

PRODUCT RANGE

Pump Car



Filter



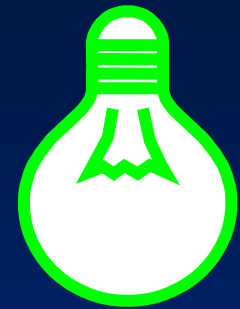
ELECTRONIC CONTROL UNIT



Injector



Tomorrow's Technology
Today



**SHARING OUR
ENCON
PROJECTS COMMON TO
INDUSTRIES AND BUILDINGS**





LIGHTING





MAXIMIZE USE OF NATURAL LIGHT

BEFORE : Tube lights are used to meet required **LUX** level

AFTER : Gas filled glass used for windows to maximize Natural light

SAVINGS : RS 10,400 / Yr
(10*10m)



MAXIMIZE USE OF DAY LIGHTING

DELPHI-TVS
Diesel Systems Limited



LIGHT PIPE



How it works

- **Light collecting dome** exposed to ambient light collects the light
- **Reflective pipe** conducts the light into interiors
- **Light diffuser** distributes light evenly throughout the space



LIGHT PIPE



LIGHT PIPE

OFFICE

DELPHI-TVS

Diesel Systems Limited



LIGHT PIPE



OFFICE

BENEFITS

Light Output of LightPipe™ (530mm Dia)	16,000 lumens
Luminous efficiency of Electrical light	60 lumens/watt
Wattage of electrical light for equivalent light output of 16000 lumens	267 watts
Electrical energy savings per annum	0.267KW X 12hrs/day X 360 days=1153.44 Kwhs
Cost Savings per annum (@Rs.5.00 per kwh)	Rs. 5767.00
<p>Pay back period of the System is 3 Years</p> <p>Savings on maintenance Cost, Bulbs replacement cost and increased life of luminarie.</p>	

INTANGIBLE BENEFITS

Light Pipe™ - Reduces Carbon foot print of buildings

- 530mm(21") dia Light Pipe™ – **875** Kgs Per annum.



LED LAMPS



LED lamps used for machine indication , and street lights



LED - Advantages.

- ✓ **99% SAVING**
- ✓ **NO MAINTENANCE**
- ✓ **LONG LIFE**
- ✓ **NO HEAT**





LIGHTING ENERGY SAVER FOR OFFICE LIGHTS



55 kva Coolite(Lighting energy saver is installed to reduce the power Consumption of lighting.

Investment –Rs 0.75Lakhs.

ANNUAL SAVINGS- RS 0.85LAKHS.

RENEWABLE ENERGY



Use of Renewable Energy



Installation of Solar heaters as a Preheater to Boiler, washing etc.

Total installed capacity = 4500 LPD. Investment - 5 Lakhs.

PAYBACK PERIOD – 24 MONTHS.



Use of Renewable Energy



Installation of Wind ventilators (Motor less fans) instead of motorized roof ventilators

