

VARMATIC LIGHTMASTER – VOLTAGE OPTIMISATION FOR LIGHTS

CASE STUDY

THE RETAIL DISTRIBUTION WAREHOUSE



BACKGROUND

The Facilities Manager of a retail distribution warehouse contacted SDC Industries to enquire about energy efficiency equipment. Their electricity costs had increased by 35% per annum due to both an increase in electricity prices and a rise in the amount of usage of the lighting in the warehouse.

Our engineers advised the potential client that SDC Industries manufacture and install voltage optimisation equipment for lighting only. The device would be fitted to the lighting distribution board, and could make savings of up to 30% on their annual lighting costs.

LIGHTING SURVEY

An SDC Industries Sales Engineer visited the site to carry out a survey of the lighting at the warehouse. The warehouse is fitted with ballast lighting, which is in use 24 hours a day, 7 days a week, 52 weeks a year. We advised that a 3 Phase, 250KVA Varmatic LightMaster would be the preferable size to make optimum savings on this particular lighting load.

Load	3 Phase, 200KW
No. of Hours in Use	24 hrs/day, 7 days/week, 52 wks/year
Cost per KWh	7.8p + 0.456p CCL = 8.256p

PRIOR TO INSTALLATION OF THE VARMATIC LIGHTMASTER

No. of KWh used per Annum :

200KW x 24 Hrs/Day = 4,800
x 7 Days/Week = 33,600
x 52 Weeks/Year = 1,747,200

Annual Usage = 1,747,200KWh

COST PER ANNUM = 1,747,200KWh x 8.256p per KWh ÷ 100 = £144,248.33



AFTER INSTALLATION OF THE VARMATIC LIGHTMASTER (20% SAVING)

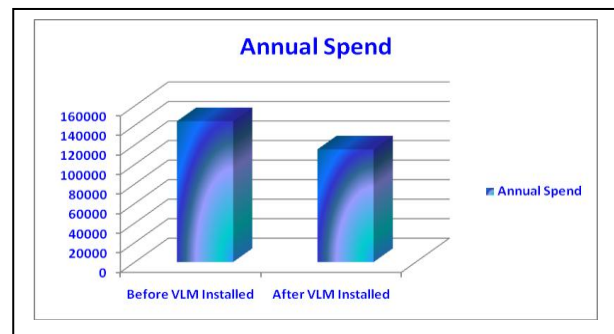
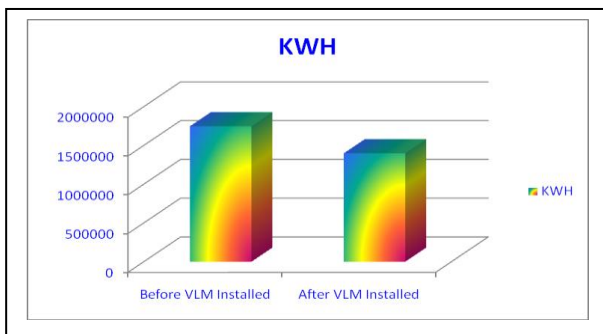
No. of KWh used per Annum :

200KW Load – 20%	=	160KW
160KW x 24 Hrs/Day	=	3,840
x 7 Days/Week	=	26,880
x 52 Weeks/Year	=	1,397,760

Annual Usage is = 1,397,760KWh

COST PER ANNUM = 1,397,760 x 8.256p ÷ 100 = £115,399.06

SAVING PER ANNUM (20%) : £144,248.33 - £115,399.06 = £28,849.27



PAYBACK

SUPPLY PRICE OF 250KVA VARMATIC LIGHTMASTER ÷ FINANCIAL SAVING

£11,800 ÷ £28,849.27

= 0.4 YEARS

ANNUAL KWH SAVINGS

Savings on mains electricity x 0.43

200 – 160KW (20%) = 40KWH

x 24 = 960KWH

x 7 = 6,720KWH

x 52 = 349,440KWH

ANNUAL CARBON/CO2 SAVINGS (KGS)

= 349,440 x 0.43

= 150,259KG CO2/ANNUM

÷ 3.67 = 40,943KG CARBON/ANNUM

ANNUAL CARBON/CO2 SAVINGS (TONNES)

= 150.259 TONNES CO2/ANNUM

= 40.943 TONNES CARBON/ANNUM

