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# Certificado de Conformidade de Produto

Certificate of Conformity of the Product

Empresa Fabricante *Manufacturer Company*  
**ESB Indústria e Comércio de Eletro Eletrônicos LTDA**  
Rua Armelindo Fabian, nº 395 – Bairro Agrícola – CEP 99714-500 – Erechim – RS  
CNPJ: 13.348.127/0001-48

Nome Fantasia *Fantasy Name*  
**ESB Automação**

Escopo / Produtos (s) *Scope / Products*  
**Luminárias para Iluminação Pública Viária**  
Luminária Pública para Iluminação Viária Tecnologia LED  
OSRAM DURIS S8 / IP66 / 77.000 Horas

Referência Técnica/Legal *Regulation*  
**Portarias INMETRO Nº 118 de 06/03/2015 e Nº 20 de 15/02/2017**

Certificado nº *Certificate number*: 2102420  
Contrato nº *Contract number*: 2020ELE039  
Modelo da Certificação *Certification Model*: Modelo 5  
Data emissão *Date of issue*: 09/02/2021  
Validade deste Certificado *Expiry date*: 09/02/2025  
Página *Page*: 02/04  
Revisão *Review*: 02

<b>Luminárias para Iluminação Pública Viária</b> <i>Fixtures for Roadway Lighting</i>											
Luminária Pública para iluminação viária Tecnologia Osram Duris S8 / IP66 / 77.000 horas <i>Public luminaire for street lighting LED technology Osram Duris S8 / IP66 / 77.000 horas</i>											
Marca <i>Brand</i>	Modelo ou Código <i>Model or Code</i>	Descrição <i>Description</i>					Código de Barras <i>Bar Codes</i>				
		Potência <i>Power</i>	Fluxo Luminoso <i>Luminous Flux</i>	Eficiência luminosa <i>Luminous efficiency</i>	Fator de Potência <i>Power factor</i>	TCC(K) TCC(K)					
ESB LIGHT	LUMINÁRIA POSTE INJETADA LED LPI80OS-5	80 W	/	11600 lm	/	145 lm/W	/	≥ 0,98	/	5000 K	-----
ESB LIGHT	LUMINÁRIA POSTE INJETADA LED LPI100OS-5	100 W	/	14500 lm	/	145 lm/W	/	≥ 0,98	/	5000 K	-----
ESB LIGHT	LUMINÁRIA POSTE INJETADA LED LPI120OS-5	120 W	/	17400 lm	/	145 lm/W	/	≥ 0,98	/	5000 K	-----
ESB LIGHT	LUMINÁRIA POSTE INJETADA LED LPI150OS-5	150 W	/	21750 lm	/	145 lm/W	/	≥ 0,98	/	5000 K	-----
ESB LIGHT	LUMINÁRIA POSTE INJETADA LED LPI200OS-5	200 W	/	29000 lm	/	145 lm/W	/	≥ 0,98	/	5000 K	-----

Nota: Relatório de ensaio nº Lite 050-05-2021 Rev.00, Lite 050-07-2021 Rev.00, Lite 050-06-2021 Rev.00, Lite 050-08-2021 Rev.00, OS 6573-2021 01, OS 6573-2021 04 e Lite 050-10-2021 Rev.00/2020 datado de 29/04/2021 Laboratório Intertek do Brasil Inspeções Ltda.CRL 0678.  
Note: Test report no. Lite 050-05-2021 Rev.00, Lite 050-07-2021 Rev.00, Lite 050-06-2021 Rev.00, Lite 050-08-2021 Rev.00, OS 6573-2021 01, OS 6573-2021 04 e Lite 050-10-2021 Rev.00/2020 datado de 2021/04/29 Laboratório Intertek do Brasil Inspeções Ltda.CRL 0678.

