

Tech specs of Recommended Material

1. Integrated Rate & Price display units –Flickering or Scrolling Type

Technical Specification of LED Matrix Integrated Display for display of Product & Price on Monolith		
Sn	Parameter	Specification
Rate & Price Display Module		
1	Display Type	LED Matrix Display –Provision for Hindi/English or any other regional language as per BPCL Specs
2	LED Type	Through-Hole (DIP-546)
3	LED Color	Cool White
4	Luminous Intensity	> 3000 NITS/SQM +/-5%
5	Viewing Angle	120 Deg horizontal / 60 Deg vertical
6	CCT	6500K +/- 300K
7	Operating Temperature	-40 Deg C to 85 deg C
8	Make of LEDs	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL / Epistar
9	Horizontal LED Pitch	10mm
10	Vertical LED Pitch	10mm
11	LED Life Time	50000 hours
12	Brightness Control	Automatic Daylight Time based Sensing for day and night with Brightness Correction(900 Lux-Day Tome ,500-Lux Night Time)
13	Cabinet Details	MS Cabinet with IP65 protection
14	Width of Cabinet	-As per drawing
15	Height of Cabinet	As per drawing
17	Display Window of Pylon	As per drawing
18	LED Mounting	PCB FR4 (Double Sided, Through-Hole, Electrically Tested, 35uM copper, minimum thickness of 1mm).
19	Power Supply Type	SMPS based Constant Voltage Power Supply.
20	Input Voltage Range	150V to 280V AC, 45-55 Hz
21	Output Power	200W maximum
22	EMI / EMC compliance	EMI and EMC compliance in accordance to EN 55011 in order that operational disturbance to internal electronics and RS485 communication does not occur.
23	Protection for SMPS	IP67

24	Surge Protection	4KV Surge
25	SMPS Mounting	SMPS should be mounted at the bottom (inside) of Monolith so that it should be easily repairable or replaceable in case of failure.
26	Other Protections	Over Voltage Protection, Over Power Protection, Short Circuit Protection, Under Voltage Protection
27	Control Sensors	Auto brightness controlled RTC-One time programmed by manufacturer.
28	Rate Updating/ Control Options	The control of price sign can be done by two options <ul style="list-style-type: none"> • Through the POS via connection to Control Unit • Hand Held Unit or WI-FI All devices can communicate via shielded data cable or wireless. Manual Handheld and POS must work simultaneously, without new configuration or changes in case of damage of the POS. Easy upgrade of manual price setting should be possible to POS price setting. All electronics already have to be included in the display unit or WI-FI Based rate update (Password protected) through I-Phone
29	RF Interface for Rate Updation	Radio Frequency Communication. License Free Band. Default maximum transmission power 1mW. Adjustable transmission power upto 15mW. Maximum based on site requirement. Receiver sensitivity less than 40fW. By default RF module will be in Low Power/Sleep mode. All display module will have individual RF module for interface. Transmission power will be automatically adjusted by the system itself as per requirement. By default it must be 1mW. Certificate required.
30	POS Connection	Connection to POS should be made with RS485 communication. The Display vendor may give his own protocol for integrating with the POS. In case BPCL provides protocol for display, Vendor should make the display unit compliant with it.
31	Interconnectivity	All display units inside a Monolith must be electrically isolated and must work independently in all aspects. Four independent drivers to be included for all four displays. When needed each driver should be able to support two displays.
33	Temperature Control	Automatic Thermal Shutdown of DC Power Supply to LED Display
34	Event Logging	Display Health and Power Status should be reported to the POS on request
35	Device ID Programming	Factory programmed or one time site programmed. Device ID indicates pylon address and will be used for Data Downloading, Uploading and other operations.
36	Memory	Stored data must be saved for 1 year without any power. Data must not change by anyway. It can only be retrieved.

37	Environmental Compliance	IP-65
38	Price to be displayed	The display should flip the SAP code, Date, Name of the products and its price like Petrol, Diesel, Speed, High Speed, CNG/LPG, etc.
39	Messages	Promotional Messages should also be displayed whenever available. (English Language. Max character < 1000)
40	Language Support	Additional regional languages shall be supported for product name.
42	Display Format	The panels would be full LED display with white colour pixels displaying following flipping one after another i. SAP Code and Date ii. Name of the product (Petrol) and Rate of the product (Petrol) iii. Name of the product (Diesel) and Rate of the product (Diesel) iv. Any other Promotion message. v. Options need to be kept to display rate of speed, High speed and MS93 after MS and HSD. vi. The provision shall be kept in system to keep RSP above RS100 to meet the futuristic needs i.e 3 digits for rupees and 2 digits for paisa. vii. The name of the product shall be displayed in BPCL font and design.
43	Certifications	For P10 module : LM79 , LM80 ,
44		
45	Power Cable	3-Core 1.5sqmm armored copper from UPS
46	Data Cable	2-Core cable

Individual circuitry shall be provided for Signature Front lit fittings, Crown front lit fittings and Integrated Rate & Price display units applicable.

