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

**OFFICE OF**
**AIR AND RADIATION**

October 21, 2006

Ms. Daisy Hu
Tospo Electronics Co, LTD.
Zhejiang Hengdian Imp. & Exp. Co., Ltd.
Hang Zhou, Zhejiang 310007, China

Dear Daisy:

EPA has reviewed the Testing Documentation submitted by Tospo Electronics Co, LTD. for the following lamp/ballast combination, and determined that it meets the Version 4.0 Residential Light Fixture (RLF) specifications indicated below. Tospo Electronics Co, LTD. 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 | Tospo Elec. Co. | Model # | TP120-2/13RS UPL |
| | Lamp(s) | Manufacturer | Philips | Model # | CFQ13W/G24q/835 |

| | | | | |
|---|---|---|---|---|
| # of Lamps: 2 | Indiv. Listed Lamp Wattage: 13 | Lamp Type: CFL | Lamp Size: T4 | Ballast Type: Electronic |

| Performance Characteristic | Test Result | | Meets ENERGY STAR Specification? (Yes/No) |
|---|---|---|---|
| **Combined Lamp & Ballast Requirements:** | | | |
| System Efficacy | 1656.2 | Total Lumen Output | Yes |
| | 27.12 | Input Power (watts) | Yes |
| | 61.13 | Lumens Per Watt | Yes |
| **Lamp Requirements:** | | | |
| Lamp Life | 12000 | Average Rated Hours | Yes |
| Lumen Maintenance | 85 | % of initial lumens at 40% rated lamp life (4,000 hour minimum) | Yes |
| Color Rendering Index | 80.94 | CRI | Yes |
| Lamp Correlated Color Temp. | 3500 | Target CCT (degrees Kelvin) | Yes |
| | 90 | % of samples fall within 7-step Mac Adam ellipse | |
| Lamp/Lampholder Compatibility | G24q-1 | ANSI-IEC Designated **Lamp Base Type** | Yes |
| | Yes OR No | ANSI-IEC Standardized **Lamp** | Yes |
| | 2513-2 | ANSI-IEC **Lamp** Standard Data Sheet Number | |
| Lamp Labeling Requirement | ☒ | Lamp labeling requirement is met | Yes |

| **Ballast Requirements:** | | | |
|---|---|---|---|
| Lamp Start Time | 195 | Milliseconds | Yes |
| Power Factor | 0.579 | | Yes |
| Lamp Current Crest Factor | 1.64 | | 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 | 47.17 | 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 |
| | 1 OR 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 OR 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 OR 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) 343-9408 with any questions. Thank you for your continued support.

Sincerely,

Peter Banwell, Product Manager
ENERGY STAR for Residential Light Fixtures