Avaliação do SGQ Fabricante: ESB Indústria e Comércio de Eletro Eletrônicos LTDA datado de 13/02/2020.  
*Evaluation of the QMS Manufacturer: ESB Indústria e Comércio de Electretro Eletrônica LTDA dated 2020/13/02*

Revisão *Review*: 01  
Data *Date*: 07/04/2021.  
Página *Page*: 01/05.

Descrição *Description*: Alteração da Razão Social de ESB INDÚSTRIA E COMÉRCIO DE ELETRO ELETRÔNICOS EIRELI para ESB Indústria e Comércio de Eletro Eletrônicos LTDA.

Revisão *Review*: 02  
Data *Date*: 17/05/2021.  
Página *Page*: 02/05 E 03/05

Descrição *Description*: inclusão de numeração dos relatórios de ensaios efetivos.

A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do CATA Certificadora previstas no Relatório de Avaliação da Conformidade – RAC – específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro. Este Certificado está vinculado ao endereço e contrato acima descrito. *The validity of this Certificate of Conformity is tied to the performance of the maintenance and treatment evaluations of possible nonconformities according to the CATA Certificadora guidelines provided in the specific RAC - Conformity Assessment Report in order to verify the updated condition of regularity of this Certificate of Conformity, the database of certified products and services of Inmetro must be consulted. This Certificate is bound to the address and contract described above.*







# Certificado de Conformidade de Produto

Certificate of Conformity of the Product

Contrato n° Contract number: 2020ELE039  
Modelo da Certificação Certification Model: Modelo 5  
Data emissão Date of issue: 09/02/2021  
Validade deste Certificado Expiry date: 09/02/2025  
Página Page: 04/04  
Revisão Review: 02

## Etiquetas ENCE dos produtos Certificados

Conforme descrição na página 2  
Label ENCE of the certified products  
According to description on page 2

Modelo de etiqueta ENCE com dados fornecidos pelo detentor da Certificação. Modelos de labels ENCE provided by the applicant

<p><b>ENERGIA</b> ILUMINAÇÃO PÚBLICA VIÁRIA</p> <p>Fornecedor Marca Modelo Tipo (Lâmpada de Descarga ou Tecnologia LED)</p> <p>Mais eficiente</p> <p>A B C D</p> <p>Menos eficiente</p> <p>Potência 80 (W) Eficiência Luminosa 145 (lm/W) Vida Declarada Nominal 77.000 (h)</p> <p>PROCEL PROGRAMA BRASILEIRO DE ETIQUETAGEM</p> <p>Selo de Segurança INMETRO Registro: 000303460</p> <p>Instruções de instalação e recomendações de uso, leia o Manual do aparelho</p>	<p><b>ENERGIA</b> ILUMINAÇÃO PÚBLICA VIÁRIA</p> <p>Fornecedor Marca Modelo Tipo (Lâmpada de Descarga ou Tecnologia LED)</p> <p>Mais eficiente</p> <p>A B C D</p> <p>Menos eficiente</p> <p>Potência 100 (W) Eficiência Luminosa 145 (lm/W) Vida Declarada Nominal 77.000 (h)</p> <p>PROCEL PROGRAMA BRASILEIRO DE ETIQUETAGEM</p> <p>Selo de Segurança INMETRO Registro: 000303460</p> <p>Instruções de instalação e recomendações de uso, leia o Manual do aparelho</p>	<p><b>ENERGIA</b> ILUMINAÇÃO PÚBLICA VIÁRIA</p> <p>Fornecedor Marca Modelo Tipo (Lâmpada de Descarga ou Tecnologia LED)</p> <p>Mais eficiente</p> <p>A B C D</p> <p>Menos eficiente</p> <p>Potência 120 (W) Eficiência Luminosa 145 (lm/W) Vida Declarada Nominal 77.000 (h)</p> <p>PROCEL PROGRAMA BRASILEIRO DE ETIQUETAGEM</p> <p>Selo de Segurança INMETRO Registro: 000303460</p> <p>Instruções de instalação e recomendações de uso, leia o Manual do aparelho</p>
<p>Código Code: LUMINÁRIA POSTE INJETADA LED LP1800S-5</p>	<p>Código Code: LUMINÁRIA POSTE INJETADA LED LP1000S-5</p>	<p>Código Code: LUMINÁRIA POSTE INJETADA LED LP1200S-5</p>
<p><b>ENERGIA</b> ILUMINAÇÃO PÚBLICA VIÁRIA</p> <p>Fornecedor Marca Modelo Tipo (Lâmpada de Descarga ou Tecnologia LED)</p> <p>Mais eficiente</p> <p>A B C D</p> <p>Menos eficiente</p> <p>Potência 150 (W) Eficiência Luminosa 145 (lm/W) Vida Declarada Nominal 77.000 (h)</p> <p>PROCEL PROGRAMA BRASILEIRO DE ETIQUETAGEM</p> <p>Selo de Segurança INMETRO Registro: 000303460</p> <p>Instruções de instalação e recomendações de uso, leia o Manual do aparelho</p>	<p><b>ENERGIA</b> ILUMINAÇÃO PÚBLICA VIÁRIA</p> <p>Fornecedor Marca Modelo Tipo (Lâmpada de Descarga ou Tecnologia LED)</p> <p>Mais eficiente</p> <p>A B C D</p> <p>Menos eficiente</p> <p>Potência 200 (W) Eficiência Luminosa 145 (lm/W) Vida Declarada Nominal 77.000 (h)</p> <p>PROCEL PROGRAMA BRASILEIRO DE ETIQUETAGEM</p> <p>Selo de Segurança INMETRO Registro: 000303460</p> <p>Instruções de instalação e recomendações de uso, leia o Manual do aparelho</p>	
<p>Código Code: LUMINÁRIA POSTE INJETADA LED LP1500S-5</p>	<p>Código Code: LUMINÁRIA POSTE INJETADA LED LP12000S-5</p>	

