

Ministerstvo dopravy České republiky
Ministry of Transport of the Czech Republic
Nábřeží L.Svobody 12, 110 15 Praha 1, Czech Republic



OSVĚDČENÍ o:

UDĚLENÍ HOMOLOGACE
ROZŠÍŘENÍ HOMOLOGACE
ODEJMUTÍ HOMOLOGACE
UKONČENÍ VÝROBY

COMMUNICATION concerning:

APPROVAL GRANTED
APPROVAL EXTENDED
APPROVAL WITHDRAWN
PRODUCTION DEFINITELY DISCONT.

typu zpětného světlometu podle Předpisu č. 23
of a type of reversing lamp pursuant to Regulation No. 23

Homologace č.:
Approval No.:

00 8275

Rozšíření č.:

N/A

Extension No.:

~~**typu manévrovacího světlometu podle Předpisu č. 23**~~
~~**of a type of manoeuvring lamp pursuant to Regulation No. 23**~~

Homologace č.:
Approval No.:

N/A

Rozšíření č.:

N/A

Extension No.:

1. Obchodní název nebo značka odrazky:
Trade name or mark of the device:

HANMA, TOTRON, HL, EC

2. Název typu odrazky podle výrobce:
Manufacturer's name for the type
of device:

HML-5148

Varianty:
Variants

—
N/A

3. Název a adresa výrobce:
Manufacturer's name and address:

**Guangzhou Hanma Electronics Technology
Co., Ltd.
No. 8, Jianye Middle Road, Taihe Town,
Baiyun District, Guangzhou, Guangdong,
510540, China**

4. Název a adresa příp. zástupce výrobce:
If applicable, name and address
of manufacturer's representative:

—
N/A



5. K homologaci předloženo dne:
Submitted for approval on:

5 November 2015

6. Homologační zkušebna:
Technical service responsible
for conducting approval tests:

E8/C: TÜV SÜD Czech s.r.o.
Novodvorská 994/138
142 21 Praha 4
Czech Republic

7. Datum zkušebního protokolu:
Date of test report:

18 November 2015

8. Číslo zkušebního protokolu:
Number of test report:

CW170 – 15 – TAC

9. Stručný popis
Concise description

Počet, kategorie a druh zdrojů světla:
Number, category and kind of light source(s):

16x LED nevměnný zdroj světla
non-replaceable light source

Napětí a příkon:
Voltage and wattage:

12 nebo/or 24V / 27 W

Použití elektronického ovladače zdroje světla:
Application of an electronic light source control gear:

–
N/A

a) je součástí světlometu:
being part of the lamp:

ano / ne
yes / no
–
N/A

b) není součástí světlometu:
being not part of the lamp:

ano / ne
yes / no
–
N/A

Napájecí napětí dodávané elektronickým ovladačem zdroje světla:
Input voltage(s) supplied by an electronic light source control gear:

–
N/A

Výrobce a identifikační číslo elektronického ovladače zdroje světla
(pokud je ovladač světelného zdroje součástí světlometu, ale není
do tělesa světlometu zamontován):
Electronic light source control gear manufacturer and identification
number (when the light source control gear is a part of the lamp
but is not included into the lamp body):

–
N/A

Modul zdroje světla:
Light source module:

ano / ne
yes / no

Specifický identifikač. kód modulu zdroje světla:
Light source module specific identification code:

–
N/A



Popřípadě geometrické podmínky montáže a souvisejících změn:

Geometrical conditions of installation and relating variations; if any::

Viz dokumentace výrobce a příložený výkres

See manufacturer's documentation and attached drawing

For a type of manoeuvring lamp pursuant to Regulation No. 23 paragraph 6.2.2.
U typu manévrovacího světlometu podle předpisu č. 23, odstavec 6.2.2

Maximální montážní výška [mm]:

–

Maximum mounting height [mm]:

N/A

10. Umístění schvalovací značky:
Position of the approval mark:

Na krycím skle svítilny.
On the lens of the lamp.

11. Toto zařízení se smí na vozidlo montovat jen jako součást dvojice zařízení:
This device shall be installed on a vehicle only as part of a pair of devices:

ano / ne
yes / no

12. Důvod(y) (případného) rozšíření:

Reason(s) for extension (if applicable):

