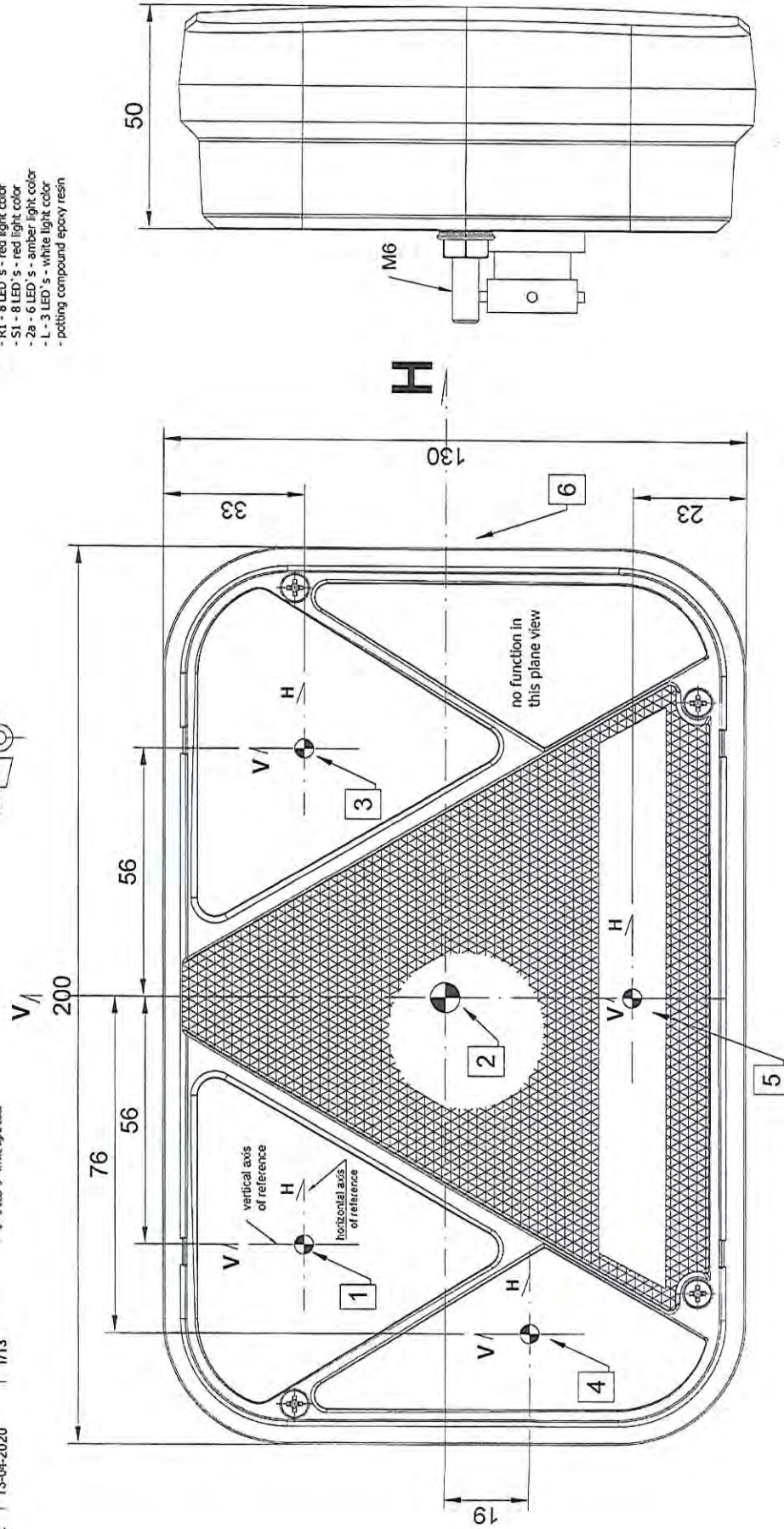
sheet description

general drawing / lamp functions / assembly on vehicle
This drawing is a part of the application for approval



Material used in manufacturing :

- lampshade PC transparent clear
- collimator AR PMMA transparent clear
- collimator F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- IIIA reflector and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin



- 1 - center of reference direction indicator 2a
- 2 - center of reference reflex reflector cat IIIA
- 3 - center of reference rear fog or reversing light (F1 or AR)
- 4 - center of reference stop light cat S1
- 5 - center of reference rear position light cat R1
- 6 - registration plate light

note: FT- 270 LED left lamp view (right lamp is a mirror)
only horizontal assembly

FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. k.
88-014 Sielenko, ul. Przemysłowa 5
tel. 52 360 90 50
www.fristom.com.pl
REGON 341640907
MICHAŁ DYBICZ

PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
66-014 Ścielenko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
Tel.: +48 52 360 50 51, Fax: +48 52 327 75 41



Drawn by:

sheet Nr.

Date:

Michał Dybicz

13-04-2020

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Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED Chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
Za - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