Light is OSRAM

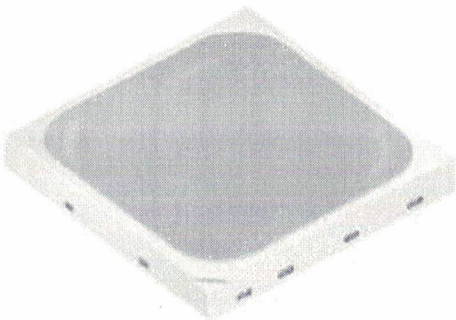
**OSRAM**  
Opto Semiconductors

**DURIS<sup>®</sup> S 8**  
**White (CCT 2200 K – 6500 K)**

ANSI/IES LM-80-15 Test Report

Test Documentation No.:

190366W6 ( Document no. OSRM050-A3-190) – 30<sup>th</sup> September 2020



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## LM80 14000 Hour Interval Test Report

### IES LM-80-15 Approved Method for Measuring Lumen Maintenance of LED Light Sources

#### CSA Group Report: OSRM050-A3-190

August 27, 2020

Manufacturer:	OSRAM
Models tested:	GWP9LR34.PM DURIS S8
Test conditions:	24 devices @ 55.0 C, 0.200 A 18 devices @ 85.0 C, 0.200 A 18 devices @ 105.0 C, 0.200 A

Prepared for: OSRAM Opto Semiconductors (Malaysia) Sdn. Bayan Lepas Free Industrial Zone Phase 1, 11900 Bayan Lepas, Penang, Malaysia  Attn:	Testing performed by: CSA Group Seattle 14833 NE 87th St Redmond, WA 98052 425-605-8500 <a href="http://www.csagroupseattle.org">www.csagroupseattle.org</a>
Test report prepared by:  <i>Gabriel Trippel</i>  Project Engineer, Test and Measurement Services	Test report approved by:  <i>KC Fletcher</i>  Project Manager, Test and Measurement Services