Total No of Installation = 220 Nos

INVESTMENTS - 15 Lakhs



PAYBACK PERIOD – ONE YEAR



EFFECTIVE GENERATION OF ENERGY

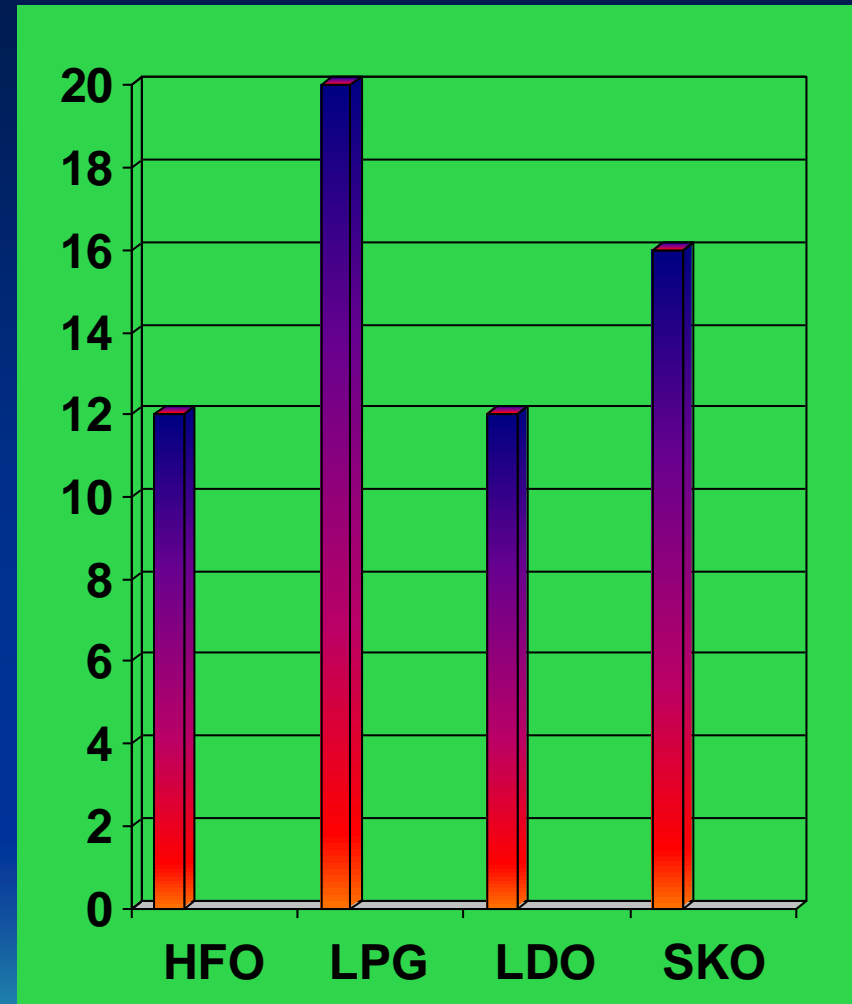
FUEL MANAGEMENT BY INSTALLATION OF MAGNETIC RESONATORS



Optimization

% INCREASE IN PRICE YOY

- Resource optimization based on predictable slew rates
- Input fuel cost has high slew rate and un-predictable
- For Eg. the Cost escalation of following fuels (Hydro carbon) y-o-y basis
- HFO- Increased by 12%
- LPG –Increased by 20%
- LDO –Increased by 12%
- SKO and NG increased by 16%



SPECIFICS OF TECHNOLOGY

- Convergence of:
 - Magnetic Resonance
 - Characteristics of Hydro-Carbon Fuel
 - Computational Fluid Dynamics
 - Combustion Engineering
 - Metallurgy
- To Improve Specific Area of Contact Between AIR & FUEL

Magnetic Resonators:



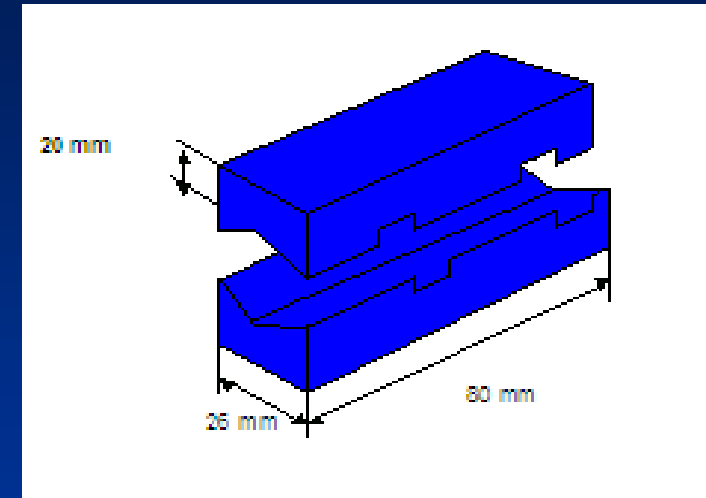
Installation:



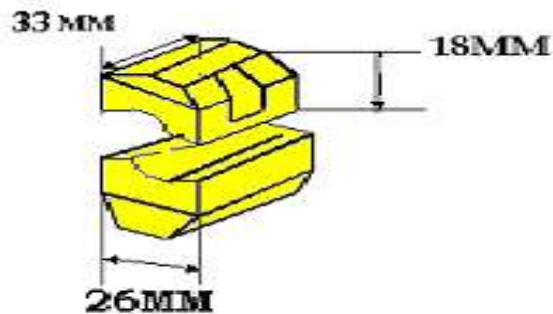
Technology Details

- Dimension of the material

Double Resonance Type



Magnetic Memory Type



Configuration of magnetic resonators

For 1.9MW D.G Set

- No of cylinders /Engine - **09**
- No of Magnetic resonators/ Cylinder - **02**
- Total No of Magnetic Resonators - **18**