IMPORTANT NOTE: A prototype approval has to be taken including the arrangement for changing rates (by Remote and Compatibility with BPCL Automation) by the vendors (before the Commencement of work) to whom the purchase order has been awarded.

The product being offered by the vendor should meet our technical parameters. This would be Ascertained through the technical information provided by the vendor. The product offered should also have certifications issued by CPRI, IIT Mumbai, IIT Delhi, UL Gurgaon, TUV Pune, Intertech, NABL Baroda for critical technical specifications and compliance to standards. The minimum certifications required for RDU (Rate Display Unit) and LED light individually are

- a. Lumen Depreciation Curve of LEDs used as per L70
- c. Test report as per LM79 by vendor
- d. LM 80 report for the LEDs used from manufacturer
- e. IP-65 certification report as per IS: 10322 (part-2)-1982
- f. Protection test.

An input from automation (cat -6 cable) will be provided by site engineer to RDU/ PDU for facilitation of rate change.



Warranty : Vendors shall extend a warranty of 5 years for LEDs fittings, Integrated RDU/PDU and BPCL Lettering installed at Canopy Fascia

2 Tech Specs of Bharat Petroleum (LED Type):

Technical specification of LED letter on Fascia		
Sn	PARAMETER	SPECIFICATION
Scope of Job:		
<ul style="list-style-type: none"> Supplying and Fixing of Led Letters (Each Letter will have separate body/cabinet) for existing canopy structures. Important points to be remembered during job execution: All LEDs of BPCL Lettering should be in parallel. Cut out fascia should be changed to fit letters perfectly. 		
1	Display Type	Alpha Numeric LED Letters (as per Drawing),
2	LED Type	SMD, 5500 Kelvin, Min 120 degrees
3	Make of LED's	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL
4	Number of LED's per digit / Design	2 rows of LEDs in 20mm width and as per design. (Ref. Dwg.)
6	LED Arrangement	LED array should be arranged so that in any condition if any single LED fails then none of the row should be affected.
8	Size of Characters	Ref. Drawing
9	Size of Cabinet	Ref. Drawing, and Depth Should not exceed 15mm, Material of cabinet should be Aluminum.
10	Display Cabinet (front)	3 mm thick Polycarbonate (transparent white)/IP 54 Protection. Make - Lexan of M/s SABIC , Makrolan of M/s Bayer
11	LED mounting PCB	Metal Clad PCB (Electrically tested, 35uM copper, 35uM plating, and colour to be / close to BPCL blue, minimum thickness of 1.6 mm (party to submit Manufacturer's test report). Each Product Line with LED display shall have individual separate PCB control Card and associated circuitry to receive the signal for rate updation through either RF remote/ RS 485.

