

7.1.2(B) LED lights

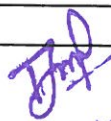
Replacement of energy-consuming lights with energy-saving LED bulbs in the University lowers CO2 emission; energy consumption, decreases maintenance costs and less wear on heating and cooling systems. LED lighting is an excellent & easy way to go green & save the environment.

Annual lighting power requirement met through LED bulbs (in KWH) required "17384".

Total LED's Intalled in Campus as on 2-6-2023-2111

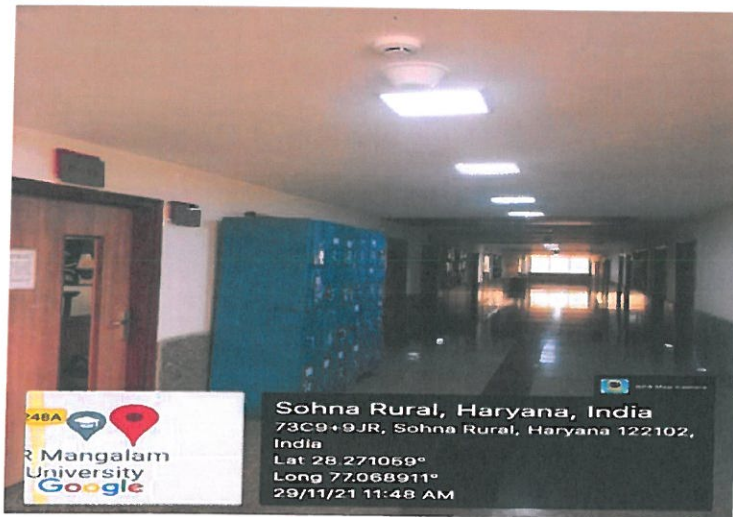
DETAILS OF LEDs FITMENT

A Block		
Location	Capacity In Watt	Total
Canteen	20 Watt	26
Library	15 Watt	36
Ground Floor (Admission area)	20 Watt	25
Wash room	18 Watt	26
Moot court	15 Watt	52
Class Rooms	20 Watt	186
Corridor 1 st Floor	20 Watt	24
B Block		
Class Rooms	20 Watt	111
C Block		
Basement	24 Watt	92
Basement	14 Watt	24
Basement	36 Watt	36
Class Rooms/Corridor	20 Watt	509
Wash room	24 Watt	44
Hostel		
Boys Gym	40 Watt	19
Ground Floor corridor	24 Watt	31
1 st Floor corridor	24 Watt	29
3 rd Floor Washrooms & Toilets	08 Watt	112
3 rd Floor Study Light	9 Watt	54
3 ^r Floor Washbasin	5 Watt	54
4 th Floor Washrooms & Toilets	08 Watt	112
4 th Floor Study Light	9 Watt	54
4 th Floor Washbasin	5 Watt	54
Girls Mess	20 Watt	35
Boys Mess	20 watt	26