–

N/A

13. HOMOLOGACE UDĚLENA / ROZŠÍŘENA / ZAMÍTNUTA / ODEJMUTA
APPROVAL IS GRANTED / EXTENDED / REFUSED / WITHDRAWN

14. Místo:
Place:

Praha

15. Datum:
Date:

23 November 2015

16. Podpis:
Signature:

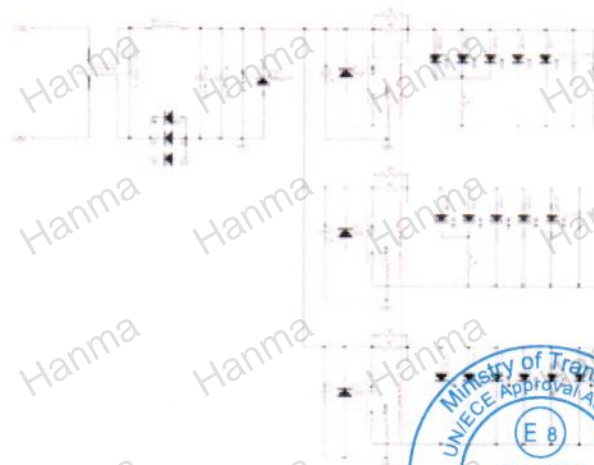
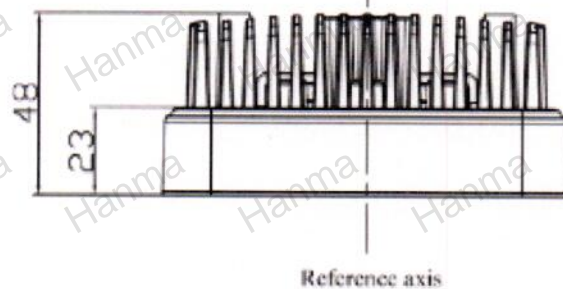
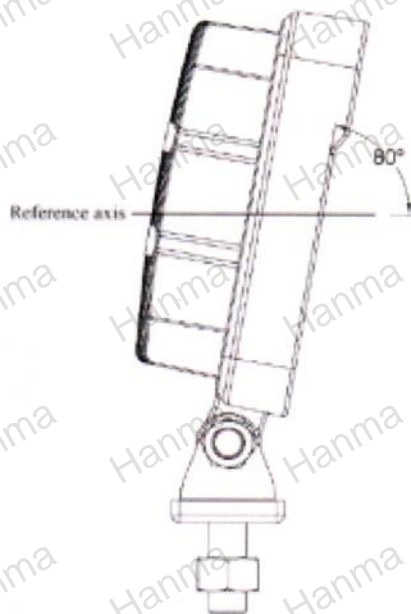
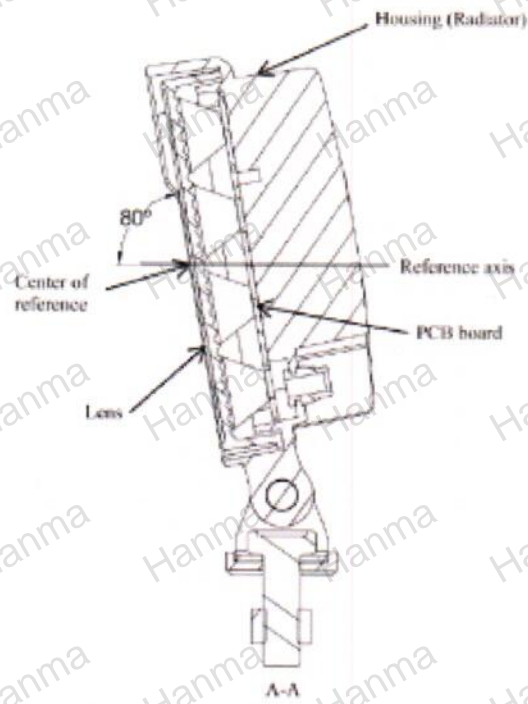
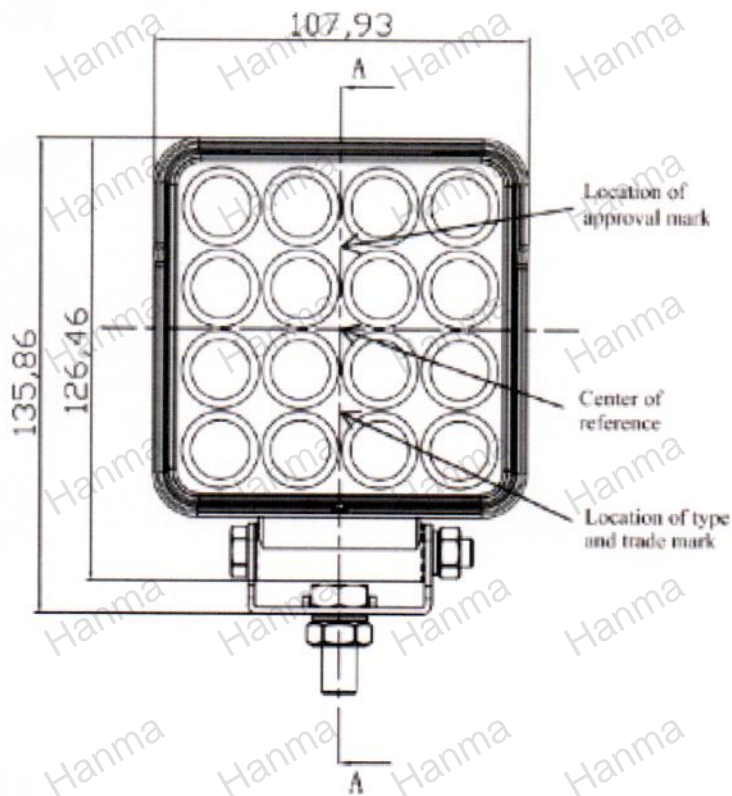
Oleg Spružina

17. Na vyžádání jsou dostupné následující dokumenty, opatřené shora uvedenou schvalovací značkou:
The following documents, bearing the approval number shown above, are available on request.