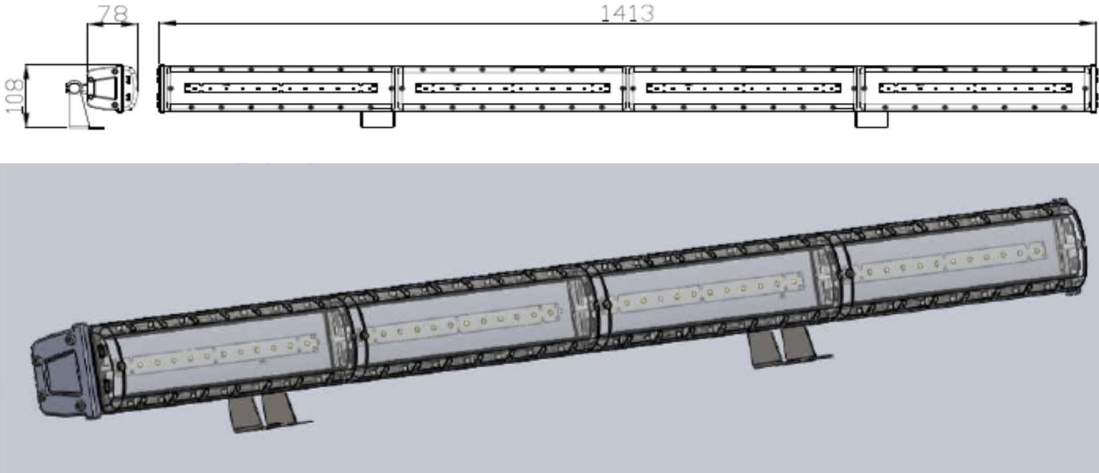
		The mounting angle in BPCL lettering should either be horizontal or vertical (Mounting angle should not be made angular along the profile of the font)
12	Control sensors	True ambient light monitoring, Automatic brightness adjustment. Brightness must be visible more than 500 meters on clear site up to maximum support of LED. Dimming must be associated with calendar also. All letters & characters must glow equally.
13	LED Driver	LED Driver should be constant current SMPS based. Driver should support PWM (Pulse Width Modulation) Dimming. During Day time as per Ambient Lux Level. Individual circuitry should be supported. Min 5V driver to be installed
16	Supply voltage	AC 150~320 V Continuous, 50hz +/- 10%, with proper surge protection 6KV.
17	Temperature control	Thermal management-Fuzy Logic, Automatic thermal shutdown of DC power supply to Led display.
21	Environmental compliance	IP65, Coating should be sprayed to maintain uniform thickness (Not to be brush painted) to make it IP compatible.
22	EMI / EMC compliance	EMI and EMC compliance in accordance to EN 55011 in order that operational disturbance to internal electronics and RS485 communication does not occur.

The product being offered by the vendor should meet our technical parameters. This would be Ascertained through the technical information provided by the vendor. The product offered should also have certifications issued by CPRI, IIT Mumbai, IIT Delhi, UL Gurgaon, TUV Pune, Intertech, NABL Baroda for critical technical specifications and compliance to standards. The minimum certifications required for RDU (Rate Display Unit) and LED light individually are

Warranty for LEDs: Vendor shall provide a warranty of 5 Years for LEDs and System.

Bharat Petroleum

3 Monolith Signature Lighting:

Product Description	60W(+/- 5%) LED Tunnel Light, 4' Long with Aluminum Extrusion body and multiple optics – IP65
Fixture Dimension	1413mm X 108mm X 78mm
Fixture Body	Extruded Aluminum Housing
Diffuser Material	Poly carbonate
Optical Lens	46 Nos of 9 Degree Narrow Beam Lens & 2 Nos of 50 Degree Wide Beam Lens (1 each 50 Degree Lens to be placed at both the end)
CCT	5700K +/- 300K
Lumen Efficacy	>95lm/Watt at the delivered level
LED Driver	BIS Approved Fully Potted IP67 LED Driver with below specification: (a) Over Voltage Cut Off & Restart- 320 V (b) Under Voltage Cut Off & Restart- 100 V (c) 440V Protection – 8 Hours (d) THD <10% (e) Power Factor >0.9 (f) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham or Equivalent
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
Surge Protection	External Surge protection :10KA/10KV, IP67 SPD to be used Internal Surge Protection : ISP device should be inbuilt in Monolith Signature Light.
Mounting Bracket	Stainless Steel Rotatable Bracket – 2 Nos / Fixture
Product Image / Drawing	

4 Monolith Crown Lighting:

Product Description	40W(+/- 5%) LED Profile Light, 1.45 Mtr Long with 30 Degree Linear Lens – IP65 BPCL Fixture Ref No: FPL04040K65 or Equivalent meeting tech specs
Fixture Dimension	1450mm X 56mm X 26mm
Fixture Body	Aluminum Housing
Optical Lens	30 Degree Linear Lens
CCT	4000K +/- 300K
LED Driver	BIS Approved Fully Potted IP67 LED Driver (Non Integral) with below specification: (g) Over Voltage Cut Off & Restart- 320 V (h) Under Voltage Cut off & Restart- 100 V (i) 440V Protection – 8 Hours (j) THD <10% (k) Power Factor >0.9 (l) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham or Equivalent
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
External Surge Protection	10KA/10KV, IP67 SPD to be used (Non Integral)
Product Image / Drawing	

5 Emblem Pole Lighting:

Product Description	45W(+/- 5%) LED Tunnel Light, 3' Long with Aluminum Extrusion body and multiple optics – IP65
Fixture Dimension	915mm X 108mm X 78mm
Fixture Body	Extruded Aluminum Housing
Diffuser Material	Poly carbonate
Optical Lens	30 Nos of 9 Degree Narrow Beam Lens & 6 Nos of 50 Degree Wide Beam Lens (1 each 50 Degree Lens to be placed at both the end of each PCB)
CCT	5700K +/- 300K
Lumen Efficacy	>95lm/Watt at the delivered level