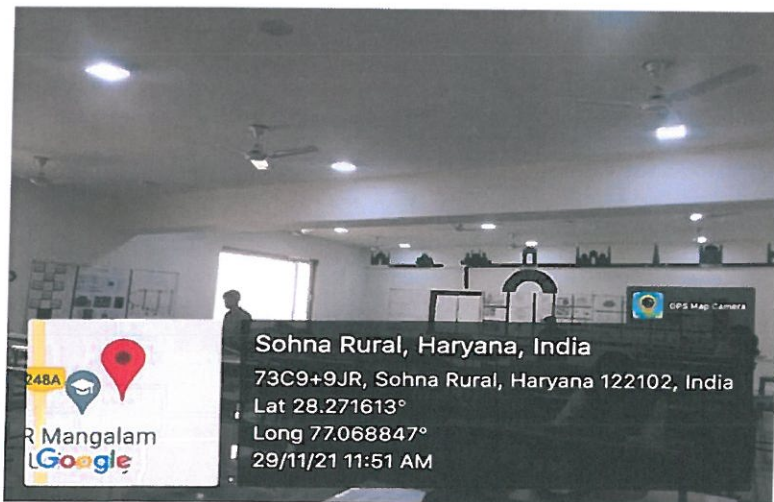
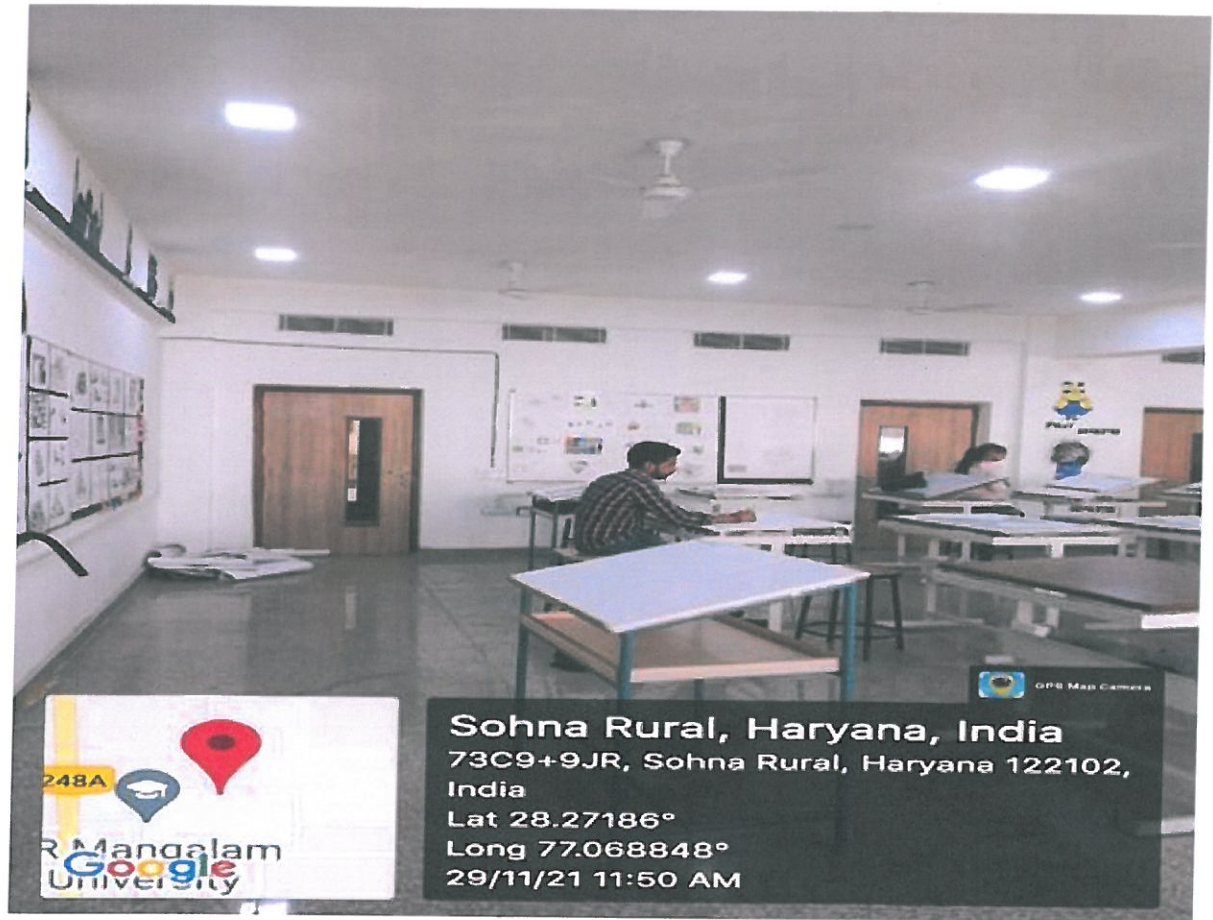

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

3 rd Floor inside Room (surface Light)	20 Watt	28
3 rd Floor Inside Room (Tube Light)	20 Watt	54
3 rd Floor Corridor	20 Watt	60
4 th Floor inside Room (surface Light)	20 Watt	28
4 th Floor Inside Room (Tube Light)	20 Watt	54
4 th Floor Corridor	20 Watt	60
Outer Area		
A Block Terrace	400 Watt	8
B Block Terrace	400 Watt	1
C Block Terrace	400 Watt	1
Hostel Terrace	200 Watt	8
Sports Club	250 Watt	36
DG Room Terrace	200 Watt	2

2111



J.M.
Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)



JMD
Registrar
K.A. Mangalam University
Sohna Road, Gurugram, (Haryana)

1986

S.No. 5219

1986

STORES CHALLAN

Date 2/2/2021

PROJECT / SITE NAME.....Sohna

MATERIAL REQD. BY.....

