



भारत सरकार  
Govt. of India

इ.प.वि.के (है)/टी /

ETDC (Hy) / ITIT. 150 / 2022

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This Report Contains 07 Pages



# परीक्षण रिपोर्ट TEST REPORT

भारत सरकार

Government of India

इलेक्ट्रॉनिकी और सूचना प्रौद्योगिकी मंत्रालय

Ministry of Electronics & Information Technology

एस. टी. क्यू. सी. निदेशालय

STQC Directorate

इलेक्ट्रॉनिकी परीक्षण तथा विकास केन्द्र

Electronics Test & Development Centre

कमलानगर, ई.सी.आई.एल. पोस्ट, हैदराबाद - 500 062

Kamalanagar, ECIL Post, Hyderabad - 500 062

27181113

☎ 27181110

फैक्स / Fax : 040-27181113

040-27181125

E-mail : etdchy@stqc.nic.in



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Ministry of Electronics & Information Technology  
Standardisation Testing & Quality Certification, Directorate  
**ELECTRONICS TEST & DEVELOPMENT CENTRE**  
North Kamala Nagar, ECIL P.O., Hyderabad, Telangana – 500 062.  
Email: cscetdchyd@stqc.gov.in

Report No: ETDC (HY) /TR/ T- 150 /2021-2022

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Job No.: 308/2021-2022

Date of Issue: 09 -02-2022

**Subject : Visual functional check on "Raksha Auto Dipper"**

**1.0 SCOPE :**

- 1.1 Service Request No : 308 / 2021-2022 Date: 01 / 02 /2022  
1.2 Testing carried out at : In-house/Onsite  
1.3 Request by : M/s. Kakatiya Energy Systems Pvt. Ltd.,  
(Name & Address of the Organization) D-2, Industrial Estate, Moula Ali, Hyderabad-500040.

1.5 Description of UUT	Qty.	Manufacturer	Model	Sl. No.
1. Raksha Auto Dipper	01	KESPL	RBA-SSR	R0001027
2. Raksha Auto Dipper	01	KESPL	RBA-Sensor	S0001183

- 1.5 Environmental Conditions : Temperature: 25±5 °C, R.H.: <70 %  
1.6 Applicable specification of Item(s) to be tested : As per Customer specification  
1.7 Condition of the Equipment at the time of receipt : Good  
1.8 Method adopted for Testing : OP/ E&S / 014

1.9 Details of Test Equipment/Environmental Simulators used: NIL

Sl.No.	Equipment used	Make/ Model No.	Traceable To	Calibration Validity





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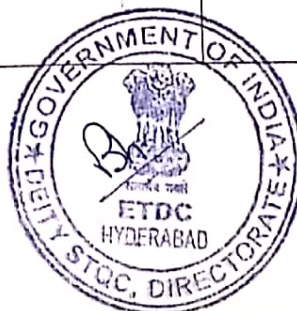
## 2.0 TEST RESULTS:

### Description of Indicator LEDs

Indication Parameter Name	LED Color	Glowing Condition	Indicated Operation
Speed	Yellow	Slow blinking	LOW Vehicle Speed < 20 kmph
		Cont. ON	NORMAL Vehicle Speed >= 20kmph and <=100 kmph
		Fast blinking	HIGH Vehicle Speed > 100 kmph
Road Lights	Orange	Cont. ON	Street Well Lit
		Cont. OFF	Street not well lit
High Beam	Blue	Cont. ON	Head Lamps in High Beam
		Cont. OFF	Head Lamps in Low Beam
Auto / Manual	Green	Cont. ON	Head Lamps under Automatic Control
		Blinking	Head Lamps locked in manual override