### 1.0 Statement of test conditions, summary of results, and reporting requirements:

Part number: GWP9LR34.PM					
Life test conditions				Summary of results	
Test condition	Drive current (A)	Case temperature (°C)	Elapsed life test time (hrs)	Average lumen maintenance (%)	Average chromaticity shift ( $\Delta u'v'$ )
TC1	0.200	55	14000	98.9	0.0002
TC2	0.200	85	14000	97.0	0.0015
TC3	0.200	105	14000	91.3	0.0046
LM80-15 Reporting requirements					
1. Number of samples tested:			24 samples @ 55°C, 18 samples @ 85°C, 18 samples @ 105°C		
2. Description of LED light sources			LED Package <sup>1</sup>		
3. Description of auxiliary equipment			see section 6.1 below		
4. Operating cycle			LED packages are driven at constant current for life test and are pulsed for photometric test.		
5. Ambient conditions, airflow, relative humidity			LED's are operated on controlled thermal plates in an environment that complies with the requirements given in Section 4.4 of LM80-15. Case temperature (Ts): controlled to within -2°C, Surrounding air temp: controlled to within -5°C of Ts, Humidity: < 65 RH, No forced air flow		
6. Case temperature (test point temperature)			See summary table above for test conditions. The temperature measurement point is shown in Sec. 6.3.		
7. Drive current during life test			see summary table above		
8. Initial luminous flux and forward voltage			see data tables for individual test conditions		
9. Lumen maintenance data for each individual LED light source			see data tables for individual test conditions		
10. Observation of LED light source failures			see data tables for individual test conditions		
11. LED light source monitoring intervals			see data tables for individual test conditions		
12. Photometric measurement uncertainty			k=2 expanded measurement uncertainty for relative luminous flux measurements is $\pm 2.0\%$		
13. Chromaticity shift reported over the measurement time			see data tables for individual test conditions		
14. Test start date			December 6, 2018		
15. ANSI target and calculated CCT values			see data tables		

Notes:

- per ANSI/IESNA RP-16-05 Addendum b, *Nomenclature and Definitions for Illuminating Engineering*

**TABLE 1.1 - Initial ANSI Target & Calculated CCT Results**
**GWP9LR34.PM**

Load board ID	Device number	Zero hour measurements		Load board ID	Device number	Zero hour measurements		Load board ID	Device number	Zero hour measurements	
		ANSI Target* CCT (K)	Initial Calculated CCT (K)			ANSI Target* CCT (K)	Initial Calculated CCT (K)			ANSI Target* CCT (K)	Initial Calculated CCT (K)
11000011570D031C	D1	2725±145	2749	400000115045031C	D1	2725±145	2757	0500001166BB031C	D1	2725±145	2774
	D2	2725±145	2781		D2	2725±145	2772		D2	2725±145	2764
	D3	2725±145	2768		D3	2725±145	2760		D3	2725±145	2761
	D4	2725±145	2767		D4	2725±145	2754		D4	2725±145	2757
	D5	2725±145	2772		D5	2725±145	2740		D5	2725±145	2767
	D6	2725±145	2760		D6	2725±145	2760		D6	2725±145	2764
230000115662031C	D1	2725±145	2757	4C0000116814031C	D1	2725±145	2770	2D00001165CA031C	D1	2725±145	2758
	D2	2725±145	2769		D2	2725±145	2770		D2	2725±145	2766
	D3	2725±145	2754		D3	2725±145	2761		D3	2725±145	2775
	D4	2725±145	2782		D4	2725±145	2765		D4	2725±145	2768
	D5	2725±145	2761		D5	2725±145	2765		D5	2725±145	2773
	D6	2725±145	2760		D6	2725±145	2774		D6	2725±145	2770
680000116184031C	D1	2725±145	2784	AC00001144A5031C	D1	2725±145	2759	BF0000115601031C	D1	2725±145	2757
	D2	2725±145	2759		D2	2725±145	2769		D2	2725±145	2764
	D3	2725±145	2751		D3	2725±145	2754		D3	2725±145	2769
	D4	2725±145	2770		D4	2725±145	2748		D4	2725±145	2774
	D5	2725±145	2758		D5	2725±145	2776		D5	2725±145	2772
	D6	2725±145	2764		D6	2725±145	2759		D6	2725±145	2758
8D0000115420031C	D1	2725±145	2766								
	D2	2725±145	2748								
	D3	2725±145	2753								
	D4	2725±145	2749								
	D5	2725±145	2749								
	D6	2725±145	2749								