PERSON / DRIVER NAME.....Arvind

VEH. NO.....

CONTACT NO.....

CONTACT NO.....

S.NO.	Item description	U/M	QTY.	Remarks
1.	Total Plier	No	02	
2	Screw Driver	No	02	
3	M-Scal	No	01	
4	Leather Hand Gloves	PR	03	
5	Goggles white	PR	02	
6	do Black	PR	05	
7	Measuring Tape	NO	02	
8	Ring spanner 18X19	NO	01	
9	DE SPINNER 18X19	NO	01	
10	Hand Grinder DEXALT	NO	01	
11	PVC CUADING PIPE	PL	05	
12	Heating & Flament	NO	07	
13	PVC Tape	EX	01	
14	Health Faceof-with Pipe	ST	100	
15	House-keeping material (C.A. S. 100)	LOT	01	
✓ 16	Emergency light- LED Light 1 Small Street	NO	11	
17	do- Street 1-Unit	NO	20	
18	PVC-Solvent-Sumit- 42.5 ml	NO	01	
19	do	NO	01	
20	do	NO	01	

Handwritten notes and stamps on the right side of the table, including a 'SECURITY CHECK' stamp with date 2/2/21 and a signature 'Arvind'.

Handwritten note: 'Certificate' with a signature.

Stores Incharge

Signature of Stores Incharge

Received by

Signature of Driver/Person

Driver / Person sign.

Please find the above material & acknowledge the receipt Signed & send to H.O. within three days.

13.06.1986

Signature of Registrar

Registrar

K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

STORES CHALLAN

S.No. 2112

Date: 24/4/2019

7455 1455

PROJECT / SITE NAME Sohna

MATERIAL REQD. BY CONTACT NO.

PERSON / DRIVER NAME Avinod VEH. NO. CONTACT NO.

S.No.	Item Description	U/M	QTY.	Remarks
1.	LED Light 18 watt square	NO	149	Conced
2.	Voucher Red, yellow, pink, green	no	20,000	OK
3.	Photocopy paper A4	BY	02	OK
4.	Disposable glass	BY	02	OK
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> SECURITY CHECK Inward No. <u>993</u> Date <u>2/4/19</u> Sign <u>Avinod</u> </div>				
<p><u>1500 1455</u></p> <p><u>Received</u></p> <p><u>Person in charge</u></p> <p><u>Store-11</u></p> <p><u>4/4/19</u></p>				

Stores Incharge

Received by

Driver / Person Sign.

Please find the above material & acknowledge the receipt duly Signed & send to H.O. within three days.


 Registrar
 K.R. Mangalam University
 Sohna Road, Gurugram, (Haryana)

1449

STORES CHALLAN

S.No. 2076

Date 23-3-2019

PROJECT / SITE NAME Sohna

MATERIAL REQD. BY CONTACT NO.

PERSON / DRIVER NAME Avind VEH. NO. CONTACT NO.

S.No.	Item Description	U/M	QTY.	Remarks
1.	LED LIGHT 18 watt square 18 watt SF	NO	40	25/3
2	- d - .. S.	NO	80	
3	CPL 11 watt	NO	100	
<div data-bbox="446 884 798 1019" data-label="Text"> <p>SECURITY CHECK Inward No. 980 Date 24/03/19 Sign</p> </div> <div data-bbox="430 1086 821 1254" data-label="Text"> <p>1500 1449</p> </div>				

Stores Incharge

Received by

Driver / Person Sign.

Please find the above material & acknowledge the receipt duly Signed & send to H.O. within three days.

[Signature]

Registrar
K.R. Mangalam University
Sohna Road, Gurgaon, (Haryana)

TAX INVOICE

2205

2205

GSTIN : 07DACPB1726J1ZK
PAN NO. : DACPS1726J

sharviltradingcompany@gmail.com
Original For Recipient

SHARVIL TRADING COMPANY

HOUSE NO. A-3/4, PASCHIM VIHAR
NEW DELHI-110063
STATE : Delhi STATE CODE : 07

INVOICE NO. : STC/21-22/47
DETAILS OF RECEIVER (BILLED TO)
M/S K.R. MANGALAM UNIVERSITY
SOHNA ROAD, GURGAON-122103, HARYANA
STATE : Haryana
STATE CODE : 06
EWAYBILL: 721206577144