### Visual Functional Checks for Raksha Auto Dipper

Sl. No	Test Parameter	Specification	Observation	Remark
1	Switch OFF - Shutdown	Shifting the head lamp switch to OFF Position anytime switches OFF all the head lamps and all the indicator LEDs.	Vehicle Head Lamps are switched OFF. Speed - Yellow - OFF Road Light - Orange - OFF High Beam - Blue - OFF Auto Mode - Green - OFF	Satisfactory
2	Automatic Mode - High Beam	When the vehicle is travelling in dark between 20 to 100 kmph on an unlit road and the Head Lamp switch is in Low Beam ON position and there are no oncoming vehicle lights, Raksha Auto Dipper, in Automatic Mode, shall switch the Head Lamps to High Beam.  The indication LEDs shall be : Speed - Yellow - Cont. ON Road Light - Orange - OFF High Beam - Blue - ON Auto Mode - Green - Cont. ON	Vehicle Head Lamps are switched in High Beam. Speed - Yellow - Cont. ON Road Light - Orange - OFF High Beam - Blue - ON Auto Mode - Green - Cont. ON	Satisfactory





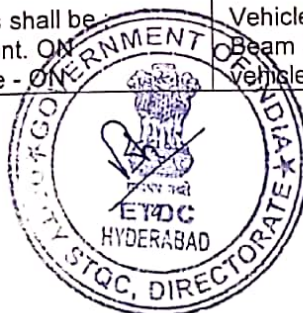


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3	Automatic Mode – Low Beam	<p>When the vehicle is travelling in dark between 20 to 100 kmph on an unlit road and the Head Lamp switch is in Low Beam ON position, Raksha Auto Dipper, in Automatic Mode shall switch the Head Lamps to Low Beam on encountering oncoming vehicles before the distance reaches 150 mtrs and stays in Low Beam until cross over if the oncoming vehicle is approaching with a Low Beam.</p> <p>The indication LEDs shall be Speed - Yellow – Cont. ON Road Light - Orange - OFF High Beam - Blue - OFF Auto Mode - Green - Cont. ON</p>	<p>Vehicle Head Lamps shifted to Low Beam on encountering oncoming vehicles before the distance of around 150 mtrs and stayed in Low Beam until cross over.</p> <p>Speed - Yellow – Cont. ON Road Light - Orange - OFF High Beam - Blue - OFF Auto Mode - Green – Cont. ON</p>	Satisfactory
4	Automatic Mode – defensive High Beam	<p>When the vehicle is travelling in dark between 20 to 100 kmph on an unlit road and the Head Lamp switch is in Low Beam ON position, Raksha Auto Dipper, in Automatic Mode shall switch the Head Lamps to Low Beam on encountering oncoming vehicles as mentioned above and Shifts to High Beam at a distance of about 100 mtrs if the oncoming vehicle continues to approach with a High Beam.</p> <p>The indication LEDs shall be : Speed - Yellow - Cont. ON Road Light - Orange - OFF High Beam - Blue - ON Auto Mode - Green - Cont. ON</p>	<p>Vehicle Head Lamps shifted to Low Beam on encountering oncoming vehicles before the distance of around 150 mtrs and shifted to High Beam at a distance of about 100 mtrs when the oncoming vehicle continues to approach with a High Beam.</p> <p>Speed - Yellow – Cont. ON Road Light - Orange - OFF High Beam - Blue - ON Auto Mode - Green – Cont. ON</p>	Satisfactory
5	Automatic Mode – Low Beam in well lit roads.	<p>When the vehicle is travelling between 20 to 100 kmph on a well lit road and the Head Lamp switch is in Low Beam ON position, Raksha Auto Dipper, in Automatic Mode shall switch the Head Lamps to Low Beam irrespective of oncoming vehicle lights.</p> <p>The indication LEDs shall be Speed - Yellow - Cont. ON Road Light - Orange - ON</p>	<p>Vehicle Head Lamps shifted to Low Beam irrespective of oncoming vehicle lights.</p>	Satisfactory