\* target CCT as defined in ANSI C78.377-2008















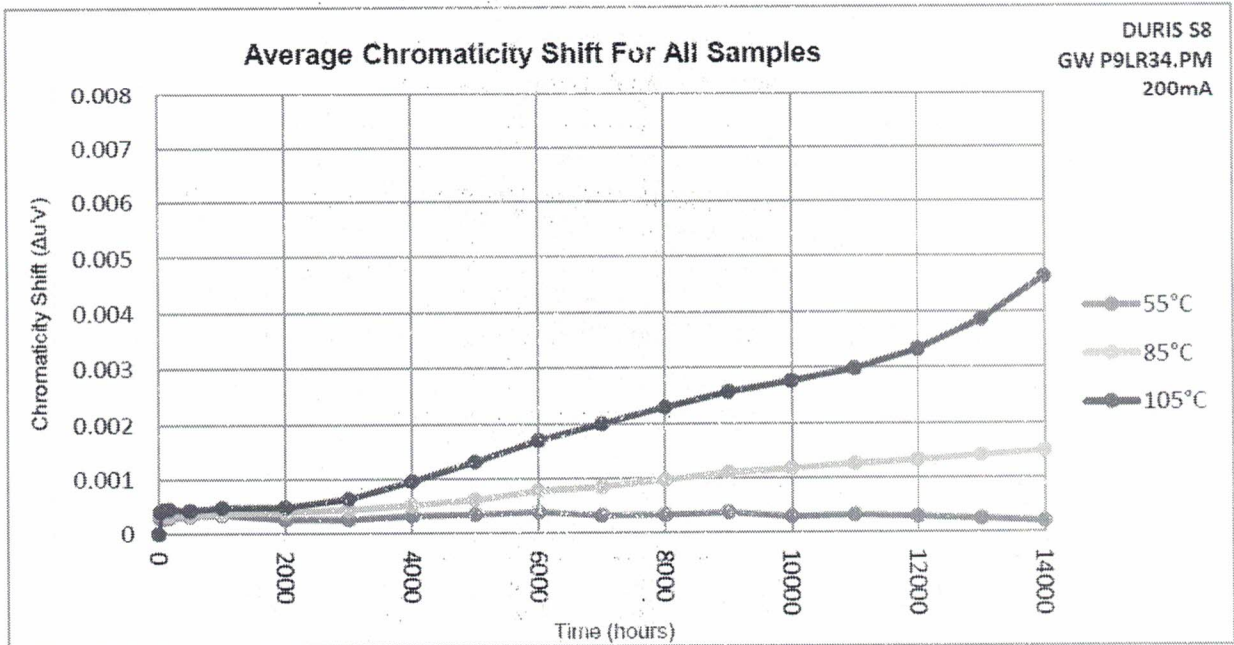
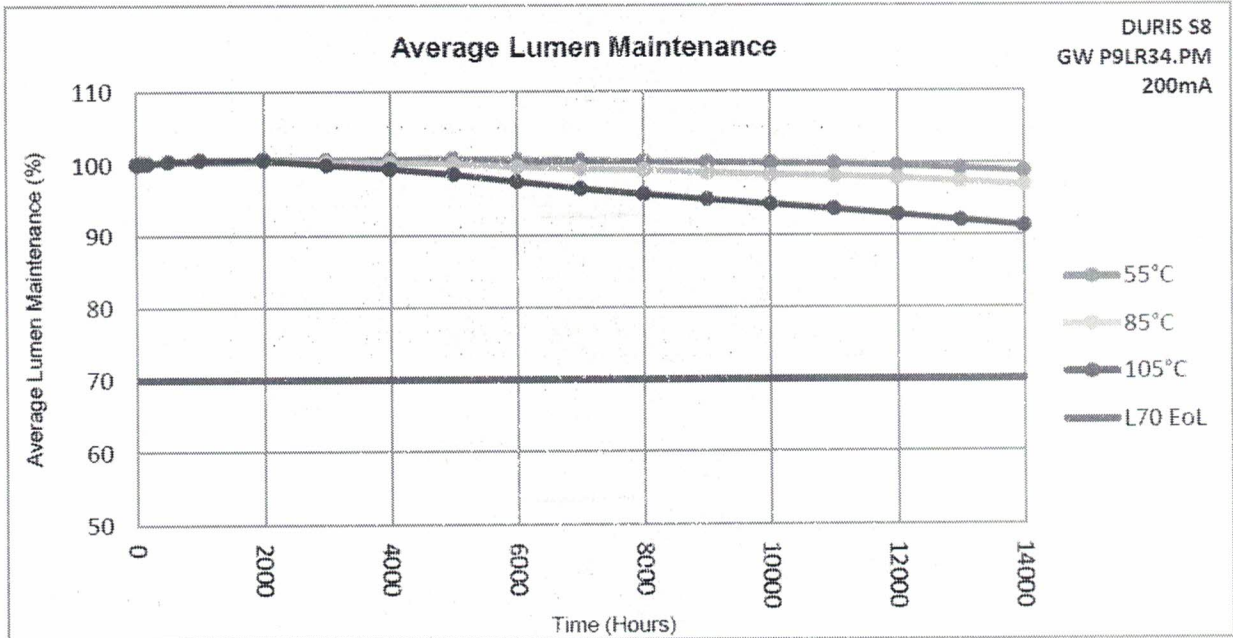








