UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

July 25, 2008

Mr. Brandon Yuan
Espen Technology
7621 Somerset Blvd.
Paramount, CA 90723

Dear Mr. Yuan:

EPA has reviewed the Testing Documentation for the following GU24 based integrated lamp and determined that it meets the Version 4.1 Residential Light Fixture (RLF) specifications indicated below. This Letter of Approval may be provided to other manufacturers interested in qualifying a fixture with this GU24 based integrated lamp for ENERGY STAR. Those manufacturers may, in turn, submit a copy of this Letter in lieu of lab testing reports for the given performance characteristics. Please note that this Letter of Approval only covers the performance requirements in the table below.

Components:	Ballast(s)	Manufacturer	Espen	Model # VE26SGUX27
	Lamp(s)	Manufacturer	Espen	Model # VE26SGUX27

# of Lamps:	1	Indiv. Listed Lamp Wattage:	26	Lamp Type:	CFL	GU24 Lamp Type:	B	Lamp Size:	T3	Ballast Type:	Electronic

Testing Orientation*	**Base Up** ■	**Base Down** ☐	**50% Up/50% Down** ☐	**Horizontal Operation** ☐
Performance Characteristic	**Test Result**			**Meets ENERGY STAR Specification? (Yes/No)**
Combined Lamp & Ballast Requirements:				
System Efficacy*	1759.6	Total Lumen Output		Yes
	24.9	Input Power (watts)		Yes
	70.4	Lumens Per Watt		Yes
Lamp Requirements:				
Lamp Life*	10,000	Average Rated Hours		Yes
1000 Hour Lumen Maintenance*	91.83	% of initial lumens at 1000 hours rated lamp life		Yes
Lumen Maintenance*	82.15	% of initial lumens at 40% rated lamp life (4,000 hour minimum)		Yes
Accelerated Cycling, Thermal, and Voltage (ACTV) stress test*	☐	Meets ACTV test requirements at 60˚C		Yes
	■	Meets ACTV test requirements at 80˚C		
Color Rendering Index*	81.41	CRI		Yes
Lamp Correlated Color Temp*	2700	Target CCT (degrees Kelvin)		Yes
	100	% of samples fall within 7-step Mac Adam ellipse		
Lamp/Lampholder Compatibility	GU24	ANSI-IEC Designated **Lamp Base Type** or **GU24**		Yes
	NA	ANSI-IEC Standardized **Lamp**		Yes
	____ OR N/A	ANSI-IEC **Lamp** Standard Data Sheet Number		Yes

* All performance characteristics marked with an asterisk (*) must have been tested with the same test orientation.

Testing Orientation*	Base Up ■	Base Down ☐	50% Up/50% Down ☐	Horizontal Operation ☐
Performance Characteristic	**Test Result**			**Meets ENERGY STAR Specification? (Yes/No)**
Lamp Labeling Requirement	☒	Lamp labeling requirement is met		Yes
	☒	Mercury labeling requirement is met (for integrated GU24 based lamps)		
Ballast/Ballast Circuitry Requirements:				
Lamp Start Time*	342	Milliseconds		Yes
Run-up Time*	38	Milliseconds		Yes
Power Factor	0.52			Yes
Lamp Current Crest Factor	1.38			Yes
Maximum Recommended Ballast Case Temperature During Normal Operation Inside a Fixture	90	Degrees Celsius		Yes
Electromagnetic and Radio Frequency Interference	☒	Ballast meets FCC requirements for consumer use		Yes
Ballast Frequency	49.2	kHz		Yes
Transient Protection	☒	Ballast meets transient protection requirements		Yes
End of Life Protection (Only required for ballasts with lamps sized T5 & smaller)	Yes	Testing requirements are met		Yes
	1	Maximum number of lamps shut down when lamp end of life occurs		
Dimming	☐	3-Way Switching		Yes
	☐	Continuous Dimming		
Safety – Ballasts, Integrated Lamps, and "Non Edison base Fluorescent Adapters"	Yes	Listed for Safety		RLF or ceiling fan partner using this form in lieu of testing documentation must submit appropriate safety report for portable or hardwired fixtures.
Integrated Lamp Warranty	Yes	Lamp warranty included that covers a minimum of 2 years from the date of purchase based on no less than 4 hours per day of use		Yes
GU24 Base	This platform **does** use the GU24 Base			Yes
GU24 Base with Self-Ballasted Pin-Based Lamp	This platform **does** use a self-ballasted GU24 based lamps			Yes

The qualified GU24 based integrated lamp listed on this letter must be labeled with the ENERGY STAR as specified in the Program Requirements for Residential Light Fixtures, table 3. Additionally, this letter may be promoted as an acceptable alternative to providing test reports with Residential Light Fixture submittals for ENERGY STAR qualification.

Any RLF or ceiling fan partner submitting this Letter of Approval in lieu of laboratory testing reports is still responsible for completing and signing a Qualified Product Information (QPI) form for the applicable lamp/ballast combination, and submitting any required test data not covered by this Letter.

Please direct questions about this letter to RLF@icfi.com. Thank you for your continued support.

Sincerely,

Alex Baker, Lighting Program Manager
ENERGY STAR for Residential Light Fixtures