For 1MW D.G Set

- No of cylinders /Engine - **08**
- No of Magnetic resonators/ Cylinder - **02**
- Total No of Magnetic Resonators - **16**

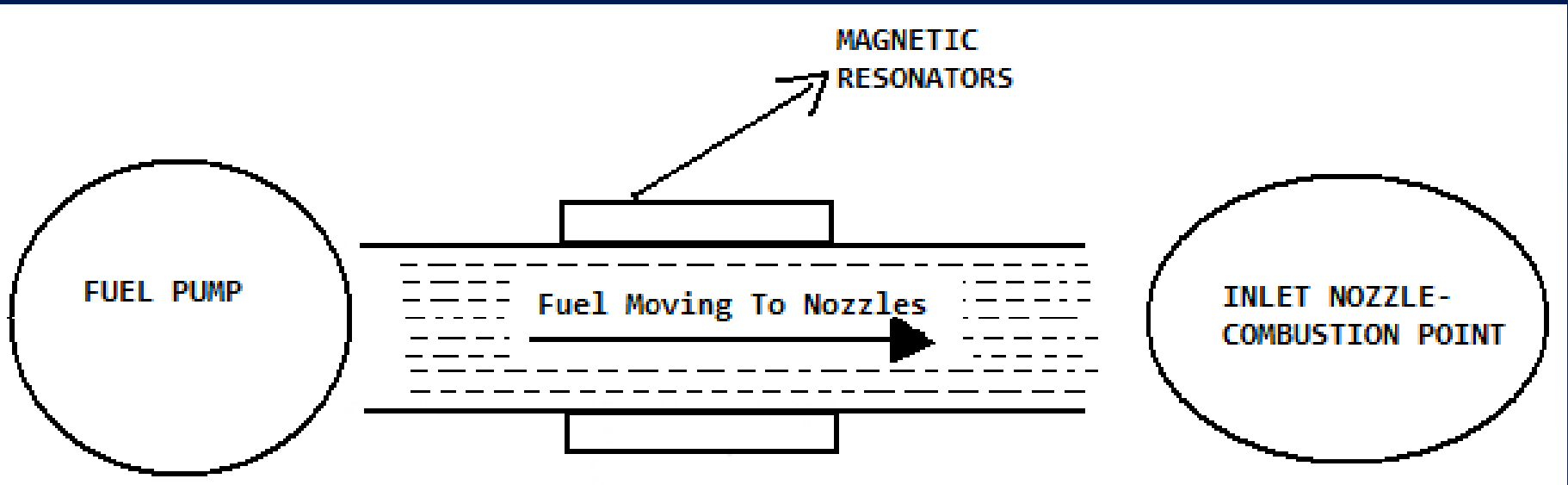


Working Principle

- Hydro carbons molecular cluster show dipole characteristics
- At Equilibrium, Net Dipole Moment = 0
- Under External Magnetic Field, Polarization of dipole moments takes place.
- Polarization Increases the area of contact between Air and Fuel.
- Correlation exists between the flow velocity rate in the fuel line and Magnetic material which is the basis for positioning and configuration of magnetic resonator using mass customization.

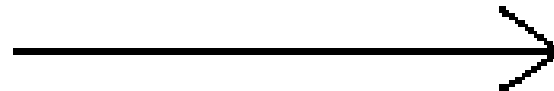


Working Principle Contd.,



*Highly Clustered Hydro
carbon molecules*

Passing through
Magnetic resonators



*Get POLARISED & increase in AREA
OF CONTACT between AIR & FUEL*

(Resulting in BETTER COMBUSTION)



Benefits of Installing Magnetic Resonators

- **Enhances combustion**
- **De carbonization of nozzles**
- **Reduction in emission**
- **Conserves hydrocarbons**