1 technický protokol č. CW170 – 15 – TAC a dokumentace výrobce

1 Technical Report No. CW170 – 15 – TAC and manufacturer's documentation





The reference axis is parallel to the horizontal and vertical plane of the vehicle

Simplified Presentation

Type: HML-5148

2015-10-22

Assembly

Guangzhou Hanma Electronics Technology Co., Ltd.

Technical Report No.:

CW170 – 15 – TAC

Regulation:

ECE No. 23.00

Manufacturer:

Guangzhou Hanma Electronics Technology Co., Ltd.,
P.R.China

Type:

HML-5148

1/11

UN/ECE Technical Service No. E8/C

TECHNICAL REPORT No. CW170 – 15 – TAC

Test according to Regulation ECE No. 23.00

Uniform provisions concerning the approval of reversing and manoeuvring lamps for power-driven vehicles and their trailers

ECE No. 23.00 – date of entry into force: 1971-12-01

including all amendments up to and including:

ECE No. 23.00, supplement 19 – date of entry into force: 2013-07-15

Objectives: Document for issue of approval certificate

I. Technical data

0.1. Make (trade name of manufacturer):	HANMA, TOTRON, HL, EC
0.2. Type:	HML-5148
0.2.1. Variants:	N/A
0.2.2. Kind of the lighting device:	Reversing lamp
0.2.3. Category or class of device:	AR
0.3. Means of identification of type:	Letter and digit
0.3.1. Location of that marking:	On the lens
0.4. Category of vehicle:	N/A
0.5. Name and address of manufacturer:	Guangzhou Hanma Electronics Technology Co., Ltd. No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China
0.8. Address of assembly plant:	See 0.5.
0.9. Location of the approval mark:	On the lens





Technical Report No.: CW170 – 15 – TAC
 Regulation: ECE No. 23.00
 Manufacturer: Guangzhou Hanma Electronics Technology Co., Ltd.,
 P.R.China
 Type: HML-5148

II. Test report

1. Test conditions

- 1.1. Test sample: 2 samples of the reversing lamp.
Marking: Sample No. 1, Sample No. 2
- 1.2. Test procedures used: According to ECE Regulation No. 23.00
- 1.3. Measuring and test equipment: Used equipments fulfill all requirements of the ECE Regulation No. 23.00
- 1.5. Test track or site: Guangzhou Vkan Certification and Testing Institute
No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, China

2. Test results

2.1. Intensity of light emitted (LED, 12V/24V, 27W)

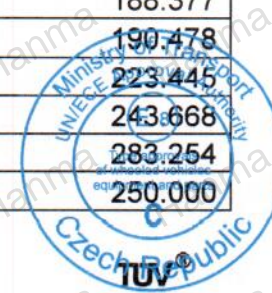
2.1.1. Sample No.1, test voltage 13.5V

2.1.1.1. Intensity of light emitted, all LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	291.000

2.1.1.2. Intensity of light emitted, all LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	215.025
2	H 10U	0.00	10.00	15.000	300.000	243.685
3	10R 10U	10.00	10.00	10.000	300.000	209.647
4	45L 5U	-45.00	5.00	15.000	300.000	194.359
5	10L 5U	-10.00	5.00	20.000	300.000	227.489
6	H 5U	0.00	5.00	25.000	300.000	265.736
7	10R 5U	10.00	5.00	20.000	300.000	219.469
8	45R 5U	45.00	5.00	15.000	300.000	188.377
9	45L V	-45.00	0.00	15.000	300.000	190.478
10	30L V	-30.00	0.00	25.000	300.000	223.445
11	10L V	-10.00	0.00	50.000	300.000	243.668
12	H V	0.00	0.00	80.000	300.000	283.254
13	10R V	10.00	0.00	50.000	300.000	250.000





Technical Report No.:

CW170 – 15 – TAC

Regulation:

ECE No. 23.00

Manufacturer:

Guangzhou Hanma Electronics Technology Co., Ltd.,

P.R.China

Type:

HML-5148

Continuance

14	30R	V	30.00	0.00	25.000	300.000	227.649
15	45R	V	45.00	0.00	15.000	300.000	197.040
16	45L	5D	-45.00	-5.00	15.000	600.000	224.397
17	30L	5D	-30.00	-5.00	25.000	600.000	276.648
18	10L	5D	-10.00	-5.00	50.000	600.000	396.440
19	H	5D	0.00	-5.00	80.000	600.000	453.671
20	10R	5D	10.00	-5.00	50.000	600.000	387.620
21	30R	5D	30.00	-5.00	25.000	600.000	268.410
22	45R	5D	45.00	-5.00	15.000	600.000	235.739
23	Max. in/above the H-plane				-	300.000	292.100
24	Max. between the H-plane and 5°D				-	600.000	468.214
25	Max. below 5°D				-	8000.000	1283.352

2.1.1.3. Intensity of light emitted, all LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.1.4. Intensity of light emitted, (n-1) LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	226.980