reflex reflector cat. IIIA dimension and surface

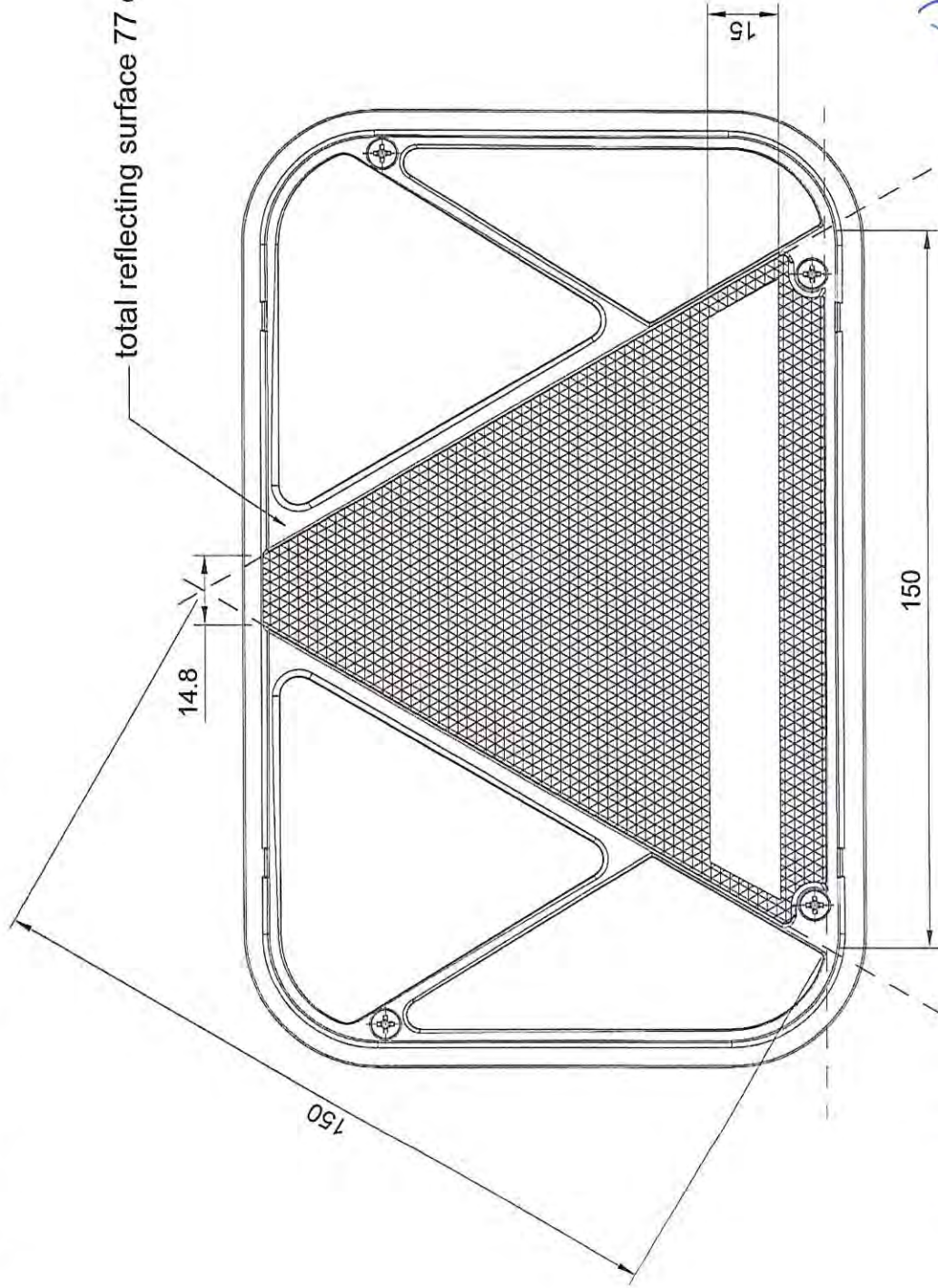
This drawing is a part of the application for approval



Material used in manufacturing :

- lensshade PC transparent clear
- coil motor AR PMMA transparent clear
- coil motor F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens Za PMMA transparent amber
- IIIA reflector and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

total reflecting surface 77 cm²



FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. k.
66-014 ŚCIENKO, ul. Przemysłowa 5

tel. 52 360 50 50

www.fristom.com.pl

REGON 341640907

MICHAŁ DYBICZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 Sicienka / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS 0000329238
Tel.: +48 52 360 90 51, Fax +48 52 327 75 41



Drawn by: **Date:** **sheet Nr.**

Michał Dybicz 13-04-2020 3/13

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

vehicle assembly

This drawing is a part of the application for approval

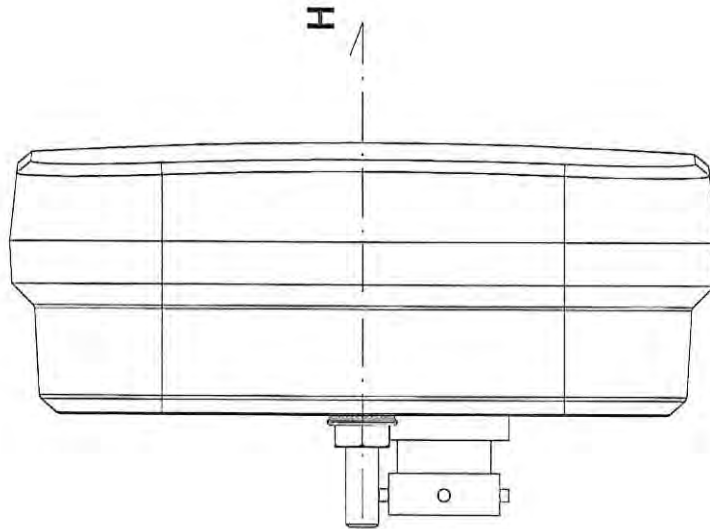
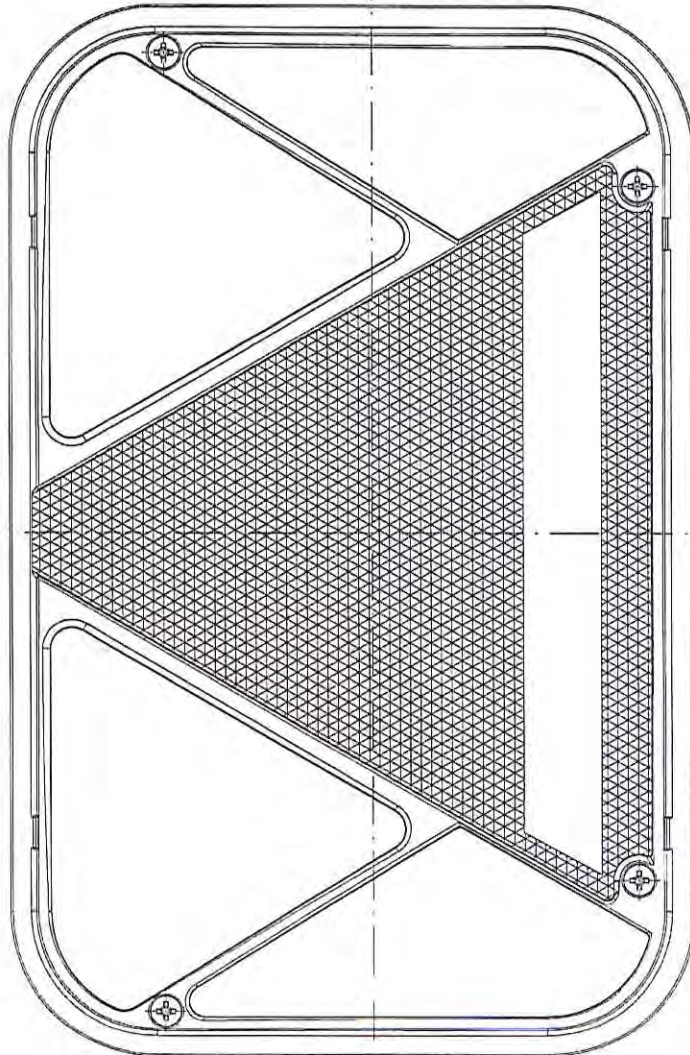


