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

OFFICE OF
AIR AND RADIATION

5/10/06

Isabella Chen
Shanghai Chuanshi Technical Co., LTD
The East of Zhi Xin Stop, San Lu Rd.
Chenhang Pudong Minhang District
Shanghai, China 201114

Dear Isabella:

EPA has reviewed the Testing Documentation submitted by Shanghai Chuanshi for the following lamp/ballast combination, and determined that it meets the Version 4.0 Residential Light Fixture (RLF) specifications indicated below. Shanghai Chuanshi may provide this Letter of Qualification to other manufacturers interested in qualifying the same lamp/ballast combination 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 Qualification only covers the performance requirements in the table below.

Components:	Ballast(s)	Manufacturer	Shanghai Chuanshi	Model # TLE22
	Lamp(s)	Manufacturer	Shanghai Chuanshi	Model # 11170

# of Lamps: 1	Indiv. Listed Lamp Wattage: 22	Lamp Type: CR	Lamp Size: T9	Ballast Type: Electronic

Performance Characteristic	Test Result		Meets ENERGY STAR Specification? (Yes/No)
Combined Lamp & Ballast Requirements:			
System Efficacy	1566	Total Lumen Output	Yes
	21.9	Input Power (watts)	Yes
	71.5	Lumens Per Watt	Yes
Lamp Requirements:			
Lamp Life	10,000	Average Rated Hours	Yes
Lumen Maintenance	81.19	% of initial lumens at 40% rated lamp life (4,000 hour minimum)	Yes
Color Rendering Index	81.4	CRI	Yes
Lamp Correlated Color Temp.	3500	Target CCT (degrees Kelvin)	Yes
	100	% of samples fall within 7-step Mac Adam ellipse	
Lamp/Lampholder Compatibility	G10q	ANSI-IEC Designated **Lamp Base Type**	Yes
	Yes OR No	ANSI-IEC Standardized **Lamp**	Yes
	4031-1	ANSI-IEC **Lamp** Standard Data Sheet Number	
Lamp Labeling Requirement	☒	Lamp labeling requirement is met	Yes

Ballast Requirements:			
Lamp Start Time	230	Milliseconds	Yes
Power Factor	0.532		Yes
Lamp Current Crest Factor	1.401		Yes
Maximum Recommended Ballast Case Temperature During Normal Operation Inside a Fixture	75	Degrees Celsius	Yes
Electromagnetic and Radio Frequency Interference	☒	Ballast meets FCC requirements for consumer use	Yes
Ballast Frequency	23.76	kHz	Yes
Transient Protection	☒	Ballast meets transient protection requirements	Yes
End of Life Protection (Only required for ballasts with lamps sized T5 & smaller)	Yes OR N/A	Testing requirements are met	Yes
	N/A	Maximum number of lamps shut down when lamp end of life occurs	
Dimming	☐	3-Way Switching	Yes
	☐	Continuous Dimming	
Safety – Ballasts and "Non Edison base Fluorescent Adapters"	Yes OR N/A	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.
Line Voltage Socket (LVS) Standard Design	This platform **does not** use the twist-and-lock LVS standard Design		Yes
Line Voltage Socket (LVS) Standard Design with Self-Ballasted Pin-Based Lamp	This platform **does not** ship with self-ballasted pin-based lamps (i.e., integrated lamp and ballast) that use the twist-and-lock LVS standard design		Yes

As a reminder, the approved lamp/ballast combination does not receive the ENERGY STAR label and can not be promoted as an ENERGY STAR approved product and can not carry the ENERGY STAR logo. Rather, you may promote this approved platform as an acceptable alternate to providing test reports with Residential Light Fixture submittals for ENERGY STAR qualification.

Any RLF or ceiling fan partner submitting this Letter of Qualification 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 contact Evan Haines at (703) 218-2535, or myself at (202) 343-9397 with any questions. Thank you for your continued support.

Sincerely,

David Shiller, Product Manager
ENERGY STAR for Residential Light Fixtures