2.1.1.5. Intensity of light emitted, (n-1) LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	172.020
2	H 10U	0.00	10.00	15.000	300.000	190.074
3	10R 10U	10.00	10.00	10.000	300.000	169.814
4	45L 5U	-45.00	5.00	15.000	300.000	161.318
5	10L 5U	-10.00	5.00	20.000	300.000	195.641
6	H 5U	0.00	5.00	25.000	300.000	217.904
7	10R 5U	10.00	5.00	20.000	300.000	193.133
8	45R 5U	45.00	5.00	15.000	300.000	163.888
9	45L V	-45.00	0.00	15.000	300.000	152.382
10	30L V	-30.00	0.00	25.000	300.000	176.522
11	10L V	-10.00	0.00	50.000	300.000	185.188
12	H V	0.00	0.00	80.000	300.000	212.441
13	10R V	10.00	0.00	50.000	300.000	192.500
14	30R V	30.00	0.00	25.000	300.000	190.225





Continuance

15	45R	V	45.00	0.00	15.000	300.000	169.454
16	45L	5D	-45.00	-5.00	15.000	600.000	188.493
17	30L	5D	-30.00	-5.00	25.000	600.000	215.785
18	10L	5D	-10.00	-5.00	50.000	600.000	289.401
19	H	5D	0.00	-5.00	80.000	600.000	335.717
20	10R	5D	10.00	-5.00	50.000	600.000	317.848
21	30R	5D	30.00	-5.00	25.000	600.000	198.623
22	45R	5D	45.00	-5.00	15.000	600.000	176.804
23	Max. in/above the H-plane				-	300.000	248.285
24	Max. between the H-plane and 5°D				-	600.000	374.571
25	Max. below 5°D				-	8000.000	1052.349

2.1.1.6. Intensity of light emitted, (n-1) LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.2. Sample No.1, test voltage 28V

2.1.2.1. Intensity of light emitted, all LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	292.354

2.1.2.2. Intensity of light emitted, all LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	208.364
2	H 10U	0.00	10.00	15.000	300.000	229.893
3	10R 10U	10.00	10.00	10.000	300.000	200.832
4	45L 5U	-45.00	5.00	15.000	300.000	186.673
5	10L 5U	-10.00	5.00	20.000	300.000	215.833
6	H 5U	0.00	5.00	25.000	300.000	262.593
7	10R 5U	10.00	5.00	20.000	300.000	221.467
8	45R 5U	45.00	5.00	15.000	300.000	186.360
9	45L V	-45.00	0.00	15.000	300.000	189.654
10	30L V	-30.00	0.00	25.000	300.000	222.857
11	10L V	-10.00	0.00	50.000	300.000	255.670
12	H V	0.00	0.00	80.000	300.000	276.385
13	10R V	10.00	0.00	50.000	300.000	247.054





Continuance

14	30R	V	30.00	0.00	25.000	300.000	224.553
15	45R	V	45.00	0.00	15.000	300.000	193.973
16	45L	5D	-45.00	-5.00	15.000	600.000	221.693
17	30L	5D	-30.00	-5.00	25.000	600.000	268.738
18	10L	5D	-10.00	-5.00	50.000	600.000	379.554
19	H	5D	0.00	-5.00	80.000	600.000	448.295
20	10R	5D	10.00	-5.00	50.000	600.000	384.950
21	30R	5D	30.00	-5.00	25.000	600.000	267.684
22	45R	5D	45.00	-5.00	15.000	600.000	225.695
23	Max. in/above the H-plane				-	300.000	287.223
24	Max. between the H-plane and 5°D				-	600.000	457.742
25	Max. below 5°D				-	8000.000	1243.546

2.1.2.3. Intensity of light emitted, all LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.2.4. Intensity of light emitted, (n-1) LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	237.374

2.1.2.5. Intensity of light emitted, (n-1) LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	178.934
2	H 10U	0.00	10.00	15.000	300.000	193.562
3	10R 10U	10.00	10.00	10.000	300.000	173.462
4	45L 5U	-45.00	5.00	15.000	300.000	167.746
5	10L 5U	-10.00	5.00	20.000	300.000	194.743
6	H 5U	0.00	5.00	25.000	300.000	226.892
7	10R 5U	10.00	5.00	20.000	300.000	197.398
8	45R 5U	45.00	5.00	15.000	300.000	174.917
9	45L V	-45.00	0.00	15.000	300.000	164.754
10	30L V	-30.00	0.00	25.000	300.000	178.395
11	10L V	-10.00	0.00	50.000	300.000	191.863
12	H V	0.00	0.00	80.000	300.000	230.652
13	10R V	10.00	0.00	50.000	300.000	200.238
14	30R V	30.00	0.00	25.000	300.000	196.529





Technical Report No.:

CW170 – 15 – TAC

Regulation:

ECE No. 23.00

Manufacturer:

Guangzhou Hanma Electronics Technology Co., Ltd.,

P.R.China

Type:

