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TEST REPORT 190325-0280393-1M

Report Date: March 25, 2019

Test Component: Stellar 0280393-1M, 90mm modular LED Headlamp

Devices Tested: Three (3) each submitted March 14, 2019

Test Summary (FMVSS-108)

Photometric Tests: FMVSS-108 Table XIX-a LB2V
FMVSS-108 Table XVIII UB2

FMVSS-108 Table XIX-a LB2V	Passed
FMVSS-108 Table XVIII UB2	Passed
Mechanical Tests – SAE J575e	Passed
Color Tests – SAE J578c	Passed

Responsible Engineer:

Gary I. Robin

DESCRIPTION SHEET

Device Name: Stellar 0280393-1M, 90mm modular LED Headlamp

Markings: Lens: “DOT”.SAE HL 17 VOL LED

Material:
Lens: Hard coated PC
Inner Lens: PC
Housing: ADC-12 Aluminum alloy with Electrophoretic Deposition

Source:

FUNCTION	TYPE	VOLTAGE
LB2V	LED	12.8v
UB2	LED	12.8v

TEST RESULTS

Device Name: Stellar 0280393-1M, 90mm modular LED Headlamp

Specification: FMVSS-108

Aim: Sample holding fixture mounted to level goniometer platform with DUT located at center of rotation and tilt. Fixture aimed such that lamp seating plane is normal to detector axis at HV. Goniometer adjusted to align optical axis with HV.

Test voltage: 12.8 volts

Test distance: 25 M

LENS AREA REQUIREMENTS

Lamp is a 90mm modular LED type.
Lens Area requirements are not applicable.

BULB SOCKET REQUIREMENTS

Lamp uses LEDs.
Bulb socket requirements are not applicable.

Results: Meets requirements at all points for:
FMVSS-108 Table XIX-a LB2V
FMVSS-108 Table XVIII UB2

TEST RESULT SHEET

Device Name: Stellar 0280393-1M, 90mm modular LED Headlamp

Mechanical tests: SAE J575e

Sample: 2 1

Vibration test (Shock test): PASSED

There was no evidence of material physical weakness, lens deterioration, displacement or rupture of components. LED parts were not damaged.

Moisture Test: NOT REQ'D

Zero cc of moisture accumulation inside of cavity ($\leq$ 2cc required).

Dust Test: NOT REQ'D

No dust was found on the interior surfaces of the device. The maximum candlepower after external cleaning was at least 100% of the HV candlepower prior to exposure.

Corrosion Test:

There was no evidence of excessive corrosion which would affect the proper functioning of the device. PASSED

Thermal Test:

There was no evidence of reduced function from temperature or humidity. PASSED

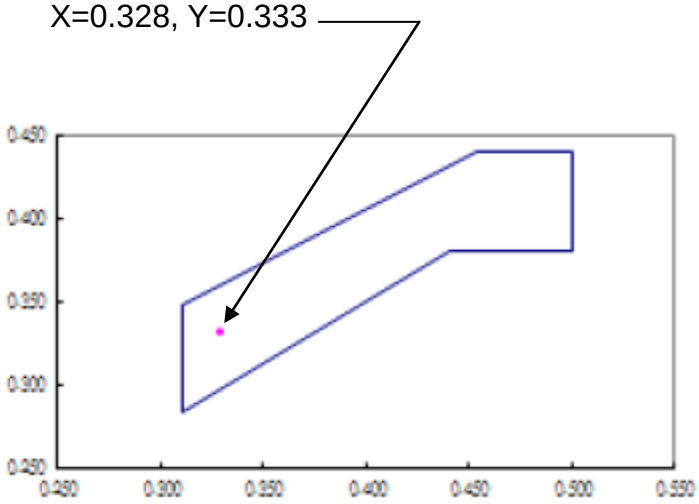
Durability Test: PASSED

LED Life Test: PASSED

Lamp is not blinking, blackening or shutting off after 1000 hrs.