5.0 Charts:



## 6.0 Additional Information

### 6.1 Auxilliary Equipment

Lifestest thermal chamber:	Orb Optronix Thermal Platform - resistive heating, liquid cooling, no forced air flow
Lifestest current source:	Orb Optronix 12-Channel Driver
Photometric test current source:	Keithley 2425
Photometric test thermal control:	Orb Optronix TEC-100
Spectrometer:	Instrument Systems, CAS 140CT
Integrating Sphere:	Gamma Scientific 20"
Photometric reference standards:	LabSphere SCL-50

### 6.2 Additional Test Information

### 6.3 Photographs

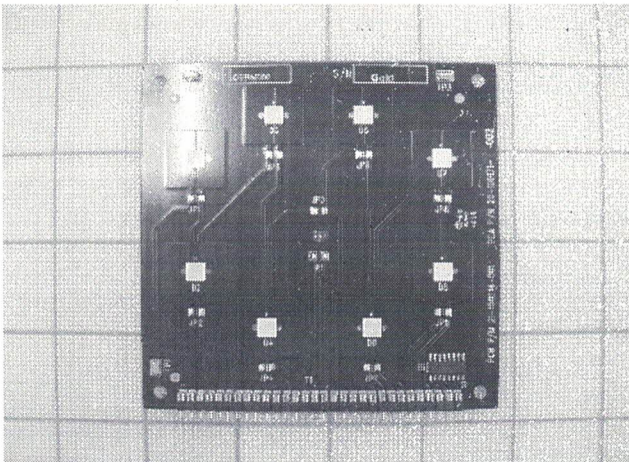


Fig. 1 DURIS S8 load board example.