RESULTS



1.9 MW D.G SET

Pre Installation - 0.245277 Litres / Kwh

Post Installation - 0.240447 Litres / Kwh

Percentage of Fuel Savings - 1.97

INVESTMENT - 2.2 LAKHS

PAYBACK PERIOD - 3 MONTHS



1.0 MW D.G Set

Pre Installation - 0.268067 Litres / Kwh

Post Installation - 0.265076 Litres / Kwh

Percentage of Fuel Savings - 1.12

INVESTMENT - 1.8 LAKHS

PAYBACK PERIOD - 3 MONTHS



ENERGY CONSERVATION

in

AIR CONDITIONING



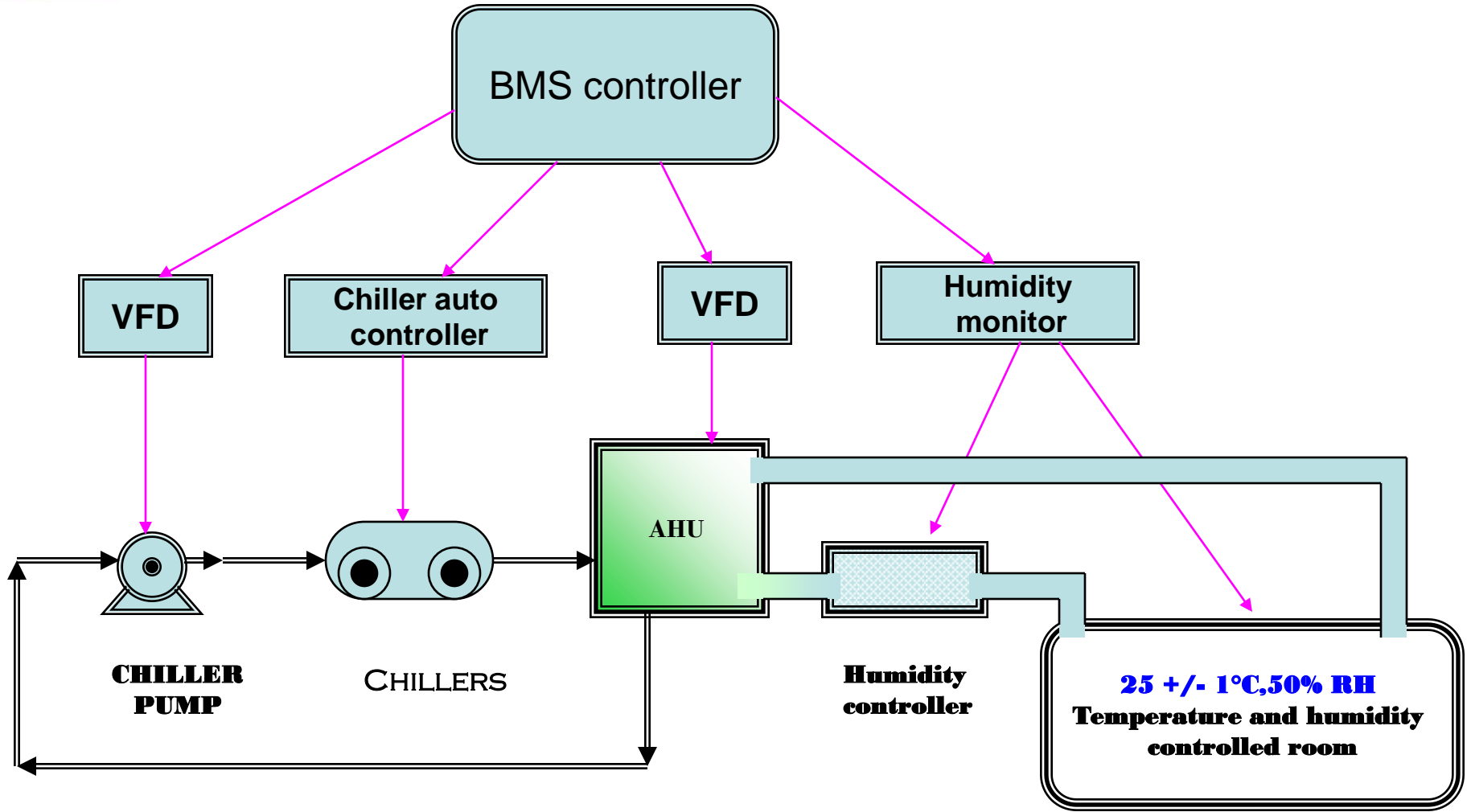
Air Conditioning

Use of Automatic Controls to avoid power wastage

- BMS for Factory and Buildings
- Programmable Timer for Office Air Conditioners
- Chillers instead of Split AC



BMS IN USE



CENTRALIZED CHILLERS WITH AHU

Replacement of Split A/C
(33 TR) production unit
with 10000 CFM AHU and
using VAM.