HML-5148

Continuance

15	45R	V	45.00	0.00	15.000	300.000	173.632
16	45L	5D	-45.00	-5.00	15.000	600.000	195.362
17	30L	5D	-30.00	-5.00	25.000	600.000	235.763
18	10L	5D	-10.00	-5.00	50.000	600.000	292.469
19	H	5D	0.00	-5.00	80.000	600.000	351.701
20	10R	5D	10.00	-5.00	50.000	600.000	304.472
21	30R	5D	30.00	-5.00	25.000	600.000	223.761
22	45R	5D	45.00	-5.00	15.000	600.000	186.421
23	Max. in/above the H-plane				-	300.000	249.538
24	Max. between the H-plane and 5°D				-	600.000	383.467
25	Max. below 5°D				-	8000.000	1077.734

2.1.2.6. Intensity of light emitted, (n-1) LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.3. Sample No. 2, test voltage 13.5V

2.1.3.1. Intensity of light emitted, all LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	291.630

2.1.3.2. Intensity of light emitted, all LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	199.214
2	H 10U	0.00	10.00	15.000	300.000	232.628
3	10R 10U	10.00	10.00	10.000	300.000	192.111
4	45L 5U	-45.00	5.00	15.000	300.000	170.308
5	10L 5U	-10.00	5.00	20.000	300.000	194.328
6	H 5U	0.00	5.00	25.000	300.000	249.065
7	10R 5U	10.00	5.00	20.000	300.000	209.027
8	45R 5U	45.00	5.00	15.000	300.000	174.508
9	45L V	-45.00	0.00	15.000	300.000	166.907
10	30L V	-30.00	0.00	25.000	300.000	190.874
11	10L V	-10.00	0.00	50.000	300.000	259.176
12	H V	0.00	0.00	80.000	300.000	288.764
13	10R V	10.00	0.00	50.000	300.000	263.412





Continuance

14	30R	V	30.00	0.00	25.000	300.000	199.292
15	45R	V	45.00	0.00	15.000	300.000	172.715
16	45L	5D	-45.00	-5.00	15.000	600.000	207.896
17	30L	5D	-30.00	-5.00	25.000	600.000	258.738
18	10L	5D	-10.00	-5.00	50.000	600.000	370.780
19	H	5D	0.00	-5.00	80.000	600.000	482.497
20	10R	5D	10.00	-5.00	50.000	600.000	397.839
21	30R	5D	30.00	-5.00	25.000	600.000	248.377
22	45R	5D	45.00	-5.00	15.000	600.000	218.854
23	Max. in/above the H-plane				–	300.000	290.005
24	Max. between the H-plane and 5°D				–	600.000	489.926
25	Max. below 5°D				–	8000.000	1351.626

2.1.3.3. Intensity of light emitted, all LEDs on, after 1 minute

-By calculation

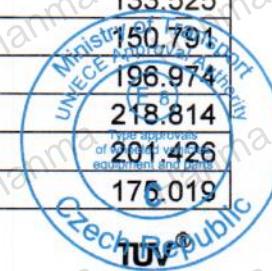
The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.3.4. Intensity of light emitted, (n-1) LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	219.631

2.1.3.5. Intensity of light emitted, (n-1) LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	165.605
2	H 10U	0.00	10.00	15.000	300.000	186.962
3	10R 10U	10.00	10.00	10.000	300.000	160.286
4	45L 5U	-45.00	5.00	15.000	300.000	144.981
5	10L 5U	-10.00	5.00	20.000	300.000	167.123
6	H 5U	0.00	5.00	25.000	300.000	204.234
7	10R 5U	10.00	5.00	20.000	300.000	183.944
8	45R 5U	45.00	5.00	15.000	300.000	151.822
9	45L V	-45.00	0.00	15.000	300.000	133.525
10	30L V	-30.00	0.00	25.000	300.000	150.791
11	10L V	-10.00	0.00	50.000	300.000	196.974
12	H V	0.00	0.00	80.000	300.000	218.814
13	10R V	10.00	0.00	50.000	300.000	201.426
14	30R V	30.00	0.00	25.000	300.000	175.019





Continuance

15	45R	V	45.00	0.00	15.000	300.000	154.650
16	45L	5D	-45.00	-5.00	15.000	600.000	178.196
17	30L	5D	-30.00	-5.00	25.000	600.000	203.642
18	10L	5D	-10.00	-5.00	50.000	600.000	278.529
19	H	5D	0.00	-5.00	80.000	600.000	360.977
20	10R	5D	10.00	-5.00	50.000	600.000	326.228
21	30R	5D	30.00	-5.00	25.000	600.000	183.799
22	45R	5D	45.00	-5.00	15.000	600.000	164.140
23	Max. in/above the H-plane				-	300.000	244.154
24	Max. between the H-plane and 5°D				-	600.000	371.941
25	Max. below 5°D				-	8000.000	1108.334

2.1.3.6. Intensity of light emitted, (n-1) LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.4. Sample No.2, test voltage 28V