Material used in manufacturing :

- lampshade PC transparent clear
- coil motor AR PMMA transparent clear
- coil motor F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- IIIA reflector and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

V / Δ top of vehicle

forward driving direction \rightarrow



FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. k.
86-014 SICIENKA, ul. Przemysłowa 5
tel. 52 360 90 50
www.fristom.com.pl

NIP: 5542926937 REGON: 341640907
Dybis
MICHAŁ DYBICZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
85-014 Ścieżko / Polska
ul. Przemysłowa 5
NIP: 554226337, KRS: 000523238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** **sheet Nr.**

Michał Dybicz 28-05-2020 4/13

electrical parameters

stop - 5W
rear fog - 5W
reversing - 4W
rear position + reg. plate - 5W
rear position only - 4W
direction indicator - 15W

note:
schemes
shown are
simplified

FT- 270 LED - rear multifunction lamp for trailers EXT03

Material used in manufacturing :

- lensshade PC transparent clear
- colimator AR PMMA transparent clear
- colimator F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- TIRA reflector and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

sheet description

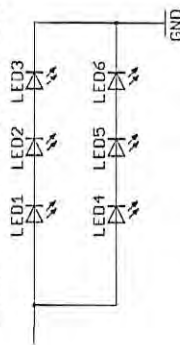
LED connections

This drawing is a part of the application for approval

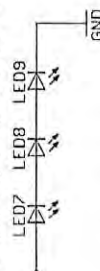
light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

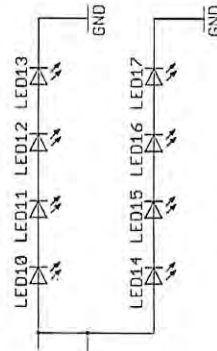
direction indicator amber light colour LED's



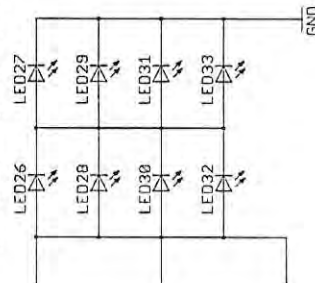
registration plate light white light colour LED's



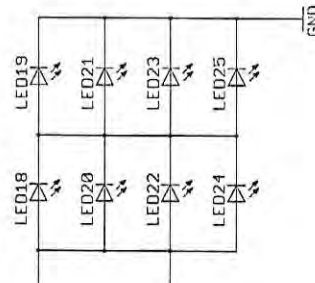
rear position light red light colour LED's



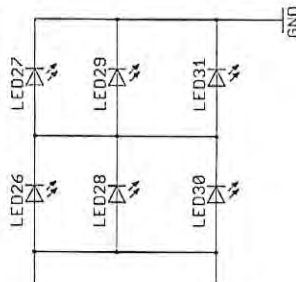
rear fog light red light colour LED's



stop light red light colour LED's



reversing light white light colour LED's



FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. k.
85-014 Ścieżko, ul. Przemysłowa 5
tel. 52 360 90 50