INVESTMENT = 5.9 LAKHS / ANNUM
PAYBACK PERIODS = 14 MONTHS



AUTO ON/ OFF CONTROL FOR LIGHTING AND AIR CONDITIONER

The air conditioner and lightings are controlled by Real Time Clock

Savings -1.6 Lakhs/ year (app)



TIMER FOR LIGHTING & A.C CONTROLS

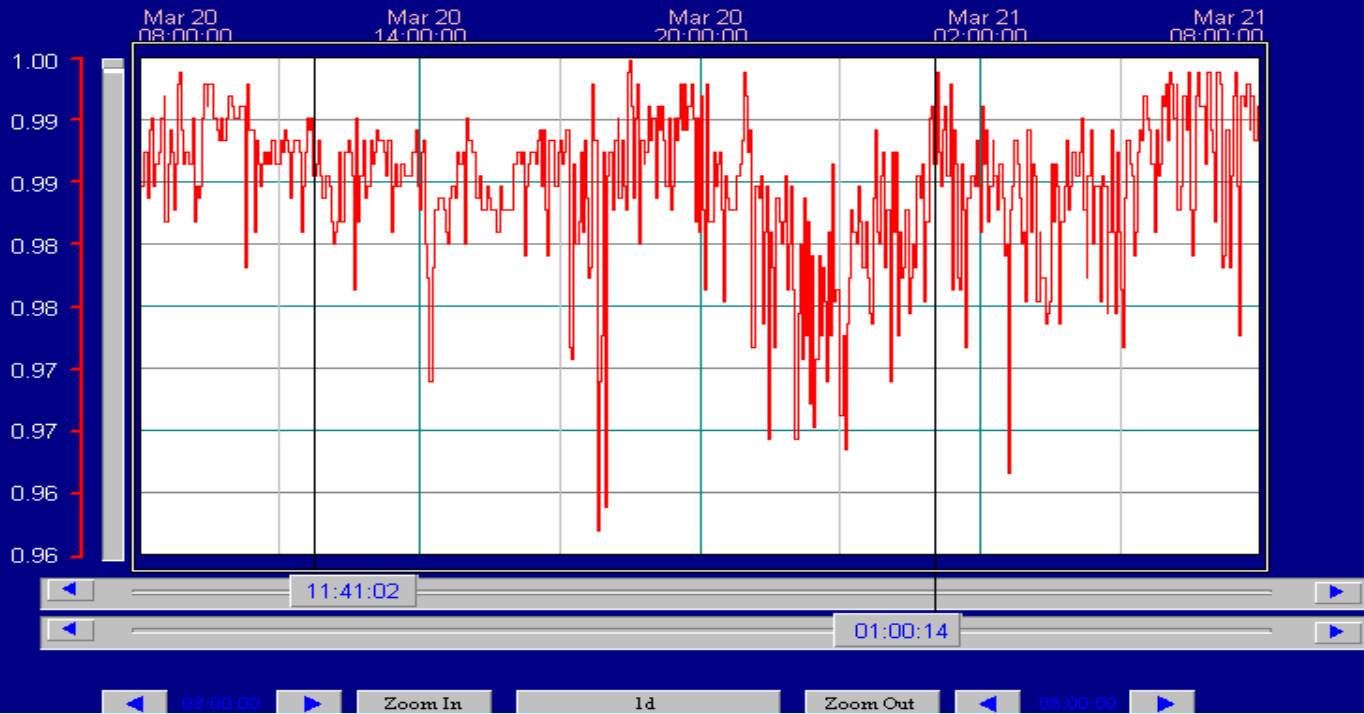


TOOLS USED FOR ENERGY MONITORING

Power Factor



HISTORICAL TRENDS



S1N1_PF	0.99	0.99
S1N1_KW	1716.02	1229.46
S1N1_KVA	1734.09	1240.88

Monthly Incentive for Power Factor >0.95 – Rs. 65,000/-

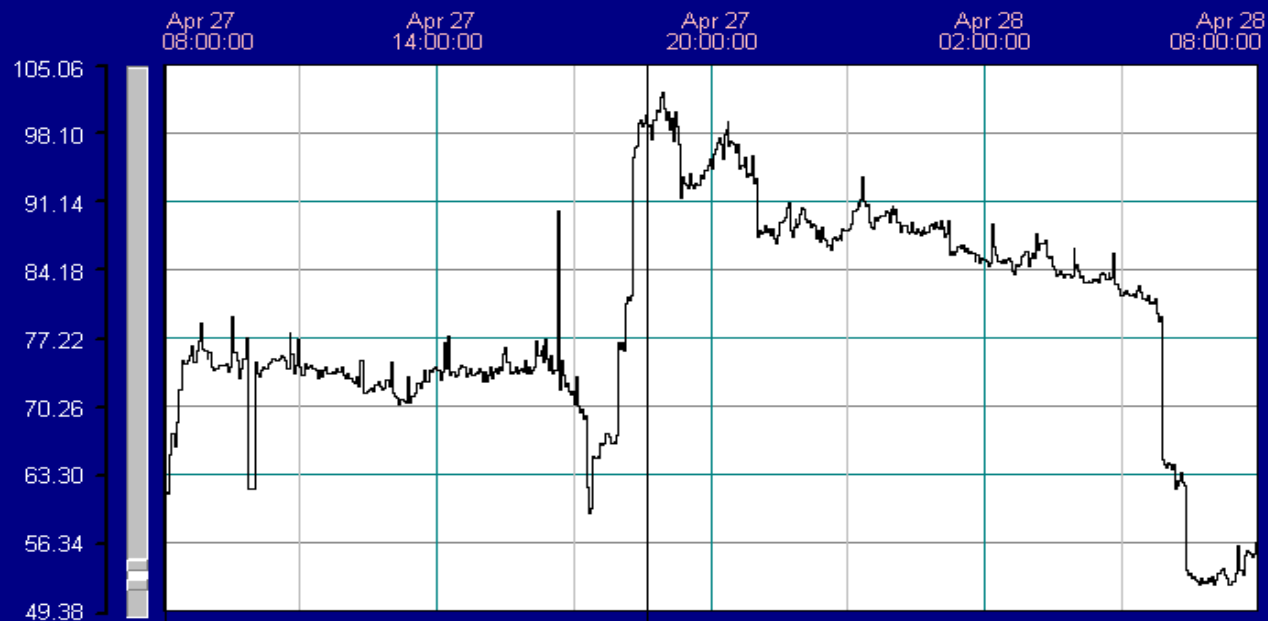
Maximum Demand - kW & kVA



Power factor – kW/kVA

Lighting - Demand

HISTORICAL TRENDS



s1n22_VLN 227.73 223.84
