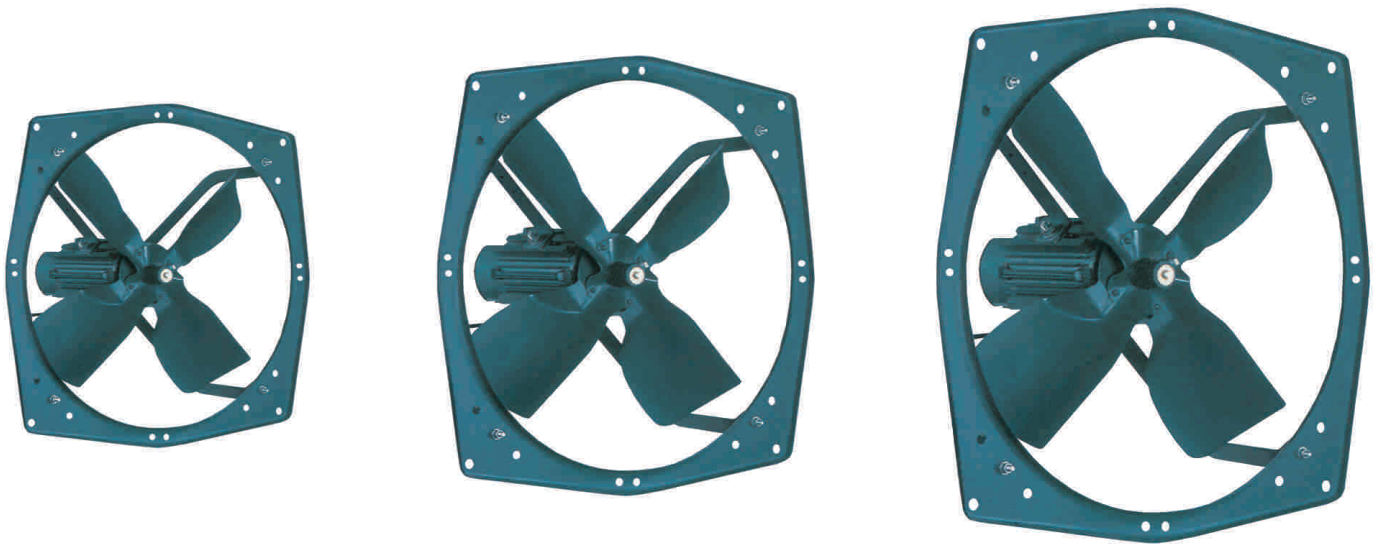




## Industrial Fan



*Fans for the Long Run!*

MARATHON Electric the pioneer and acknowledged leader for fans in India introduces GPN/BVN/BVA series fans. These fans are backed by extensive knowledge of design and application engineering of last 50 years of India's largest manufacture of fans and aided by latest manufacturing facility using CNC machine tools.

The products included in this catalogue are available off the shelf from local dealers/ godowns located throughout the country.

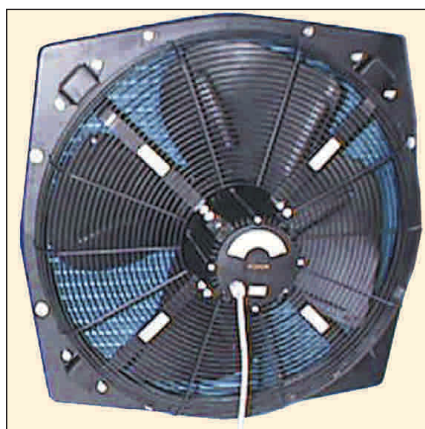
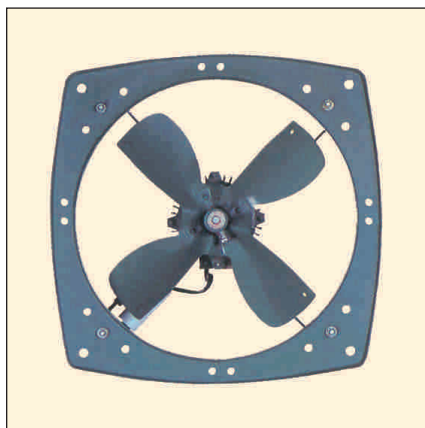
The plant is certified by BVQI for ISO9001 quality management system.