TEST DATA SHEET

Device Name:	Stellar 0280393-1M, 90mm modular LED Headlamp
Sample:	1
Test Item:	Chromaticity Test per SAE J578C
Test Date:	May 11, 2018
Equipment:	Power Supply, Chromaticity Meter
Test Conditions:	Normal Ambient Temperature (25~30 ºC)
Method:	Mount specimen on fixture. Perform chromaticity test at a distance of 1.5 m using CIE fixture.
Requirements:	X>0.31, X<0.5; Y<0.44, Y>0.38; Y=0.15+0.64X, Y=0.05+0.75X
Results:	X=0.328, Y=0.333



PHOTOMETRIC TEST DATA SHEET (1 of 2)

Device Name: Stellar 0280393-1M, 90mm modular LED Headlamp

Sample: 1
Specification: FMVSS-108 Table XIX-a: LB2V
Color: White
Function: Lower Beam

LUMINOUS INTENSITY, CANDELLA

Test Voltage: 12.80 Volts
Test Current: 1.380 Amps
Test Power: 17.664 Watts

TEST POINT	MIN	MAX	MEASURED	H-REAIM	V-REAIM
4U-8R	64		100.65	+8	+4
4U-8L	64		105.54	-8	+4
2U-4L	135		187.1	-4	+2
H-4L	135		170.8	-4	0
H-8L	64		96.53	-8	0
0.6D-1.3R	10000		21151.88	+1.3	-0.59
0.86D-V	4500		17458.75	0	-0.85
0.86D-3.5L	1800	12000	9075	-3.5	-0.85
1.5D-2R	15000		15995.63	+2	-1.5
2D-9R	1250		5242.31	+9	-2
2D9L	1250		2869.44	-9	-2
2D-15R	1000		2265.19	+15	-2
2D-15L	1000		1371.63	-15	-2
4D-20R	300		615.21	+20	-4
4D-20L	300		559.01	-20	-4
4D-4R		12500	93.55	-4	+4
10U TO 90U (MIN)	0	125	3.17	0	+89.85
10U TO 90 U (MAX)	0	125	22.17	0	+10
1.5U:1R TO 3R (MIN)	200		374.89	+1.78	+1.5
1.5U:1R TO 3R (MAX)	200		403.94	+1	+1.5
1.5U:1R TO R (MIN)		1400	30.82	14.8	+1.5
1.5U:1R TO R (MAX)		1400	400.39	3.09	+1.5
1U:1.5L TO L (MIN)		700	20.11	-14.99	+1
1U:1.5L TO L (MAX)		700	406.04	-1.5	+1
0.5U:1.5L TO L (MIN)		1000	28.41	-14.99	+0.5
0.5U:1.5L TO L (MAX)		1000	415.3	-1.5	+0.5
0.5U:1R TO 3R (MIN)	500	2700	667.25	+1	+0.25
0.5U:1R TO 3R (MAX)	500	2700	508.72	+2.45	+0.32

PHOTOMETRIC TEST DATA SHEET (2 of 2)

Device Name: Stellar 0280393-1M, 90mm modular LED Headlamp

Sample: 1
Specification: FMVSS-108 Table XVIII: UB2
Color: White
Function: Lower Beam

LUMINOUS INTENSITY, CANDELLA

Test Voltage: 12.80 Volts
Test Current: 2.500 Amps
Test Power: 32.000 Watts

TEST POINT	MIN	MAX	MEASURED	H-REAIM	V-REAIM
2U-V	1500		6909.38	0	+2
1U3L	5000		31054.38	-3	+1
1U3R	5000		31177.5	+3	+1
H-12R	1500		2274	+12	0
H-9R	3000		5249.56	+9	0
H-6R	5000		9958.13	+6	0
H-3R	15000		24564.38	+3	0
HV	40000	75000	54942.5	0	0
H-3L	15000		32196.25	-3	0
H-6L	5000		10638.75	-6	0
H-9L	3000		5409.44	-9	0
H-12L	1500		2732	-12	0
1.5D-9L	2000		2140.63	-9	-1.5
1.5D-V	5000		9772.5	0	-1.5
1.5D-9R	2000		4113.31	+9	-1.5
2.5D-12R	1000		1854.56	+12	-2.5
2.5D-V	2500		3986.38	0	-2.5
2.5D-12L	1000		1281.63	-12	-2.5
4D-V		12000	2629.19	0	-4

Device meets requirements at all points for LB2V and UB2.

Aim: Lamp mounted perpendicular to HV

Reviewed and approved for submittal by

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Gary I. Robin
Responsible Engineer

March 25, 2019