DATE : 25-08-2021
DETAILS OF CONSIGNEE (SHIPPED TO)
K.R. MANGALAM UNIVERSITY
SOHNA ROAD, GURGAON-122103, HARYANA
STATE : Haryana
STATE CODE : 06
ORDER NO. : KRMU/002

DESP. TO : GURGAON

SR. NO.	DESCRIPTION OF GOODS	HSN/SAC CODE	QTY.	UNIT	Rate	TOTAL
1	200WATT LED FLOOD LIGHT	9405	30.00	PIECE	2818.4523	84553.57
	Add IGST @ 12.00%		30.00			84553.57
						10146.43
TOTAL						94700.00

50000000000000000000
3080
Date 25/08/21

Rajeev
Rajni
Star-11. Chas
26/8

G 9405 12.00% On 84553.57 = IGST:12.00% 10146.43
Ninety Four Thousand Seven Hundred Only

TRANSPORT : BY ROAD
G.R.No. :
PAYMENT TERM : CREDIT/07 DAYS

BUC 2205

E. & C.E.
For SHARVIL TRADING COMPANY
SHENAYAL GOEL
Digitally signed by SHENAYAL GOEL
DN: cn=SHENAYAL GOEL, o=SHARVIL TRADING COMPANY, ou=SHARVIL TRADING COMPANY, email=shenayalgoel@gmail.com, c=IN
PROPRIETOR

WEIGHT INCLUDED.
DL01LT 2587

- Terms & Condition
1. Subject to Delhi Jurisdiction only.
 2. Goods one sold will not be taken back.
 3. Our responsibility ceases as soon as the goods delivered to the carriers.
 4. We are not responsible for breakage & pifferrage.

BANK DETAIL : HDFC BANK LTD. ROOP NAGAR, DELHI-110007
A/C: 50200058153966 IFSC: HDFC0000339

Jansid
26/8/21

JSG

Registrar
K.R. Mangalam University
Sohna Road, Gurgaon, (Haryana)



KENT

TAX INVOICE

Original for Buyer

KENT INDUSTRIES
 15, SSI Co-operative Industrial Area, GT Kamal Road, Delhi Delhi .
 State Code : 07 India-110033.
 Tel.No.:- 011-45730216
 GSTIN : 07AJZPG1532D1ZA PAN : AJZPG1532D

Billed to Address : K.R. Mangalam University
 Cust Code : 2401512
 Sohna Road, Gurgaon, Haryana India - 122103 . State Code: 06 Tel
 No:- 8860737446
 GSTIN : PAN :

Shipped to Address: K.R. Mangalam University
 Cust Code : 2401512
 Sohna Road, Gurgaon, Haryana India - 122103 . State Code: 06 Te
 No:- 8860737446
 GSTIN : PAN :

172

Invoice No. & Date : 7212006398/30.01.2021
 Order No. & Date : 1211912749/22.01.2021
 PO No. & Date : Buyer PO CG/KRMU/002 &
 Pick Slip No. : 20.01.2021

L.R. No. & Date : &
 Transporter :
 Vehicle No. :
 E-Way Bill No. :

Place of Supply :
 State : Haryana
 Marka / Nugs :
 Cases :

Sr. No.	Material Code	HSN Code	Material Description	Discount %	Qty	UOM	DLP Rate	Net Rate	Net Amount	CGST		IGST	
										%	Amount	%	Amount
1	74515CW	9405	Primus-PC-15W SQ CW-LED PC Slim Panel	56.67	140	NOS	540.00	233.98	32,757.48	0	0.00	12	3,930.
2	74415CW	9405	Primus-PC- LED Surface Panel 15W SQ CW	50.76	340	NOS	660.00	324.98	110,494.56	0	0.00	12	13,259.

H.O. STORE
 Date 30/1/2021 S.N.: 53811
 Sign :

to Page B 1,60,442

Remarks	480	Grand Total	143,252.04	0.00	17,190
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Amount In Words		Rupees One Lakh Sixty Thousand Four Hundred Forty Two Only					Net Value	143,252.0
HSN Code	Rate	Taxable Amt	CGST	SGST	IGST	Total Tax	APDC Discount	0.0
9405	12%	143,252.04			17,190.25	17,190.25	Taxable Value	143,252.0
Net Weight (KG)	: 0.000	Total	143,252.04		17,190.25	17,190.25	Total G.S.T	17,190.0

KENT INDUSTRIES
 RTGS / NEFT Ref. No.
 Bank Name - Kotak Mahindra Bank
 Bank AC - 6912041667
 IFSC Code - KKBK0000186

Net Value	143,252.0
APDC Discount	0.0
Taxable Value	143,252.0
Total G.S.T	17,190.0
TCS	0.0
Rounding off	0.0
Less-Freight	0.0
Invoice Amount	160,442.