www.fristom.com.pl

NIP: 554226337, KRS: 000523238

IDIADA

PC21050057

Type

Frisión

Michał Dybicz

13-04-2020

5/13

light source

sheet description

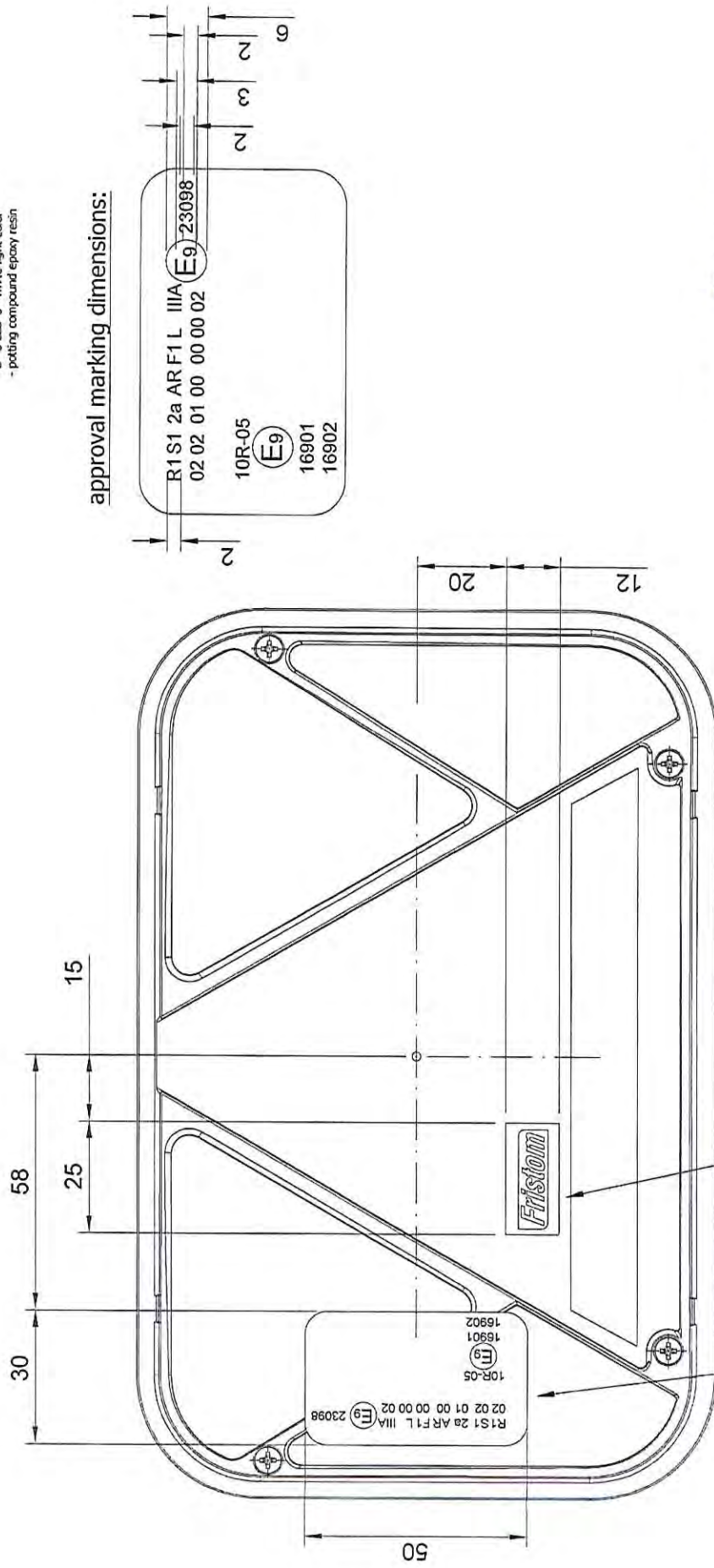
marking of trademark and approvals

This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- collector AR PMMA transparent clear
- collector F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- lens 2b PMMA transparent red
- lens 3a PMMA transparent red
- lens 3b PMMA transparent red
- registration plate reflector ABS black vacuum metalized
- PCB FR4
- AR - 6 LED S - white light color
- F1 - 8 LED S - red light color
- R1 - 8 LED S - red light color
- S1 - 8 LED S - red light color
- 2a - 6 LED S - amber light color
- L - 3 LED S - white light color
- potting compound epoxy resin

FT- 270 LED - rear multifunction lamp for trailers EXT03



approval marking dimensions:

place for trademark
place for approval markings

FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. k.
86-014 ŚCIENKO, ul. Przemysłowa 5
tel. 52 360 90 50
www.fristom.com.pl
NIP 5542028937 REGON 341640907
MICHAŁ DYBIEZ

... IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 Sicienka / Polska
ul. Przemysłowa 5
NIP: 554282637, KRS: 0000528238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** 13-04-2020

sheet Nr. 6/13

Michał Dybicz

Type

FT-270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
R1 - 8 LED's - red light color
R2 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

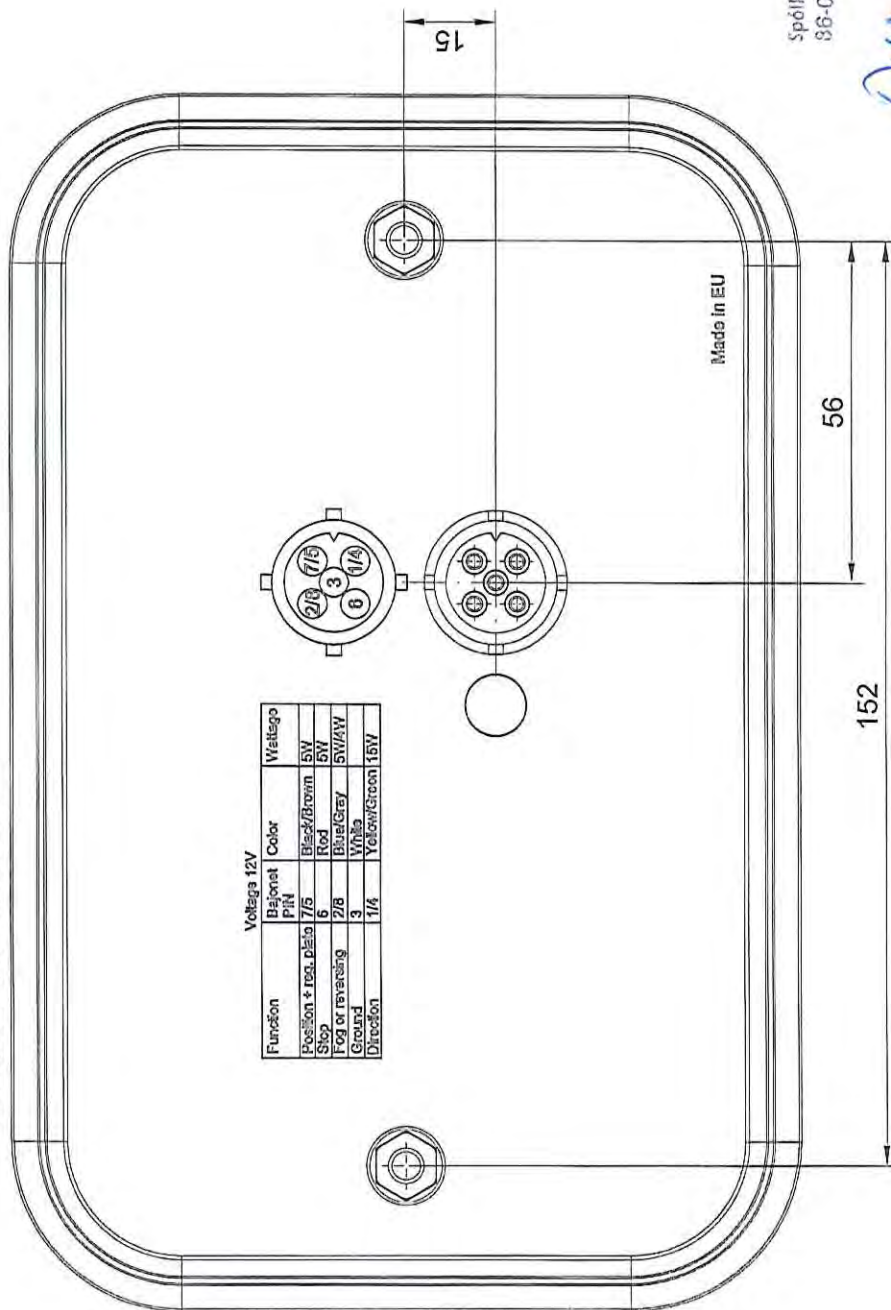
electrical parameters marking on housing

This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- colimator AR PMMA transparent clear
- colimator R1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- lens 2b PMMA transparent red
- registration plate reflector ABS black vacuum metalized
- PCB FR4
- AR - 6 LED's - white light color
- R1 - 8 LED's - red light color
- R2 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

left lamp housing view bajonet version



FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. k.
86-014 SICIENKA, ul. Przemysłowa 5
tel. 52 360 90 50
www.fristom.com.pl
REGON 341640907
MICHAŁ DYBICZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 Ścieńko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS 0000592238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** 13-04-2020

Michał Dybicz

Sheet Nr. 7/13

Type

FT-270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
Za - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