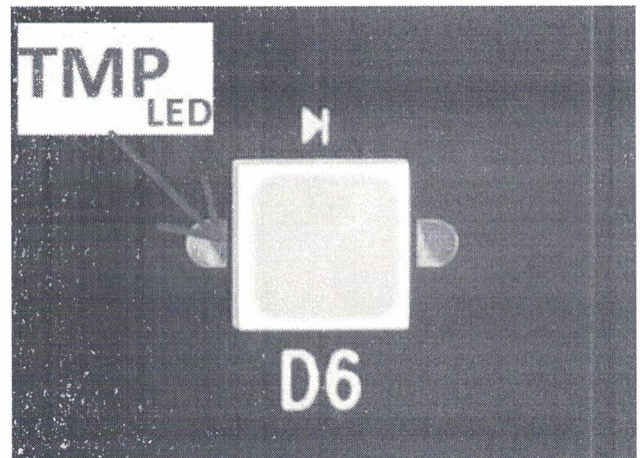


Fig. 2 DURIS S8 GW P9LR34.PM LED and temperature measurement point.

#### 6.4 Dimensional Drawing\*

\* all dimension in millimeters

This report alone may not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- END OF REPORT -

# Appendix A: Energy Star® LM-80 Application

## ENERGY STAR® LM-80 Cover Page

### Administrative Information

Tested subcomponent series	DURIS® S 8
Tested subcomponent model number	GW P9LR34.PM
Report issue date	27 <sup>th</sup> Aug 2020
Report revision date (if applicable)	Not Applicable
Testing start date	6 <sup>th</sup> Dec 2018
Testing completion date	27 <sup>th</sup> Aug 2020
DUT sampling method	According to ANSI/IES LM-80 Test Method

### DUT Identification

DUT manufacturer's name	OSRAM Opto Semiconductors (Malaysia) Sdn. Bhd.
DUT identification	GW P9LR34.PM
Description of DUT	LED Package

### DUT Characteristics

Total input power (W)	4.94
Average current density per LED die (mA/mm <sup>2</sup> )	351
Average power density per LED package (W/mm <sup>2</sup> )	0.20
Representative CRI (Ra) of the tested sample set	CRI70
Minimum die edge to die edge spacing (mm)	0.30

# Appendix B: Lumen Maintenance Projection (IES TM-21-11)

For Information Only!

## 1. General Information

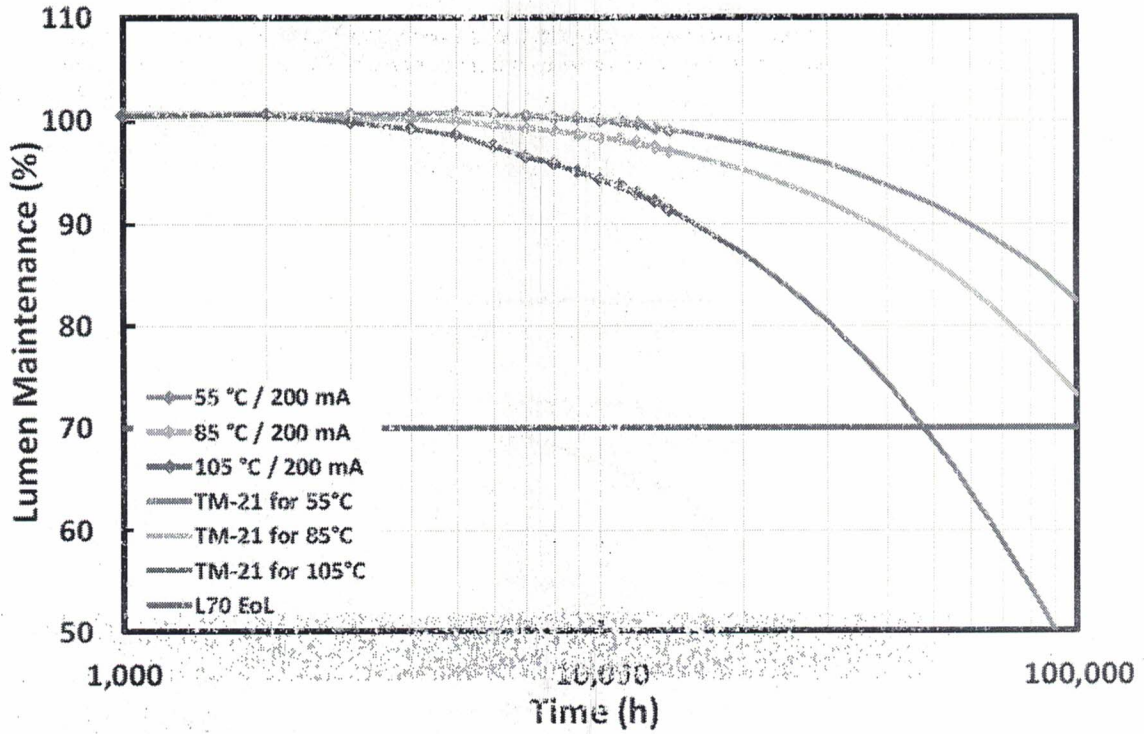
Description of LED light source tested	DURIS® S 8 GW P9LR34.PM
Sample size per temperature	24 devices @55°C / 18 devices @85°C and 105°C
LED drive current used in the test	200 mA
Test duration	14,000 hours
Test duration used for projection	7,000 hours to 14,000 hours