2.1.4.1. Intensity of light emitted, all LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	292.108

2.1.4.2. Intensity of light emitted, all LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	197.417
2	H 10U	0.00	10.00	15.000	300.000	209.741
3	10R 10U	10.00	10.00	10.000	300.000	196.785
4	45L 5U	-45.00	5.00	15.000	300.000	158.273
5	10L 5U	-10.00	5.00	20.000	300.000	194.034
6	H 5U	0.00	5.00	25.000	300.000	276.951
7	10R 5U	10.00	5.00	20.000	300.000	210.930
8	45R 5U	45.00	5.00	15.000	300.000	172.639
9	45L V	-45.00	0.00	15.000	300.000	166.185
10	30L V	-30.00	0.00	25.000	300.000	190.372
11	10L V	-10.00	0.00	50.000	300.000	250.669
12	H V	0.00	0.00	80.000	300.000	287.519
13	10R V	10.00	0.00	50.000	300.000	260.308





Continuance

14	30R	V	30.00	0.00	25.000	300.000	196.582
15	45R	V	45.00	0.00	15.000	300.000	170.026
16	45L	5D	-45.00	-5.00	15.000	600.000	214.448
17	30L	5D	-30.00	-5.00	25.000	600.000	251.340
18	10L	5D	-10.00	-5.00	50.000	600.000	354.987
19	H	5D	0.00	-5.00	80.000	600.000	476.780
20	10R	5D	10.00	-5.00	50.000	600.000	395.099
21	30R	5D	30.00	-5.00	25.000	600.000	247.705
22	45R	5D	45.00	-5.00	15.000	600.000	209.530
23	Max. in/above the H-plane				-	300.000	294.013
24	Max. between the H-plane and 5°D				-	600.000	478.968
25	Max. below 5°D				-	8000.000	1309.703

2.1.4.3. Intensity of light emitted, all LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.1.4.4. Intensity of light emitted, (n-1) LEDs on, at HV after 1 minute of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	H V	0.00	0.00	80	300	226.758

2.1.4.5. Intensity of light emitted, (n-1) LEDs on, after 30 minutes of operation

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	10L 10U	-10.00	10.00	10.000	300.000	165.777
2	H 10U	0.00	10.00	15.000	300.000	184.780
3	10R 10U	10.00	10.00	10.000	300.000	158.952
4	45L 5U	-45.00	5.00	15.000	300.000	146.988
5	10L 5U	-10.00	5.00	20.000	300.000	165.504
6	H 5U	0.00	5.00	25.000	300.000	212.658
7	10R 5U	10.00	5.00	20.000	300.000	188.006
8	45R 5U	45.00	5.00	15.000	300.000	162.039
9	45L V	-45.00	0.00	15.000	300.000	144.366
10	30L V	-30.00	0.00	25.000	300.000	161.521
11	10L V	-10.00	0.00	50.000	300.000	204.074
12	H V	0.00	0.00	80.000	300.000	223.282
13	10R V	10.00	0.00	50.000	300.000	210.225
14	30R V	30.00	0.00	25.000	300.000	178.799





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 P.R.China
 Type: HML-5148

Continuance

15	45R	V	45.00	0.00	15.000	300.000	152.196
16	45L	5D	-45.00	-5.00	15.000	600.000	180.996
17	30L	5D	-30.00	-5.00	25.000	600.000	220.500
18	10L	5D	-10.00	-5.00	50.000	600.000	273.539
19	H	5D	0.00	-5.00	80.000	600.000	374.048
20	10R	5D	10.00	-5.00	50.000	600.000	312.499
21	30R	5D	30.00	-5.00	25.000	600.000	207.060
22	45R	5D	45.00	-5.00	15.000	600.000	173.069
23	Max. in/above the H-plane				–	300.000	240.579
24	Max. between the H-plane and 5°D				–	600.000	401.249
25	Max. below 5°D				–	8000.000	1196.115

2.1.4.6. Intensity of light emitted, (n-1) LEDs on, after 1 minute

-By calculation

The luminous intensity distribution after 1 minute of operation complies with the minimum and maximum requirements.

2.2. Colour-White

Sample	Measured values		Limits		
	x	y	$0.310 \leq x \leq 0.500$	$0.382 \leq y \leq 0.440$	$0.050+0.750x \leq y \leq 0.150+0.640x$
No. 1	0.4448	0.4144	Yes	Yes	Yes
No. 2	0.4458	0.4112	Yes	Yes	Yes

2.3. Apparent surface

Measured illuminating surface [mm], Sample No. 1

Upper	Lower	Left	Right
40	42	40	40

3. Specimen submitted to test on: 2015-11-05

4. Date of test: 2015-11-05



Technical Report No.:

CW170 – 15 – TAC

Regulation:

ECE No. 23.00

Manufacturer:

Guangzhou Hanma Electronics Technology Co., Ltd.,

P.R.China

Type:

HML-5148



Czech

11/11

III. Manufacturer's information folder

No. 23.00-HML-5148-00

6 pages total of 2015-10-22

IV. Other documentation

No other documentation

V. Attachments

No attachments

Measuring and test equipment and test site meet the requirements of the applicable legislation. This report must never be reproduced incomplete and without a written permission of the testing laboratory.

VI. Final assessment

The described sample

complies

with the requirements of ECE Regulation No. 23.00
for issue of approval certificate

This technical report consists of pages No. 1 to 11.