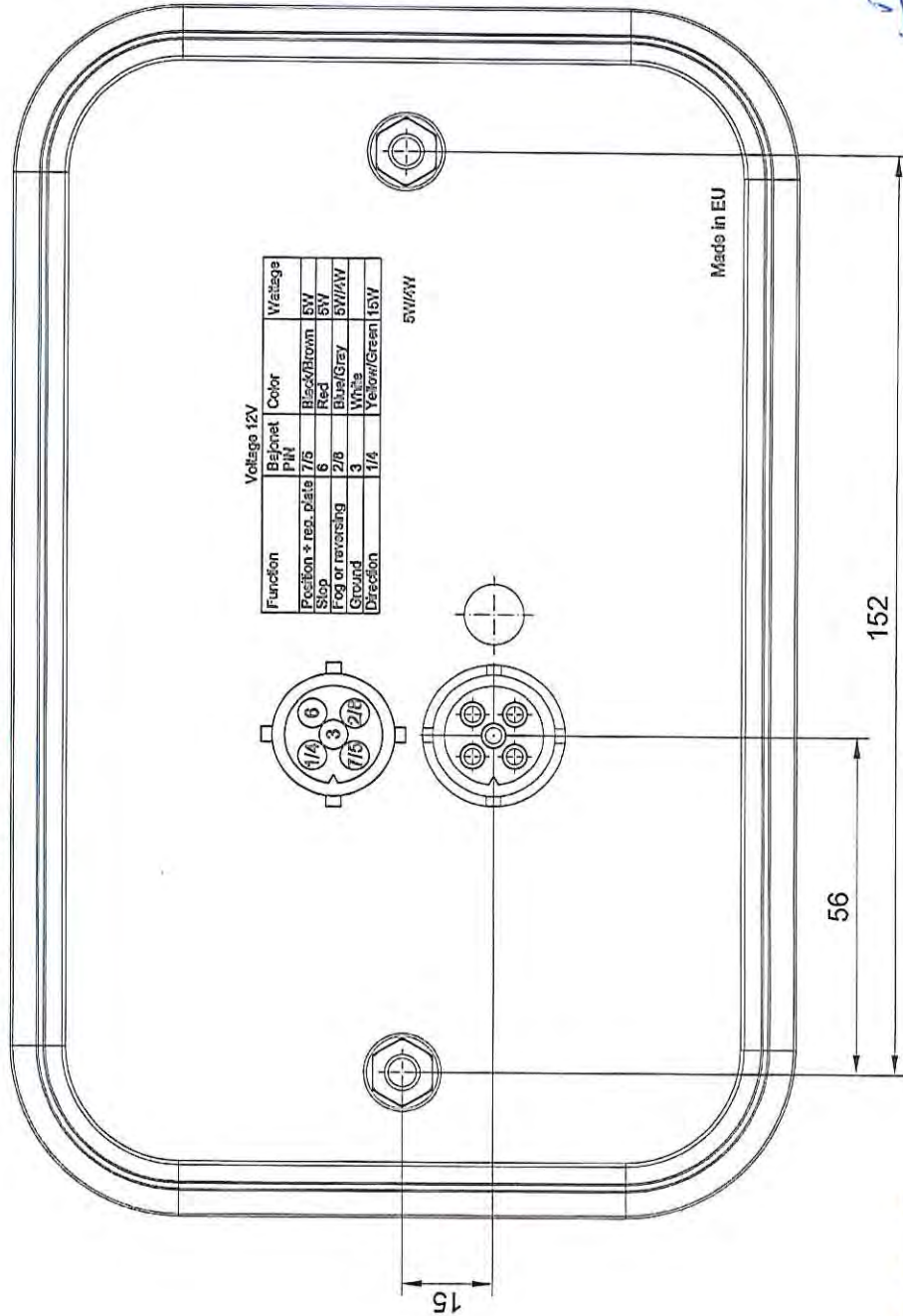
electrical parameters marking on housing

This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- colimator AR PMMA transparent clear
- colimator R1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens Za PMMA transparent amber
- lens S1 and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

right lamp housing view bajonet version



IDIADA PC21050057

FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 ŚCIEŃKO, ul. Przemysłowa 5

tel. 52 360 90 50

dybicz@fristom.com.pl

NIP: 5542926937 REGON: 341640907

MICHAŁ DYBICZ

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 Ścielenko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529238
Tel.: +48 52 350 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** 13-04-2020

sheet Nr.

Michał Dybicz 8/13

Type

FT-270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

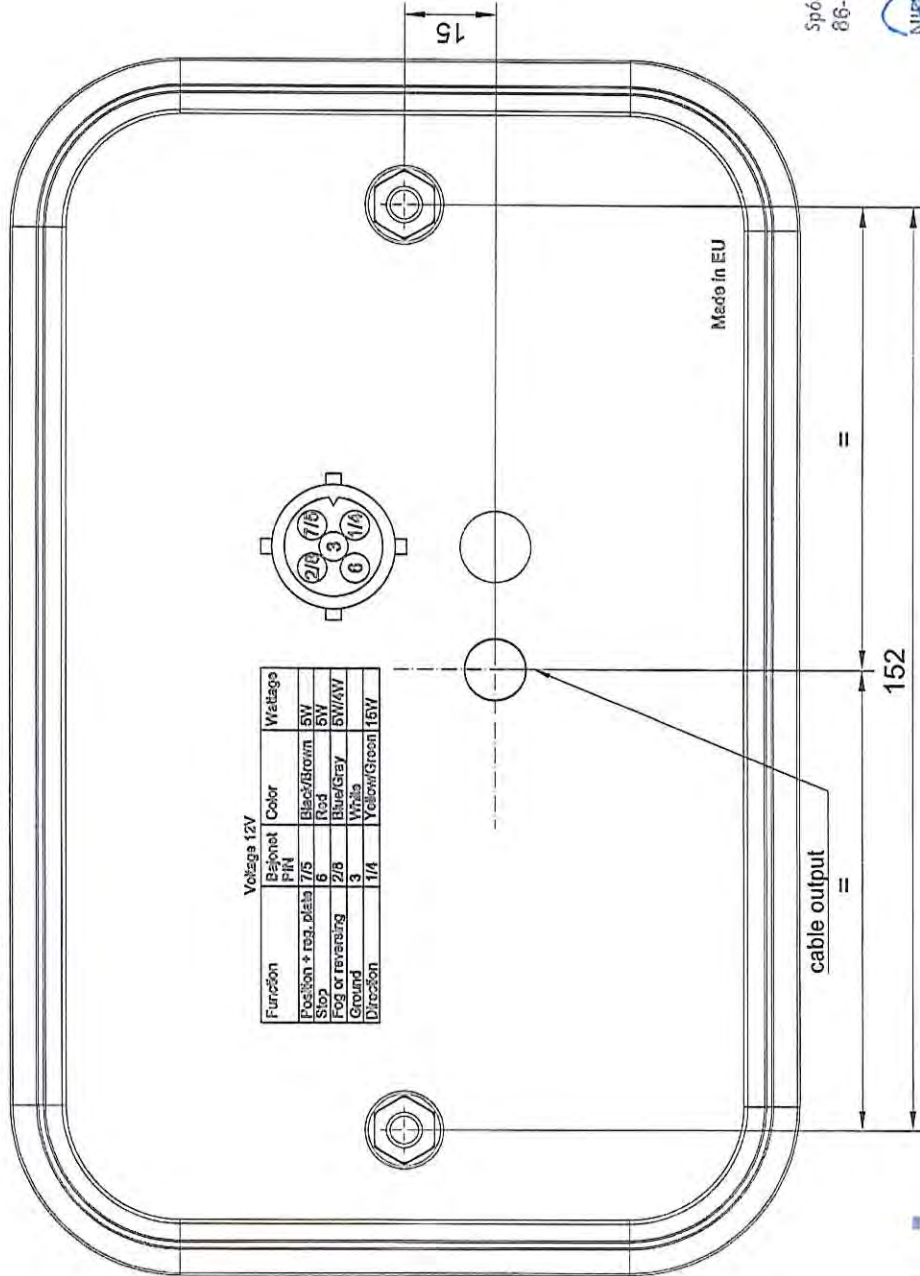
electrical parameters marking on housing

