DUREL CORPORATION

AN AFFILIATE OF 3M AND ROGERS CORPORATION

DUREL® 3 HS1-414 Very Long Life, Blue-Green Electroluminescent Lamp

Preliminary Product Data Sheet

In December 1991, Durel Corporation, a joint venture of 3M and Rogers Corporation, introduced the patented micro-encapsulation technology being used to produce Durel® 3 electroluminescent lamps. This technology is the foundation for a wide range of Durel products that offer superior application performance. Durel has also developed a family of IC inverters that give the user matched-system performance and the ability to purchase both lamps and inverters from a single source.

HS1-414

The HS1-414 lamp was developed for applications where very long life and superior environmental performance are important. This lamp emits a blue-green light that can be easily cascaded into a broadband white on-color.

Engineered for Pumping-Inductor Inverter Performance

Durel has engineered the HS1-414 lamp for maximum brightness and efficiency when powered by the Durel brand or equivalent pumping-inductor style IC inverters.

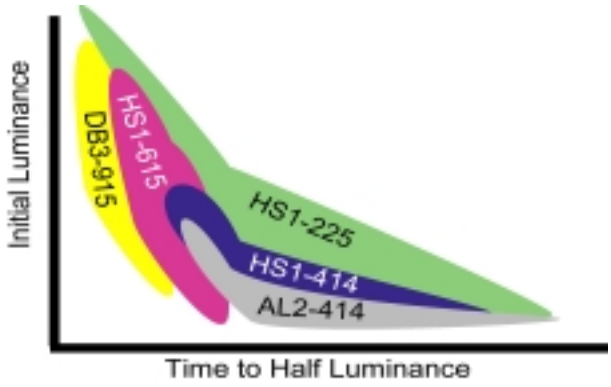
If you have any questions regarding this or other Durel products, please call Durel Customer Service at (480) 917-6000 or visit our website at:**http://www.durel.com.**

Typical Applications

- **LCD Backlighting**
- **Keyswitch Backlighting**
- **Cellular Phones**
- **Personal Digital Assistants**
- **Home Electronics**

Features

- **Engineered for Matched Lamp to Inverter Performance**
- **Environmentally Robust**
- **Very Long Life**
- **Blue-Green Lit Color**
- **Uniform Appearance**



This chart illustrates domains of initial luminance and time-to-half-luminance that can be achieved by using Durel lamp products at various drive conditions. Please refer to individual product data sheets for more information.

Durel® 3 HS1-414 Performance Data

Durel has engineered the HS1-414 lamp for maximum brightness and efficiency when powered by the Durel brand or equivalent pumping-inductor style IC inverters. Many factors affect the performance of a Durel 3 electroluminescent system. Specifications should be established using the actual lamp design and inverter configurations intended for that application. Power supply figures are provided below for reference only.

Maximum Ratings

Property	Units	Maximum	Typical
Supply Voltage	V_{rms}	150	40 - 100
Supply Frequency	Hz	3000	200 - 500
Input Current	mA/in^2	2.0	0.2 - 1.0
	mA/cm^2	0.31	0.03 - 0.16
Operating Temperature Range	ºC	-25 to 70	0 to 40
Storage Temperature Range	ºC	-40 to 85	0 to 50
Thermal Shock Resistance	ºC	-30 to 75 10 cycles	N/A

Performance Characteristics

Parameter	Units	**Inverter Brightness, fL, Typical***	Power Supply 80Vrms/200Hz Typical**	Power Supply 80Vrms/400Hz Typical**
Brightness	fL	**5.8**	4.5	7.5
	cd/m^2	**20**	15	25
Current Density	mA/in^2		0.17	0.6
	mA/ cm^2		0.05	0.09
Chromaticity Coordinates	X		0.17	0.17
	Y		0.41	0.36
Time to Half Luminance at Ambient	Hours		6000	3500
at 50C, 90%RH	Hours		1000	550
at 65C, 95%RH	Hours		400	275
at 70C, oven	Hours		800	400

** Using Durel D358 inverter powered at 3VDC, lamp size 2in².*

***All power supply values shown are typical of Standard Test Lamps tested under laboratory conditions.*

ISO 9001 Certified
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