Vilem Kunzl

Officially recognized expert

Vit Dvorak

Head of Group of experts

Prague, 2015-11-18

End of the technical report



**APPLICATION FOR APPROVAL PURSUANT TO
ECE REGULATION NO. 23.00
UNIFORM PROVISIONS CONCERNING THE APPROVAL OF REVERSING AND
MANOEUVRING LAMPS FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS
TYPE: HML-5148**



Total Pages:6

Signature: 

Date: 2015-10-22

Place: Guangzhou

Confirmation


We hereby declare that the specimen submitted for this approval test has been manufactured and assembled on conditions of ordinary mass production and that it is compatible with enclosed documentation.



Signature:

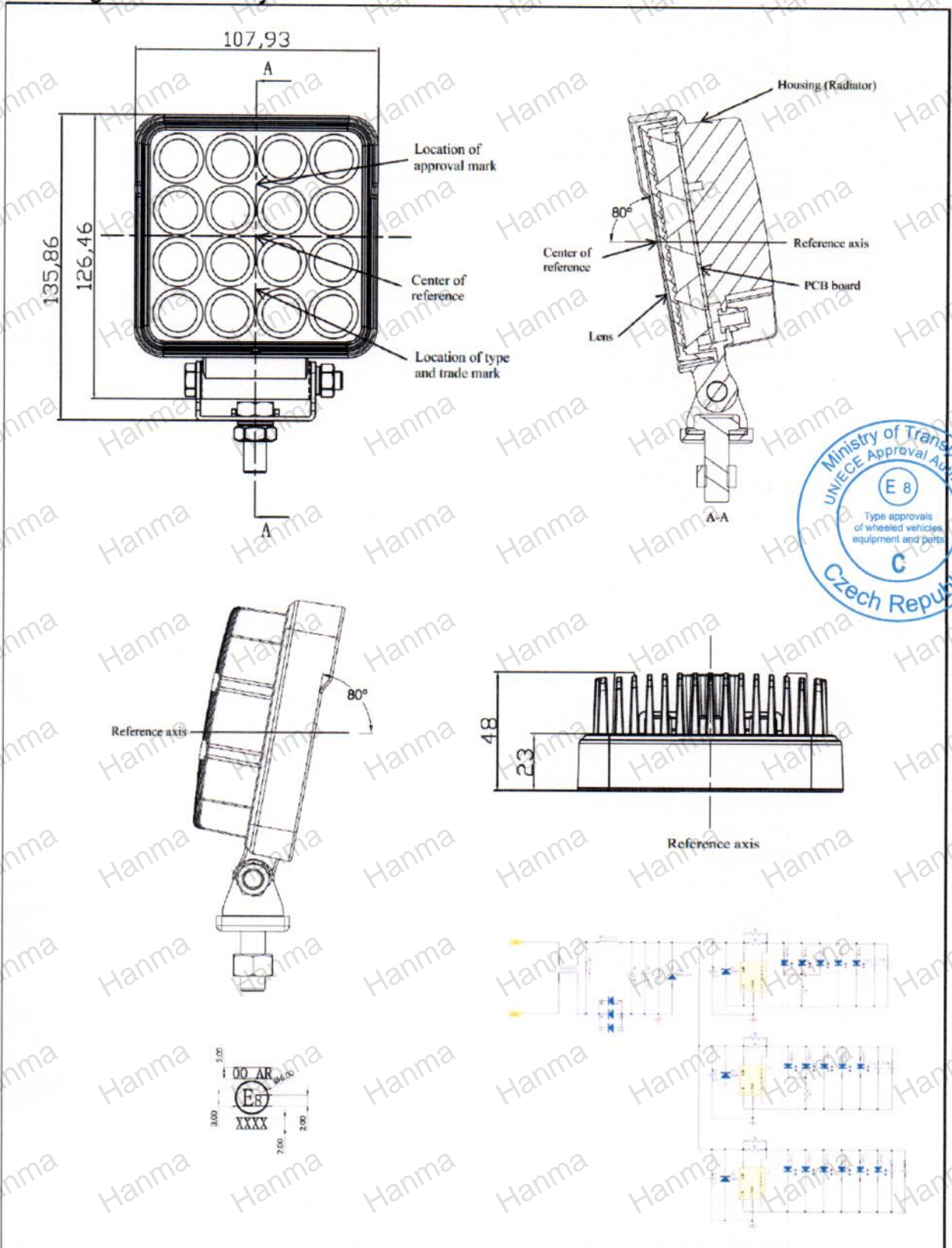
Date: 2015-10-22

Place: Guangzhou

0.	GENERAL	
0.1.	Make (trade mark of manufacturer):	HANMA, TOTRON, HL, EC
0.2.	Type:	HML-5148
0.2.1.	Variants:	N/A
0.2.3.	Intended for:	N/A
0.3.	Means of identification of type:	Letter and digit
0.3.1.	Location of that marking:	On the lens, see drawing no. 1
0.4.	Name and address of manufacturer:	Guangzhou Hanma Electronics Technology Co., Ltd. No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China