This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- coil motor AR PMMA transparent clear
- coil motor F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- IIIA reflector and R1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

left lamp housing view cable version



IDIADA PC21050057

FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 ŚCIENKO, ul. Przemysłowa 5

tel. 52 350 90 50
www.fristom.pl
NIP: 5542926937 REGON 341640907

MICHAŁ DYBICZ

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. z o.o.
88-014 Sicieniko / Polska
ul. Przemysłowa 5
NIP: 5542926937 KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** 13-04-2020

Michał Dybicz 9/13

sheet Nr.

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED Chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
S1 - 8 LED's - red light color
S2 - 8 LED's - red light color
Za - 6 LED's - amber light color
L - 3 LED's - white light color

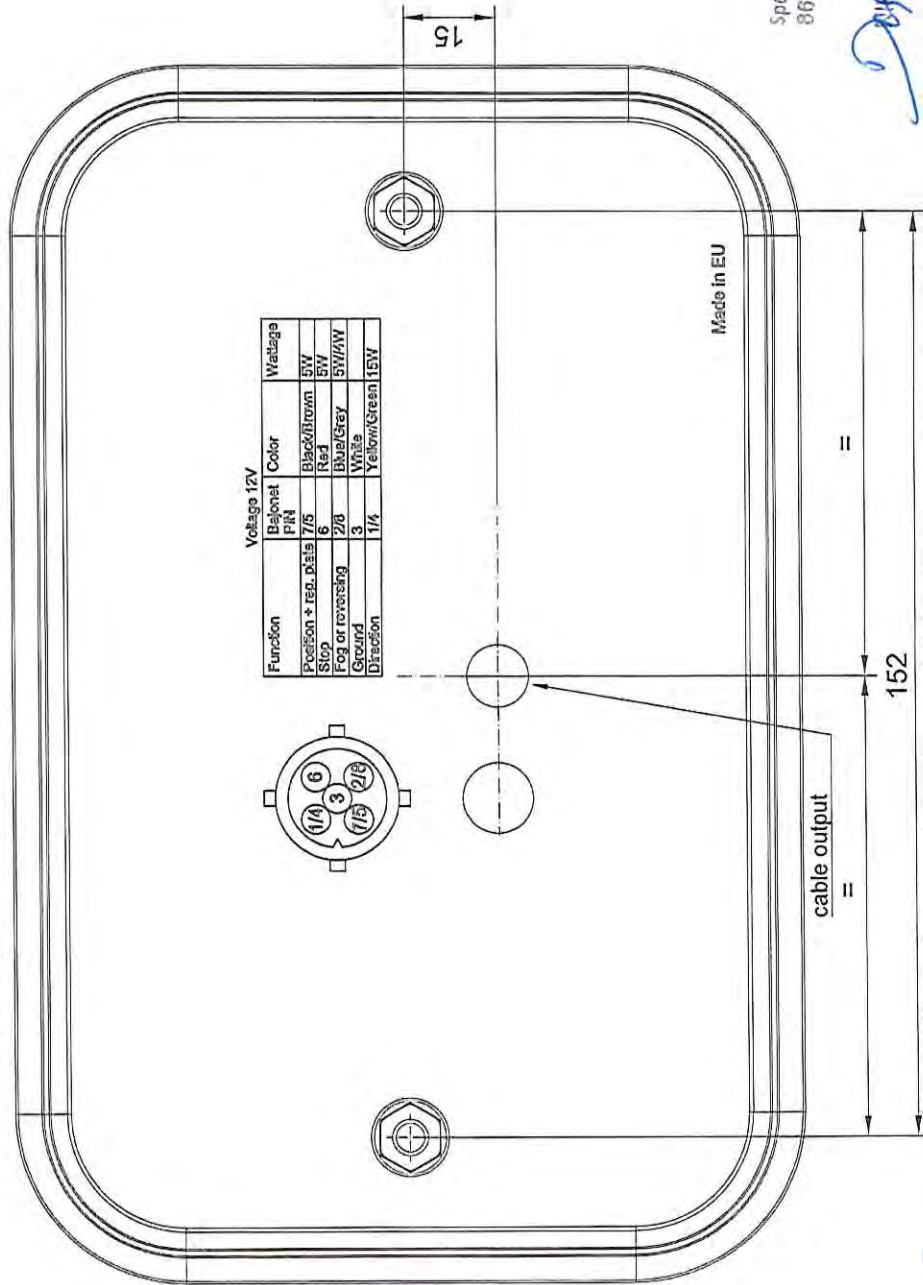
sheet description

electrical parameters marking on housing
This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- coil motor AR PMMA transparent clear
- coil motor F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- TIRa reflector and B1 lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- S2 - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

right lamp housing view cable version



FRISTOM
Spółka z ograniczoną odpowiedzialnością Sp. z o.o.
88-014 SICIENIKO, ul. Przemysłowa 5
tel. 52 360 90 50
www.fristom.com.pl
REGON 341640907
MICHAŁ DYBICZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
55-014 Sicienka / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000523238
Tel: +48 52 350 90 51, Fax: +48 52 327 75 41