LED Driver	BIS Approved Fully Potted IP67 LED Driver with below specification: (m) Over Voltage Cut Off & Restart-320V (n) Under Voltage Cut Off & Restart- 100V (o) 440V Protection – 8 Hours (p) THD <10% (q) Power Factor >0.9 (r) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham or Equivalent meeting tech specs.
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
External Surge Protection	10KA/10KV, IP67 SPD to be used
Mounting Bracket	Stainless Steel Rotatable Bracket – 2 Nos / Fixture
Product Image / Drawing	

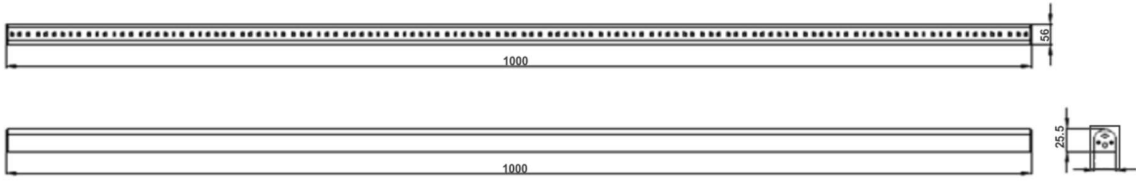
6 Arch Lighting Focus:

Product Description	18W(+/- 5%) LED Linear Spot Light with Special Optical Lens and Blue LED – IP 54 as it is indoor light
Fixture Dimension	330mm X 56mm X 26mm
Fixture Body	CRCA
Diffuser Material	Toughened Glass


Optical Lens	10 Nos of 30/65 Degree Oval Beam Angle Lens
LED Chip Specification	Blue Color LED with 465 – 470 Nano Meter Wave length
LED Driver	BIS Approved Fully Potted LED Driver (Non Integral) with below specification: a) Efficiency > 85% b) Over/under Voltage Application-320V/100V c) THD < 10% d) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
Product Image / Drawing	
All lens should be UV protected.	

7 Yellow Fascia lighting:

Product Description	22W LED Profile Light, 1 Mtr Long with 30 Degree Linear Lens – IP65 All lens should be UV protected.
Fixture Dimension	1000mm X 56mm X 26mm (500mm long for corners)
Fixture Body	Aluminum extruded profile section Housing
Optical Lens	30 Degree Linear Lens
CCT	4000K +/-300K
LED Driver	BIS Approved Fully Potted IP67 LED Driver (Non-Integral. Single Driver to be used for 2 Linear Fixtures) with below specification: (a) Over Voltage Cut Off & Restart- 320 V (b) Under Voltage Cut off & Restart- 100 V (c) 440V Protection – 8 Hours (d) THD < 10%

	(e) Power Factor >0.9 (f) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham or Equivalent meeting tech specs
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
External Surge Protection	10KA/10KV, IP67 SPD to be used (Non Integral)
Product Image / Drawing	
	

8 Signage Lighting (Spreader, Conjoint & Display)

Product Description	1) 40W LED, 1120mm Long Linear High Output Al. Extrusion Module with Non-Integral Driver 2) 20W LED 560mm Long Linear High Output Al. Extrusion Module with Non-Integral Driver
Fixture Dimension	1) 1120mm X 44mm x 10mm 2) 560mm x 44mm X 10mm
Fixture Body	Aluminum Extrusion
Optical Lens	NA
CCT	5000K +/- 300K
CRI	80
Lumen Efficacy	> 130 lm/w to be measured at delivered level.
LED Driver	BIS Approved Fully Potted LED Driver (Non-Integral) with below specification: a) Efficiency>85% b) Over/under Voltage Application-320V/100V c) THD <10% d) Surge Protection: 4KV LED Driver Make: BAG / Inventronics / Fulham or Equivalent meeting tech specs
LED Chip Make	CREE/ NICHIA/ OSRAM/ SAMSUNG/ CITIZEN/ PHILIPS (Lumileds)/SEOUL/ Bridgelux
Product Image / Drawing	
	

--

- Light fittings to be provided with all necessary internal wiring (Copper 3/20).
- Drivers should comply with BIS specifications.
- All products should be to embossed or screen printed (No sticker or skin allowed) with Name of supplier, Batch No & Year.
- Warranty for lights will be given for lot by suppliers. RVI vendor to provide warranty to BPCL linking this batch no with sites.

TECH SPECS FOR RVI NEW & RETROFIT