0.5.	Location and method of affixing of the approval mark:	Mould on the lens, see drawing no. 1
0.5.1.	Proposal of the approval mark:	00 AR  xxxxx
0.6.	Address of assembly plant:	See 0.4.
1.	TECHNICAL DESCRIPTION	
1.1.	Function(s):	Reversing lamp according to ECE Regulation No. 23.00
1.2.	Assembled:	Independent lamp
1.3.	Category:	Reversing lamp AR
1.4.	Installation:	Installed outside of the vehicle
1.5.	Optical characteristics	
	Function:	Reversing lamp
	Colour:	White
	Optical system:	Non-replaceable LED light sources with transparent lens, no reflector
	Reflector shape:	N/A
	Reflector size:	N/A
1.6.	Light sources	
	Number, category:	16, non-replaceable LED
	Rated voltage:	12V/24V
	Rated power:	27W
	Colour:	White
1.7.	Materials	
	Lens:	Plastic (PC)
	Reflector:	N/A
	Housing (Radiator):	Metal (ADC12)



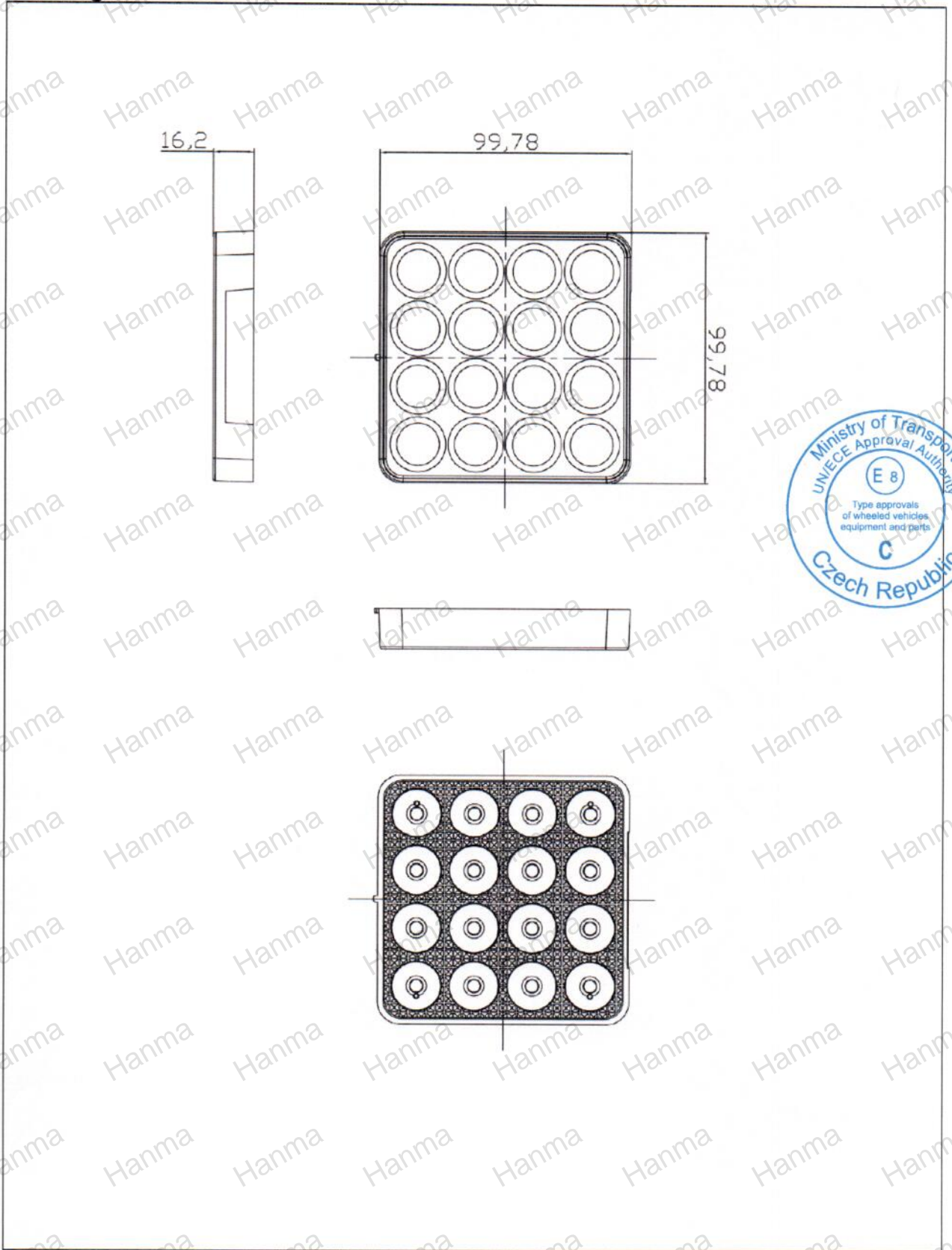
Drawing no.1: Assembly



The reference axis is parallel to the horizontal and vertical plane of the vehicle

Simplified Presentation	Type: HML-5148	2015-10-22
Assembly	Guangzhou Hanma Electronics Technology Co., Ltd.	

Drawing no. 2: Lens



Simplified Presentation	Type: HML-5148	2015-10-22
Lens	Guangzhou Hanma Electronics Technology Co., Ltd.	