Received Above Goods in Good Condition.
 Receiver's Signature with Date & Rubber Stamp

Terms & Conditions:
 1) Interest @18% is charged if the payment is not made within Stipulated Time
 2) Goods once sold will not be taken back
 3) Our Risk & Responsibility ceases as goods leave our premises
 4) All Disputes are subject to 'DELHI' Jurisdiction Only

Payment Terms - Net Due in 75 Days			
Cash Discount	within 30 days	within 45 days	within 60 days
Percentage	4 %	3 %	2 %
INR Value	5,730	4,298	2,865

For KENT INDUSTRIES

Regd. Office : Kent Industries Lakeshwari Industrial Area, Bhagwanpur, Roorkee Uttarakhand India-247661. CIN:L24240911992PLC128651

Registrar
 K.R. Mangalam University
 Sohna Road, Gurugram, (Haryana)

S.No. 5231

1990

STORES CHALLAN

1990

Date 25/02/2021

PROJECT / SITE NAME..... Sohna

MATERIAL REQD. BY..... CONTACT NO.....

PERSON / DRIVER NAME..... Avinash..... VEH. NO..... CONTACT NO.....

S.NO.	Item description	U/M	QTY.	Remarks
1.	Ultra violet Tube ✓	NO	12	
2	choke 18 watt ✓	NO	50	
3	LED Tube Light set-18 watt ✓	NO	84	
4	Ceiling Light 11 watt 1+1 ✓	NO	06	Samir
5	Dura Cell rct + AA	NO	100	
6	Photocopy paper	BX	02	

SECRETARY'S OFFICE
 Inward No. 2495
 Date 5/2/21

Handwritten signature

Returned
 8 tubes - 1m charge
 8/2

BOC-1990

Stores Incharge

Received by

Driver / Person sign

Please find the above material & acknowledge the receipt Signed & send to H.O. within three days.

[Handwritten Signature]

Registrar

K.R. Mangalam University
 Sohna Road, Gurgaon (Haryana)

TAX INVOICE

2207

2207

GSTIN : 07DACPS1726J1ZK
PAN NO. : DACPS1726J

sharviltradingcompany@gmail.com
Original For Recipient

SHARVIL TRADING COMPANY

HOUSE NO. A-3/4, PASCHIM VIHAR
NEW DELHI-110063

STATE : Delhi STATE CODE : 07

INVOICE NO. : STC/21-22/48
DETAILS OF RECEIVER (BILLED TO)
M/S K.R. MANGALAM UNIVERSITY
SOHNA ROAD, GURGAON-122103, HARYANA
STATE : Haryana
STATE CODE : 06

DATE : 26-08-2021
DETAILS OF CONSIGNEE (SHIPPED TO)
K.R. MANGALAM UNIVERSITY
SOHNA ROAD, GURGAON-122103, HARYANA
STATE : Haryana
STATE CODE : 06

EWAY BILL: 751206817841

ORDER NO. : KRMU/002

DESP. TO : GURGAON

SR. NO.	DESCRIPTION OF GOODS	HSN/SAC CODE	QTY.	UNIT	Rate	TOTAL
1	20W LED SURFACE LIGHT 8"X8"	9405	200.00	PIECE	410.7142	82142.84
	Add IGST @ 12.00%		200.00			82142.84 9857.14
	ROUNDING OFF(+)					91999.98 0.02
TOTAL						92000.00

STAMP: CHECK-KRMU
INVOICE NO 3087
Date 26/08/21 Sign. P. Prakash

Reland
Shenayal
27/8

Bot. 2207

G 9405 12.00% On 82142.84 - IGST:12.00% 9857.14
Ninety Two Thousand Only

TRANSPORT : BY ROAD
G.R.No. : PAPPU TRANSPORT
NO.OF CASES : 10
Ph - 8800697021 (Om PRAKASH Ji)

E. & O.E.
For SHARVIL TRADING COMPANY
SHENAYAL
GOEL
Digitally signed by SHEHAYAL GOEL
Date: 2021.08.26 00:16:32 +05'30'
Auth. Signatory

Terms & Condition
1. Subject to Delhi Jurisdiction only.
2. Goods one sold will not be taken back.
3. Our responsibility ceases as soon as the goods delivered to the carriers.
4. We are not responsible for breakage & pifferrage.