Drawn by: Date: 13-04-2020 sheet Nr. 10/13

Michał Dybicz

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

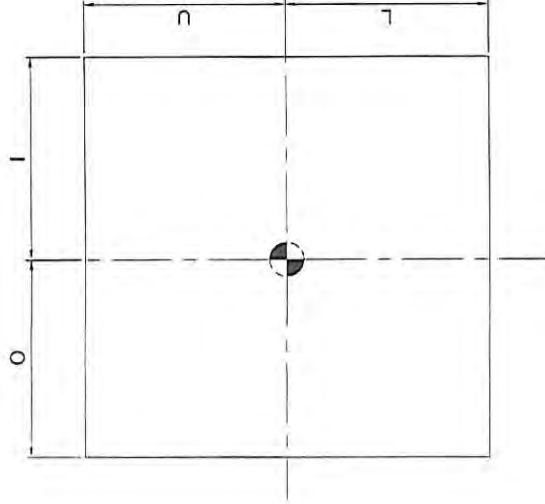
sheet description

lighting surface

This drawing is a part of the application for approval

Material used in manufacturing :

- lampshade PC transparent clear
- colimator AR PMMA transparent clear
- colimator F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- IIIA reflector and RI lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin



lighting surface

function	U _(upper limit) [mm]	L _(lower limit) [mm]	O _(total limit) [mm]	I _(center limit) [mm]
reversing AR	23	23	25	25
rear fog F1	23	23	25	25
rear position R1	7,5	7,5	66	66
stop S1	44	44	18,5	18,5
direction indicator 2a	33	33	36	36

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

According to European Directive 91/663/EEC , Annex I "Installation of lighting and light-signalling devices" clause 1.9.2.

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

IDIADA PC21050057

FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 SICIENKA, ul. Przemysłowa 5

tel. 52 360 90 50

www.fristom.com.pl

REGON 341640907

MICHAŁ DYBICZ

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
85-014 Ścieńko / Polska
ul. Przemysłowa 5
NIP: 5542926937 KRS: 0000529238
TEL: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** **sheet Nr.**

Michał Dybicz 13-04-2020 11/13

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

Material used in manufacturing :

- lampshade PC transparent clear
- collimator AR PMMA transparent clear
- collimator FI PMMA transparent red
- housing ABS black
- frame ABS black
- lens Za PMMA transparent amber
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- FI - 8 LED's - red light color
- RI - 8 LED's - red light color
- SI - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

sheet description

variant tradenames (sheet 1/2)

This drawing is a part of the application for approval

light source

- LED Chip SMD chip mounted
- AR - 6 LED's - white light color
- FI - 8 LED's - red light color
- RI - 8 LED's - red light color
- SI - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color

ITEM

FT-270 L NT LED COF	FT-270 L NT LED COF Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 1 m cable.
FT-270 L NT LED COF Mxx	FT-270 L NT LED COF Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, Mxx cable.
FT-270 L NT LED COF BAJONET 5PIN	FT-270 L NT LED COF BAJONET 5PIN Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 5 PIN Bayonet connector.
FT-270 L NT LED O COF BAJONET 5PIN	FT-270 L NT LED O COF BAJONET 5PIN Universal LED left rear lamp with reflective triangle, charged, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 5 PIN Bayonet connector.
FT-270 L NT LED PM	FT-270 L NT LED PM Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 1 m cable.
FT-270 L NT LED PM Mxx	FT-270 L NT LED PM Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, Mxx cable.
FT-270 L NT LED PM BAJONET 5PIN	FT-270 L NT LED PM BAJONET 5PIN Universal LED left rear lamp with reflective triangle, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 5 PIN Bayonet connector.
FT-270 L NT LED O PM BAJONET 5PIN	FT-270 L NT LED O PM BAJONET 5PIN Universal LED left rear lamp with reflective triangle, charged, 12V, 5-functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 5 PIN Bayonet connector.
FT-270 L TB LED COF	FT-270 L TB LED COF Universal LED left rear lamp with reflective triangle 12V, 6-functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 1 m cable.
FT-270 L TB LED COF Mxx	FT-270 L TB LED COF Universal LED left rear lamp with reflective triangle 12V, 6-functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, Mxx cable.
FT-270 L TB LED COF BAJONET 5PIN	FT-270 L TB LED COF BAJONET 5PIN Universal LED left rear lamp with reflective triangle 12V, 6-functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 5 PIN Bayonet connector.
FT-270 L TB LED O COF BAJONET 5PIN	FT-270 L TB LED O COF BAJONET 5PIN Universal LED left rear lamp with reflective triangle, charged, 12V, 6-functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 5 PIN Bayonet connector.
FT-270 L TB LED PM	FT-270 L TB LED PM Universal LED left rear lamp with reflective triangle, 12V, 6-functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 1 m cable.
FT-270 L TB LED PM Mxx	FT-270 L TB LED PM Universal LED left rear lamp with reflective triangle, 12V, 6-functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, Mxx cable.
FT-270 L TB LED PM BAJONET 5PIN	FT-270 L TB LED PM BAJONET 5PIN Universal LED left rear lamp with reflective triangle, 12V, 6-functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 5 PIN Bayonet connector.
FT-270 L TB LED O PM BAJONET 5PIN	FT-270 L TB LED O PM BAJONET 5PIN Universal LED left rear lamp with reflective triangle, charged, 12V, 6-functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 5 PIN Bayonet connector.