s1n22_kva 61.53 100.18

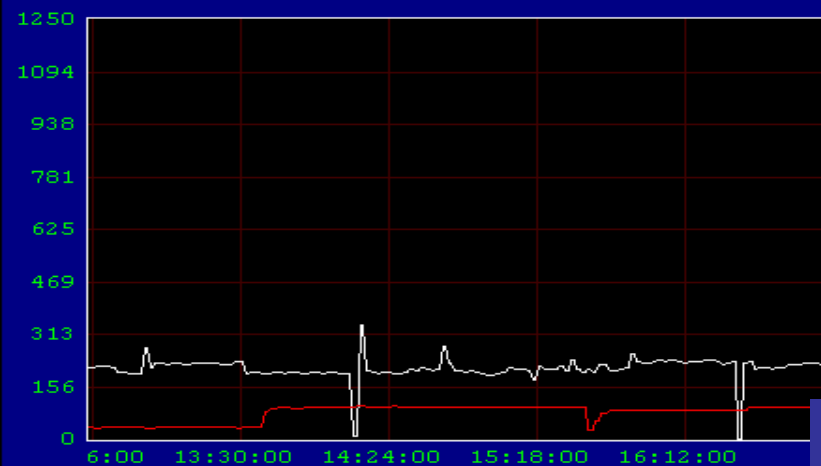
08:00:00 18:32:52

08:00:00 Zoom In 1d Zoom Out 08:00:00

4 hours 1 hour Minutes 30 minutes 10 minutes

ZOOM

A/C Plant Load Pattern

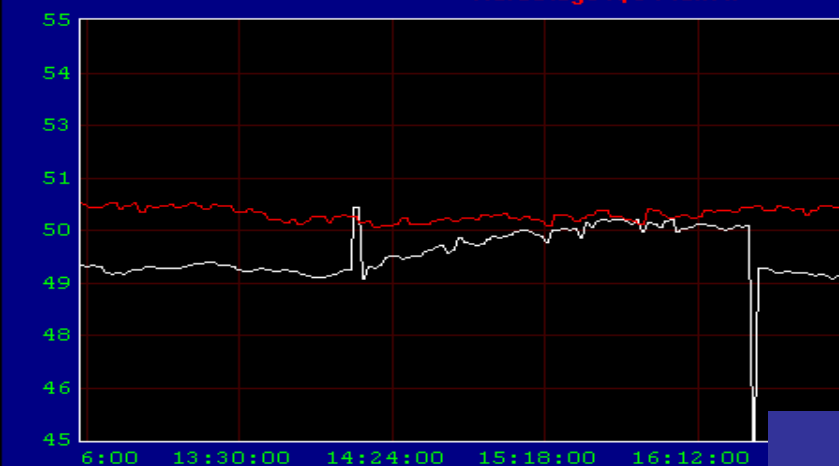


█ KVA 227.97
COMP -1
 █ KVA 94.70
HardStage A/C Plant-II



█ A 323.51
COMP -1
 █ A 131.41
HardStage A/C Plant-II

Trend Main



█ Hz 49.00
COMP -1
 █ Hz 50.55
HardStage A/C Plant-II



█ Power Factor 0.941
COMP -1
 █ Power Factor 0.941
HardStage A/C Plant-II

Compressor -1
HardStage A/C Plant-II

TOOLS USED FOR EQUIPMENT RELIABILITY

THERMOGRAPHY



INFRA RED THERMOGRAPHY STUDY FOR POWER CIRCUITS