BANK DETAIL : HDFC BANK LTD. ROOF NAGAR, DELHI-110007
A/C: 50200058153966 IFSC: HDFC0000339

Jam Saal
item Recd
27/8

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

2630

Tax Invoice

(ORIGINAL FOR RECIPIENT)

DELHI ENTERPRISES 1815, G.F. Bhagirath Palace 011-23876756, 011-49901716 9899005584 GSTIN/UIN: 07ANPPM7740P1Z3 State Name : Delhi, Code : 07 Contact : 011-23876756 011-49901716, 9899005584 E-Mail : delhienterprises1@gmail.com		Invoice No. 5193	Dated 30-Apr-2022
Buyer K.R.Manglam University Sohna Road, Gurugram State Name : Haryana, Code : 06 Place of Supply : Haryana		Delivery Mode/Terms of Payment	Supplier's Ref. 5193
		Buyer's Order No.	Other Reference(s)
		Despatch Document No.	Delivery Note Date
		Despatched through	Destination
Terms of Delivery Ship to HO MEHRAULI			

2630

Sl No.	Description of Goods and Services	HSN/SAC	GST Rate	Quantity	Rate	per	Disc %	Amount
1	LED LIGHT 20 WATT COB PHILIPS	9405	12 %	8 Pcs.	1,900.00	Pcs.		15,200.00
2	Cartago 12%	9405	12 %					500.00
								15,700.00
Output IGST 12%								1,884.00
Total								₹ 17,584.00

SECURITY CHECK-KR.M.U.
Inward No. 4863
Date: 02/05/22 Sign: [Signature]

[Handwritten signatures and notes: P. [Signature], S. [Signature], 5/5]

H.O. STORE RECEIVED
Date: 03-04-22
[Signature]

Amount Chargeable (in words) **INR Seventeen Thousand Five Hundred Eighty Four Only** E. & O.E

HSN/SAC	Taxable Value	Integrated Tax Rate	Integrated Tax Amount	Total Tax Amount
9405	15,700.00	12%	1,884.00	1,884.00
Total	15,700.00		1,884.00	1,884.00

Tax Amount (in words) : **INR One Thousand Eight Hundred Eighty Four Only**

BOC 2630

Company's PAN : ANPPM7740P

Company's Bank Details
Bank Name : Axis Bank
A/c No. : 913020005811754
Branch & IFS Code : Geeta Colony & UTIB0001104

DELHI ENTERPRISES
1815, G.F. Bhagirath Palace
Gurugram, Haryana
GSTIN: 07ANPPM7740P1Z3

This is a Computer Generated Invoice

[Handwritten signature: Jansup]
21/5/22
[Handwritten signature]

GSTIN No.: 07AHXPM5487H1ZH
PAN No.: AHXPM5487H

TAX INVOICE **2450**

Tel.: (S) 999955611

D. K. ENTERPRISES

Invoice No. **3682**
3682

ELECTRICALS, PAINTS & HARDWARE
(WHOLESELLER & RETAIL SHOP)

889/B-7, WARD NO. 8, MEHRAULI, NEW DELHI - 110030

Dated **25-1-20**

Details of Receiver (Billed to)
Name **K.R. Mangalam University**
Address.....
State.....
State Code.....
Mobile No. & E-mail Id.....
GSTIN No.....

Details of Consignee (Shipped to)
Name **K.R.G. Sir**
Address.....
State **Uttar P.**
State Code.....
Mobile No. & E-mail Id.....
GSTIN No.....

S. No.	Description of Goods	HSN Code	Qty.	Unit	Rate (per Item)	Taxable Value Net	CGST		SGST		IGST	
							Rate	Amt.	Rate	Amt.	Rate	An
1	LED 7112A 20watt	9425	20	P	1786	3572						
<p>SECURITY STAMP Invoice No. 4476 Date 26/01/22 S. Chauhan</p> <p>Recd Received Chauhan 27/1</p> <p>Prabodh</p> <p>BT 2450</p>												

Freight												
Total						3572	6%	214	6%	214		
Total Invoice Value (in Figure)							4000					
Total Invoice Value (in Words)							Four thousand only					
Amount of Tax Subject to Reverse Charges						Yes/No						

For D. K. ENTERPRISE

Authorised Signatory

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

STORES CHALLAN

S.No. 6495

Date 9.16.22

PROJECT / SITE NAME Sohna 2719 2719

MATERIAL REQD. BY CONTACT NO.