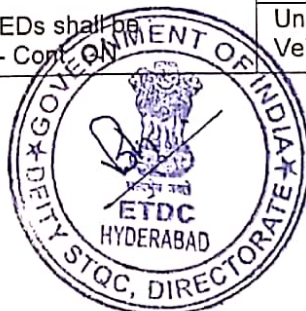


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		High Beam - Blue - OFF Auto Mode - Green - Cont. ON	Speed - Yellow – Cont. ON Road Light - Orange - ON High Beam - Blue - OFF Auto Mode - Green – Cont. ON	
6.1	Automatic Mode – Low Beam in Low Speed	When vehicle is travelling at less than 20 kmph and the Head Lamp switch is in Low Beam ON position, Raksha Auto Dipper maintains the head lamps in Low Beam irrespective of road lighting or oncoming vehicle light.	Unlit Road Vehicle Head Lamps are in Low Beam. Speed - Yellow – Slow Blinking Road Light - Orange – OFF High Beam - Blue - OFF Auto Mode - Green – Cont. ON	Satisfactory
6.2		The indication LEDs shall be : Speed - Yellow - Slow Blinking Road Light - Orange - ON if road well lit and OFF otherwise. High Beam - Blue - OFF Auto Mode - Green - Cont. ON	Well Lit Road Vehicle Head Lamps are in Low Beam. Speed - Yellow – Slow Blinking Road Light - Orange – ON High Beam - Blue - OFF Auto Mode - Green – Cont. ON	
7.1	Automatic Mode – High Beam in High Speed	When vehicle is travelling at more than 100 kmph and the Head Lamp switch is in Low Beam ON position, Raksha Auto Dipper maintains the head lamps in High Beam irrespective of road lighting or oncoming vehicle light.	Unlit Road Vehicle Head Lamps are in High Beam. Speed - Yellow – Fast Blinking Road Light - Orange – OFF High Beam - Blue - ON Auto Mode - Green – Cont. ON	Satisfactory
7.2		The indication LEDs shall be : Speed - Yellow - Fast Blinking Road Light - Orange - ON if road well lit and OFF otherwise. High Beam - Blue - ON Auto Mode - Green – Cont. ON	Well Lit Road Vehicle Head Lamps are in High Beam. Speed - Yellow – Fast Blinking Road Light - Orange – ON High Beam - Blue - ON Auto Mode - Green – Cont. ON	
8.1	Manual Override - Beam Reversal	While the vehicle is travelling between 20 to 100 kmph, shifting the head lamp switch to High Beam ON manually overrides the Automatic decision of the sensor and locks the Beam in this state until the head lamp switch stays unchanged. This happens irrespective of road lighting or vehicle speed.	Unlit Road. Vehicle Head Lamps shifted High Beam at a distance of about 100 mtrs when the oncoming vehicle continues to approach with a High Beam. Speed - Yellow – Cont. ON Road Light - Orange – OFF High Beam - Blue - ON Auto Mode - Green – Blinking	
8.2		The indication LEDs shall be : Speed - Yellow - Cont. ON	Unlit Road. Vehicle Head Lamps shifted from	