Where x is number for 0 till 9

FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. k.
85-014 ŚCIEŃKO, ul. Przemysłowa 5

tel. 52 360 90 50
www.fristom.com.pl

NIP 5542926937 REGON 341640907

MICHAŁ DYBICZ

IDIADA

PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
86-014 Sicieniko / Polska
ul. Przemysłowa 5
NIP: 5542926937, KRS: 0000529228
Tel: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: **Date:** 13-04-2020 **sheet Nr.** 12/13

Michał Dybicz

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

Material used in manufacturing :

- lensshade PC transparent clear
- collimator AT PMMA transparent clear
- collimator FI PMMA transparent red
- housing ABS black
- frame ABS black
- lens 2a PMMA transparent amber
- IIIA reflector and RI lens PMMA transparent red
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR- 6 LED's - white light color
- FI - 8 LED's - red light color
- RI - 8 LED's - red light color
- SI - 8 LED's - red light color
- 2a - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

sheet description

variant tradenames (sheet 2/2)

This drawing is a part of the application for approval

light source

LED Chip SMD chip mounted
AR - 6 LED's - white light color
FI - 8 LED's - red light color
RI - 8 LED's - red light color
SI - 8 LED's - red light color
2a - 6 LED's - amber light color
L - 3 LED's - white light color

FT 270 P NT LED COF	FT 270 P NT LED COF Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 1 m cable.
FT 270 P NT LED COF Mxx	FT 270 P NT LED COF Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, Mxx cable.
FT 270 P NT LED COF BA/ONET SPIN	FT 270 P NT LED COF BA/ONET SPIN Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 5 PIN Bayonet connector.
FT 270 P NT LED O COF BA/ONET SPIN	FT 270 P NT LED O COF BA/ONET SPIN Universal LED right rear lamp with reflective triangle, changed, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ REVERSING without number plate light, 5 PIN Bayonet connector.
FT 270 P NT LED PM	FT 270 P NT LED PM Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 1 m cable.
FT 270 P NT LED PM Mxx	FT 270 P NT LED PM Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, Mxx cable.
FT 270 P NT LED PM BA/ONET SPIN	FT 270 P NT LED PM BA/ONET SPIN Universal LED right rear lamp with reflective triangle, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 5 PIN Bayonet connector.
FT 270 P NT LED O PM BA/ONET SPIN	FT 270 P NT LED O PM BA/ONET SPIN Universal LED right rear lamp with reflective triangle, changed, 12V, 5 functional, STOP/ POSITION/ INDICATOR/ FOG without number plate light, 5 PIN Bayonet connector.
FT 270 P TB LED COF	FT 270 P TB LED COF Universal LED right rear lamp with reflective triangle 12V, 6 functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 1 m cable.
FT 270 P TB LED COF Mxx	FT 270 P TB LED COF Universal LED right rear lamp with reflective triangle 12V, 6 functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, Mxx cable.
FT 270 P TB LED COF BA/ONET SPIN	FT 270 P TB LED COF BA/ONET SPIN Universal LED right rear lamp with reflective triangle 12V, 6 functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 5 PIN Bayonet connector.
FT 270 P TB LED O COF BA/ONET SPIN	FT 270 P TB LED O COF BA/ONET SPIN Universal LED right rear lamp with reflective triangle, changed, 12V, 6 functional, STOP/ POSITION/ INDICATOR/ REVERSING with side number plate light, 5 PIN Bayonet connector.
FT 270 P TB LED PM	FT 270 P TB LED PM Universal LED right rear lamp with reflective triangle, 12V, 6 functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 1 m cable.
FT 270 P TB LED PM Mxx	FT 270 P TB LED PM Universal LED right rear lamp with reflective triangle, 12V, 6 functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, Mxx cable.
FT 270 P TB LED PM BA/ONET SPIN	FT 270 P TB LED PM BA/ONET SPIN Universal LED right rear lamp with reflective triangle, 12V, 6 functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 5 PIN Bayonet connector.
FT 270 P TB LED O PM BA/ONET SPIN	FT 270 P TB LED O PM BA/ONET SPIN Universal LED right rear lamp with reflective triangle, changed, 12V, 6 functional, STOP/ POSITION/ INDICATOR/ FOG with side number plate light, 5 PIN Bayonet connector.

Where x is number for 0 till 9

FRISTOM

Spółka z ograniczoną odpowiedzialnością Sp. k.
86-014 SICIENIKO, ul. Przemysłowa 5
tel. 52 360 90 50

www.fristom.com.pl
NIP 5542926937 REGON 341640907

MICHAŁ DYBICZ

IDIADA PC21050057

Manufacturer

FRISTOM Spółka z ograniczoną odpowiedzialnością Sp. K.
65-014 Świeńko / Polska
ul. Przemysłowa 5
NIP: 554292937, KRS: 0000529238
Tel.: +48 52 360 90 51, Fax: +48 52 327 75 41



Drawn by: Date:

Michał Dybicz 13-04-2020

sheet Nr.

13/13

Type

FT- 270 LED - rear multifunction lamp for trailers EXT03

light source

LED chip SMD chip mounted
AR - 6 LED's - white light color
F1 - 8 LED's - red light color
R1 - 8 LED's - red light color
S1 - 8 LED's - red light color
Za - 6 LED's - amber light color
L - 3 LED's - white light color

sheet description

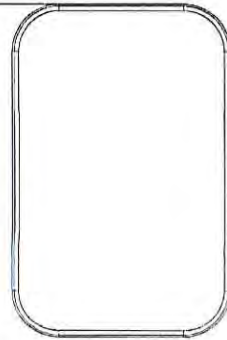
positioning of registration plate light

This drawing is a part of the application for approval

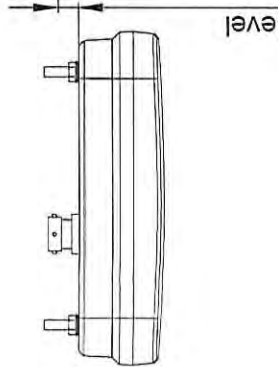
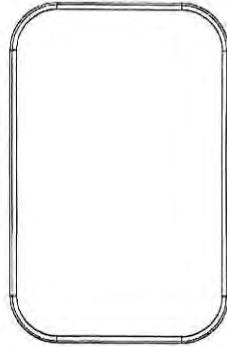
Material used in manufacturing :

- lensshade PC transparent clear
- collimator AR PMMA transparent clear
- collimator F1 PMMA transparent red
- housing ABS black
- frame ABS black
- lens Za PMMA transparent amber
- registration plate reflector ABS black vacuum metallized
- PCB FR4
- AR - 6 LED's - white light color
- F1 - 8 LED's - red light color
- R1 - 8 LED's - red light color
- S1 - 8 LED's - red light color
- Za - 6 LED's - amber light color
- L - 3 LED's - white light color
- potting compound epoxy resin

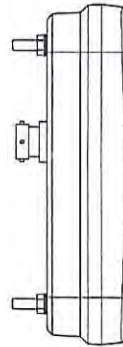
distance



registration plate 520x120



level



lamp level [mm]	distance [mm]
4	26
8	50
14	100
28	200

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86-014 Świeńko, ul. Przemysłowa 5
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www.fristom.com.pl

REGON 341640907
MICHAŁ DYBICZ

IDIADA PC21050057