PERSON / DRIVER NAME 31/10/22 VEH. NO. CONTACT NO.

S.No.	Item Description	U/M	QTY.	Remarks
1	Blade cutting 100mm		1000	
2	Pillody 20x20		200	
3	1-108 20x9 Point		180/189	
4	Reg-matt 320		350	
5	" " 120		5 ML	
6	Dhand Old B18		500	
7	PATI 1512Mala		50	
8	" " 8		24	
9	A P smart BULB 5		6	Grinded
10	" " " 3		6	
11	MINRAI oil		6	
12	Lead surface light 18 watt		12/18	
13	CUP glass		200	
14	A-4 Paper		10 Box	
15	Electrical Item with bill attached		4 Box	
16	sun cell AA			

SECURITY CHECK-KRISH
Inward No. 2052
Date 10/06/22 Sign. Ravi

Stores Incharge
Manish

Received by
[Signature]

Driver / Person sign.
[Signature] 2719

Please find the above material & acknowledge the receipt duly Signed & send to H.O. within three days.

[Signature]
Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)



Energy Conservation Methods

K R Mangalam University uses 3 star Split AC. For the sake of calculation of energy / power consumption of AC, we will take 3 STAR, **1.5 ton Split AC** as reference. But the method is well applicable for 1 Ton or other tonnage of Window / Split AC. The very first thing is to note down the details provided on the name plate of AC. Following parameters should be noted from the name plate:

- Cooling Capacity
- EER / ISEER
- Inverter AC / Non-Inverter AC

Let's first discuss each of these parameters in brief.

Cooling Capacity:

Cooling Capacity of AC is defined as the amount of heat energy removed from room. It is given in terms of BTU / hour. BTU stand for **British Thermal Unit** and it is defined as the amount of heat energy required to raise the temperature of 1 pound of water by 1 degree Fahrenheit. If you calculate this, you will find that

$$1 \text{ BTU} = 1055 \text{ Joule (Approx)}$$

For 1 Ton AC, the cooling capacity is 12000 BTU/hr. Since 1 BTU = 1055 Joule, therefore, cooling capacity of 1 Ton AC in terms of Watt will be
 $(12000 \times 1055) / 3600 = 3516 \text{ Joules / sec.}$
 = 3516 Watt

Similarly, if we consider 1.5 Ton AC, the cooling capacity is 18000 BTU/hr, which means 5275 Watt approx. Thus cooling capacity is fixed by the tonnage of AC.

Energy Efficiency Ratio (EER):

Energy Efficiency Ratio or EER is a parameter which determines the utilization of input power supply to cool the room. Obviously, every consumer should look for better utilization of input power supply as it will help to reduce the electricity consumption and hence bill.

EER of AC is a ratio of Cooling Capacity to the input power supply consumed. Different STAR rating of AC has different value of Energy Efficiency ratio.

$$\text{EER} = \text{Cooling Capacity} / \text{Input Power}$$

The unit of EER is thus Watt / Watt.

BEE (**Bureau of Energy Efficiency**) has set a standard to rate AC on the basis of EER. Refer the table below for relation between STAR rating and EER for Jan 1, 2014 to Dec 31, 2015.

EER (W/W)					
WINDOW AC			SPLIT AC		
Star Rating	Minimum	Maximum	Star Rating	Minimum	Maximum
1 Star ★	2.50	2.69	1 Star ★	2.70	2.89
2 Star ★★	2.70	2.89	2 Star ★★	2.90	3.09
3 Star ★★★	2.90	3.09	3 Star ★★★	3.10	3.29
4 Star ★★★★	3.10	3.29	4 Star ★★★★	3.30	3.49
5 Star ★★★★★	3.30	-	5 Star ★★★★★	3.50	-

Registrar
 K.R. Mangalam University
 Sahya Road, Gurugram, (122009)



From the above table it is clear that if EER lies in between 3.10 to 3.29, the AC will be given 4 STARS. But what does this information mean to a consumer?