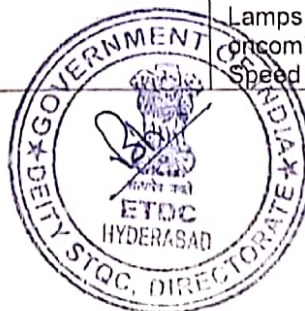


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		Road Light - Orange - ON if road well lit and OFF otherwise. High Beam - Blue – ON when Head Lamps in High Beam and OFF when in Low Beam Auto Mode - Green - Blinking	High to Low Beam. Speed - Yellow – Cont. ON Road Light - Orange – OFF High Beam - Blue - OFF Auto Mode - Green – Blinking	Satisfactory	
8.3			Well Lit Road. Vehicle Head Lamps shifted from Low to High Beam. Speed - Yellow – Cont. ON Road Light - Orange – ON High Beam - Blue - ON Auto Mode - Green – Blinking		
9.1	Manual Flash	Pulling the head lamp switch to Flash position and releasing (either in ON or OFF condition), reverses the Head Lamps and thereby flashing the Head Lamps. (Irrespective of oncoming vehicle lights or road lighting or vehicle speed or day light)	In Day Light Vehicle Moving < 20 kmph, Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Slow Blinking Road Light - Orange – OFF High Beam - Blue – Blinking Auto Mode - Green – Blinking	Satisfactory	
9.2			In Day Light Vehicle Moving 20 to 100 kmph Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Cont. ON Road Light - Orange – OFF High Beam - Blue – Blinking Auto Mode - Green – Blinking		
9.3			The indication LEDs when the head lamp switch is in pulled back state shall be : Speed - Yellow – Cont ON / Slow Blinking / Fast Blinking depending on the vehicle speed. Road Light - Orange - ON if road well lit and OFF otherwise. High Beam - Blue – ON if changed to High Beam and OFF if changed to Low Beam Auto Mode - Green - Blinking		Vehicle Moving at < 20 kmph, Road Lit Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Slow Blinking Road Light - Orange – ON High Beam - Blue – Blinking Auto Mode - Green – Blinking
9.4			Road well Lit Vehicle Moving between 20 to 100 kmph, Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Cont. ON Road Light - Orange – ON High Beam - Blue – Blinking Auto Mode - Green – Blinking		
9.5			Road Not Lit Vehicle Moving at < 20 kmph, Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Slow Blinking		



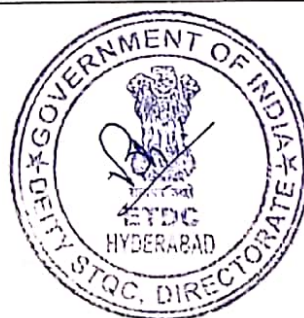


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9.6			Road Light - Orange – OFF High Beam - Blue – Blinking Auto Mode - Green – Blinking	
9.7			Road Not Lit Vehicle Moving between 20 to 100 kmph, Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Cont. ON Road Light - Orange – OFF High Beam - Blue – Blinking Auto Mode - Green – Blinking	
10.1			Road Not Lit Vehicle Moving > 100 kmph, Head Lamps flashed with / without oncoming vehicle lights. Speed - Yellow – Fast Blinking Road Light - Orange – OFF High Beam - Blue – Blinking Auto Mode - Green – Blinking	
10.2	Auto Fault Isolation and Restoration post fault clearance.	In case of any lamp failure in open circuit condition or short circuit condition, all indication LEDs on the Sensor shall blink together and Raksha Auto Dipper shall shutdown the supply to faulty lamp circuit and switch ON all the remaining lamps. Raksha Auto Dipper shall supply power to the Lamp once the fault is rectified without any need for system reset. As long as the fault exists the indicator LEDs shall all keep blinking together.	Disconnecting one Lamp (Open Circuit) and switches ON all other Lamps. Speed - Yellow – Blinking Road Light - Orange – Blinking High Beam - Blue – Blinking Auto Mode - Green – Blinking	Satisfactory
10.3			Reconnecting the Lamp resumes the regular operation of the Raksha Auto Dipper. All indicator LEDs blinking stops.	
10.4			Short Circuiting one Lamp and switches ON all other Lamps. Speed - Yellow – Blinking Road Light - Orange – Blinking High Beam - Blue – Blinking Auto Mode - Green – Blinking	
			Removing the Short Circuit Fault resumes the regular operation of the Raksha Auto Dipper. The Lamp switches ON as before. All indicator LEDs blinking stops.	





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**3.0 CONCLUSIONS / REMARKS:**

RESULTS ARE SELF EXPLANATORY.

NOTE : THIS REPORT CONTAINS NO HAND MADE CORRECTIONS.



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Smt. A.N. Bharathi  
Scientist 'C'  
OIC, CSC  
Electronics Test & Development Centre  
Govt. of India, Min. of Electronics & Inf. Tech. Stqc Directorate  
Kamala Nagar, ECIL (P.O.), HYDERABAD-62.