## 2. Projection Data

	I	II	Interpolation	III
Case temperature (solder point)	$T_s = 55^\circ\text{C}$	$T_s = 85^\circ\text{C}$	$T_s = 86^\circ\text{C}$	$T_s = 105^\circ\text{C}$
$\alpha$	2.133E-06	3.283E-06	3.439E-06	7.926E-06
B	1.021E+00	1.017E+00	1.019E+00	1.021E+00
Reported L70	>84,000 hours	>77,000 hours	>77,000 hours	47,632 hours
Reported L80	>84,000 hours	73,142 hours	70,388 hours	30,784 hours
Reported L90	59,276 hours	37,265 hours	36,137 hours	15,923 hours

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### 3. Graphic chart



## Appendix C: Additional Models Covered By Testing

The 28 September 2017 *ENERGY STAR® Requirements for the Use of LM-80 Data* defines conditions for which a LM-80 report is applied to cover models that have not been directly tested.

The test results in this report applies to the following list of models:

- DURIS® S 8 GW P9LR34.PM with CCT 2200 K – 6500 K up to 200mA
- DURIS® S 8 GW P9LR35.PM with CCT 2200 K – 6500 K up to 800mA
- DURIS® S 8 GW P9LR34.PM Gen5 with CCT 3000 K – 6500 K up to 200mA
- DURIS® S 8 GW P9LR35.PM Gen5 with CCT 3000 K – 6500 K up to 800mA

*Note: The devices are stressed and tested at average current density per LED die of 351mA/mm<sup>2</sup>. This report can be referenced when the operating current density in application is lower than the specified current of the respective devices as stated above.*

## Disclaimer

Please carefully read the below terms and conditions before using the Information.  
If you do not agree with any of these terms and conditions, do not use the Information.

The Information contained in this document does not constitute an independent warranty. The committed behavior is described in the Product data sheet.

### Further explanations:

**Data:** The Data used in this Document consider the reliability test results under the mentioned driving conditions only. For Product information on the maximum operating conditions please refer to the Product data sheet or contact your local sales partner.

**Conditions:** The conditions for the generation of the data are as follows:

1. The Data and curves shown in this Document are based on experiments carried out under laboratory conditions on a random sample size of LED with readouts at discrete readout times (where applicable). Thus, the Data above represent a limited number of production lots only and may differ between different assembly lots over time (including chip or package changes). Thus, the behavior of the LED in the final application may differ from the Data. The behavior of the LED at conditions or readout times deviating from those stated above may not be deduced from the Data.
2. For long term operation additional failure modes of the chip or package can occur which are not shown in this Document.
3. Possible differences in the thermal management of OSRAM OS and customer's setup may lead to a different aging behavior.
4. The lifetime projection data presented in this Document has been evaluated in accordance with the lifetime extrapolation method described and defined in IES TM-21-11. The lifetime projection is based on the Data shown in this Document. The Data had been collected and assembled according to IES LM-80-15.



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