The better the EER value, the lower will be the power consumption AC and hence lower will be impact on you pocket. So if you see two 4 STARS ACs, one having EER value of 3.15 and another having 3.25, then you should go for second AC as its EER value is better.

Indian Seasonal Energy Efficiency Ratio (ISEER):

ISEER stands for Indian Seasonal Energy Efficiency Ratio. It is defined as the ratio of total amount of heat energy removed from the indoor air in a year to the total amount of power consumed annually.

ISEER = Cooling Capacity / Annually Power Consumed

The concept of ISEER was launched in India in 24th August 2016. This concept is introduced as the ambient temperature throughout the year varies and hence the cooling capacity of AC also varies to maintain a fixed indoor air temperature. In **inverter AC**, the tonnage of AC varies with the heat load. This greatly helps in improving the energy efficiency. As the name suggest, it is seasonal energy efficiency ratio. The better the value of ISEER, the better will be the efficiency of AC.

Based on the concept of ISEER, a new methodology to rate the AC has been adopted. In this method, the ISEER value is calculated for the entire year assuming the temperature profile for the year and 1600 operating hours of AC in a year. Based on the value of ISEER, the STAR rating is given to ACs.

Valid from 01/01/2018 to 31/12/2019

Star Rating	Minimum ISEER	Maximum ISEER
1 Star	3.10	3.29
2 Star	3.30	3.49
3 Star	3.50	3.99
4 Star	4.00	4.49
5 Star	4.50	

Power Consumption of AC:

If you see the name plate of AC, you will notice that value of ISEER is mentioned. Electricity consumption per year is also mentioned. But it must be noted that, the electricity consumption mentioned on the name plate has been calculated based on certain parameters. The accepted norm of an EER is, the 27 degree temperature inside the room, the 35 degree temperature outside the room, whereas the humidity is 50%

The actual power consumption by AC depends on various factors: Room Size, Heat Load in the room, ambient temperature etc. Thus the actual yearly power consumption may vary from what mentioned. But the power consumption mentioned at the name plate may serve as a reference for comparison of various ACs.

Obviously, one which consumes less power. As inverter AC is variable tonnage AC. It changes its tonnage as per the ambient and room temperature. Therefore, its energy efficiency is quite good and hence consumes less power. While non-inverter AC always runs at full tonnage and hence consumes more power for the same room cooling. Therefore, Inverter AC is always recommended.

Rough Cost of 3 Star AC = Rs. 34,000

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Saving on Fixed Cost = Rs. 13000 (If you buy 3 STAR Inverter AC)

Annual Power Consumption of 3 STAR Toshiba Inverter Split AC (1600 hours in a year)
= 1045 Units or kWh

Annual Electricity Bill per Year (assuming Rs. 5 per unit):

Assuming that AC is operated only in summer i.e. 4 months and 15 hours a day = $120 \times 15 = 1800$ hours.

Power Consumption of 5 STAR Toshiba Inverter Split AC for 1800 hours

= $(767 \times 1800) / 1600$

= 863 Units or kWh

Power Consumption of 3 STAR Toshiba Inverter Split AC for 1800 hours

= $(1045 \times 1800) / 1600$

= 1176 Units or kWh

Electricity bill for 3 STAR Toshiba Inverter Split AC for the entire summer of a year

= Rs. 1176×5

= Rs. 5880

The calculation has been done assuming that AC will be operated for 15 hours for 4 months. In many areas, the peak summer requiring AC only lasts for around 3 months. The calculation shown are indicative. The actual power consumption may vary. The purpose of the article was to convey the information.

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**MORE STARS
MORE SAVINGS**

**POWER SAVINGS
GUIDE**

**ENERGY EFFICIENCY
ISEER - 3.88**

Label Period : 1st Jan 2018 - 31st Dec 2020

Appliance / Type	RAC / Split
Brand	TOSHIBA
Model / Year	RAS-14L0U2-SH-RAS-14L0A2-02020
Cooling Capacity (100%)	5432 (W)
Cooling Capacity (60%)	NA
Electricity Consumption	1393.75 Units Per Year
Compressor Type	Energy Speed
Heat Pump	No

*Energy Star products are tested according to ISO 15223 & based on 100 operating hours per week. Your actual consumption will depend on how the appliance is used.

GPS Map Camera

Google


Sohna Rural, Haryana, India
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 **GPS Map Camera**



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