

Case #A0865-0007

Case outline

This is one of a unique cases regarding energy saving by using [NOVETE](#) LED luminaire in substitution of the traditional downlights for a restaurant chain in Singapore. Customers of the restaurant chain are mostly executives and middle-income level. .

The goal of this project is to develop energy efficient restaurant luminaries with luminous performance compatible to the traditional one. The economic objective is to reduce electrical power by 50~75% with a simple payback of 2.5 to 3 years basing on the following operation conditions:

- Total shop area per outlet: approximately 200 m²;
- Ceiling height: 2.8 meters;
- Existing luminaries: 125 x 125mm recessed grid-light using 50W halogen lamp as light source;
- Average luminous flux on floor level: maintain an average of 230 lux or thereabout;
- Lighting density: approximately 1 square meter per lamp within dining area;
- Average room temperature: 25°C;
- Business operation: 16 hours daily include Sunday and Public holiday

Task performance data

Jobs accomplished



Dinning Area Lightings: [ELITA R080S1-03LP3](#) 9 watts recessed grid light were installed as general lighting within the dining area to substitute 75 units of 50 watts halogen recessed grid light;



Wall Accent Lightings: [ELITA 720-3WP4](#) 9 watts LED track light were installed as accent lighting to highlight wall posters and pictures to substitute 40 units of 50 watts halogen track light;



Service Counter Lightings: [ELITA R080S1-03LP3](#) 9 watts circular recessed downlight were installed as general lighting for cashier counter to substitute 12 units of 3.5 inches 50 watts halogen circular recessed downlight;

Power rating

<u>Location</u>	<u>LED luminaire</u>	<u>Traditional luminaire</u>
• Dinning area	0.68 kW per hour	5.0 kW per hour
• Wall accent lightings	0.48 kW per hour	2.7 kW per hour
• Cashier's counter	0.11 kW per hour	0.8 kW per hour
<u>Total power consumption</u>	1.27 kW per hour	8.5 kW per hour
<u>System power saving compare to traditional lights</u>		86.50%