TECH - CENTRE

GENERATOR

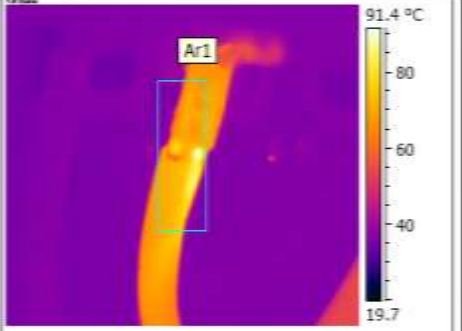
Thermogram Analysis Report

DELPHI - TVS
Diesel Systems Limited


Plant-Mannur

Area: S/S tech centre
Location: Tech centre chiller cable

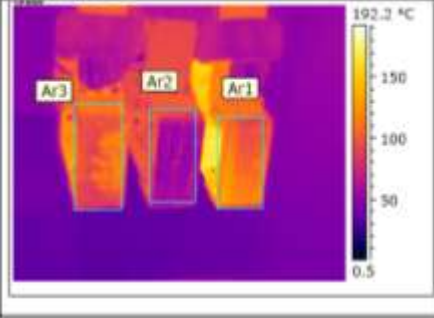
IR Image : 07




Visual Image



IR Image : 05



Visual Image



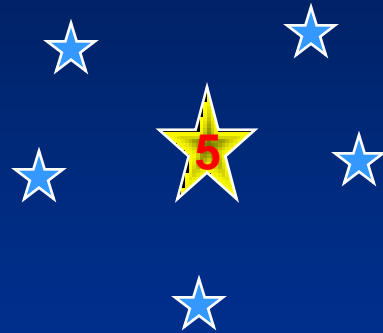
Analysis

Label	Value	Color	Status
Ar1: Max	171.6 °C	RED	*
Ar2: Max	103.3 °C	YELLOW	*
Ar3: Max	137.4 °C	BLUE	*

Date Of Creation: 6/24/2010
Time Of Creation: 8:46:46 AM

LAST BUT NOT LEAST WE PROCURE ONLY

WE ARE
PROCURING AND
USING ONLY



RATED
ELECTRICAL
APPLIANCES



THANK YOU



УОУ ХИАНТ