SN series (60 C/S supply) fan is certified by CSA for NRTL/C marking suitable for North American and Canadian markets.

CE marked fans complying to EU regulations suitable for European market are available.

#### Major Applications :

- Industrial Ventilation.
- Large Kitchen Ventilation.
- Transformer Cooling.
- Evaporative Air Cooler.
- Condenser Cooling.
- Controlled Air Movement.



#### Standards

INDIAN		INTERNATIONAL			
		European Standard (CE marking)		North American/ Canadian Standard (NRTL/C marking)	
Propeller type AC Ventilating fans	IS - 2312	Safety Requirements	EN 60 335 -1 EN 60 335 - 2 - 80	Fans & Ventilators	C22.2 No. 113-M1984
Evaporative air cooler (desert cooler)	IS - 3315				
Degree of Protection	IS - 4691	EMI/EMC	EN 50 082 - 2 EN 50 081 - 2	Safety - Electrical Fans	UL Std No. - 507

#### Features :

- 300 mm to 915 mm diameter.
- Volume flow from 1200 m<sup>3</sup> per hour to 28000 m<sup>3</sup> per hour.
- Static pressure upto 150 pa (15mm WG)
- SN series fan approved by CSA for NRTL/C marking as required for North American and Canadian markets are available.
- CE marked fan available for European market.
- Extruded/pressure die cast shell with provision for accurate positioning of impeller assembly to derive best air performance under static pressure.
- Unique fastening system with improved rigidity.
- Maintenance free operation.

#### Sizes :

- 300, 380, 450, 610 & 915 mm diameter.
- 4, 6, 8 & 10 pole Motor.

#### Supply :

- 230V/50 Hz/1 Ph.
- 400V/50Hz/3 Ph.
- 115V/230V/60Hz/1 Ph.
- 230V/460V/60Hz/3 Ph.

#### Fan Performance :

- Available installation options :
  1. Ring mounting - High air volume suitable for FID condition - as standard.
  2. Diaphragm mounting - High air volume required under static pressure - Optional.

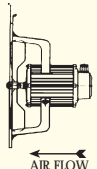
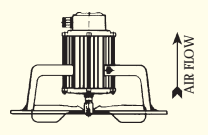
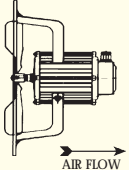
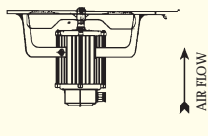
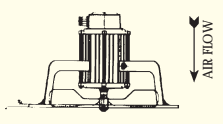
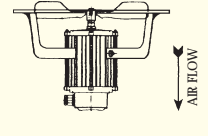
#### Motor :

- Totally enclosed air over type squirrel cage induction motors specially designed for minimum power consumption, to cater desired fan characteres. Motors are provided with following features :
  - Class B insulation (Class F - optional)
  - Voltage/Frequency Variation :
    - Voltage Variation ± 10%
    - Frequency Variation ± 5%
  - Temp. range : - 40°C to 50°C
  - IP54 protection (IP55 optional).
  - Tropicalization treatment.
  - Permanently lubricated double sealed bearing with expected L10 life of 40,000 hours.



## Form of running

Available mounting options :

CONFIGURATION	TYPE OF RUNNING	DESCRIPTION	CONFIGURATION	TYPE OF RUNNING	DESCRIPTION
	FORM A	Horizontal shaft, Air flow from motor end to blade end.		FORM D	Vertical shaft downward. Blade reversed. Air flow from blade end to motor end.
	FORM B	Horizontal shaft, Blade reversed. Air flow from blade end to motor end.		FORM E	Vertical shaft upward. Air flow from motor end to blade end.
	FORM C	Vertical shaft downward. Air flow from motor end to blade end.		FORM F	Vertical shaft upward. Blade reversed. Air flow from blade end to motor end.

Manufactured in-house with care & expertise

Each and every fan is assembled, balanced, tested and packed in the factory through a structured in-process quality control system.

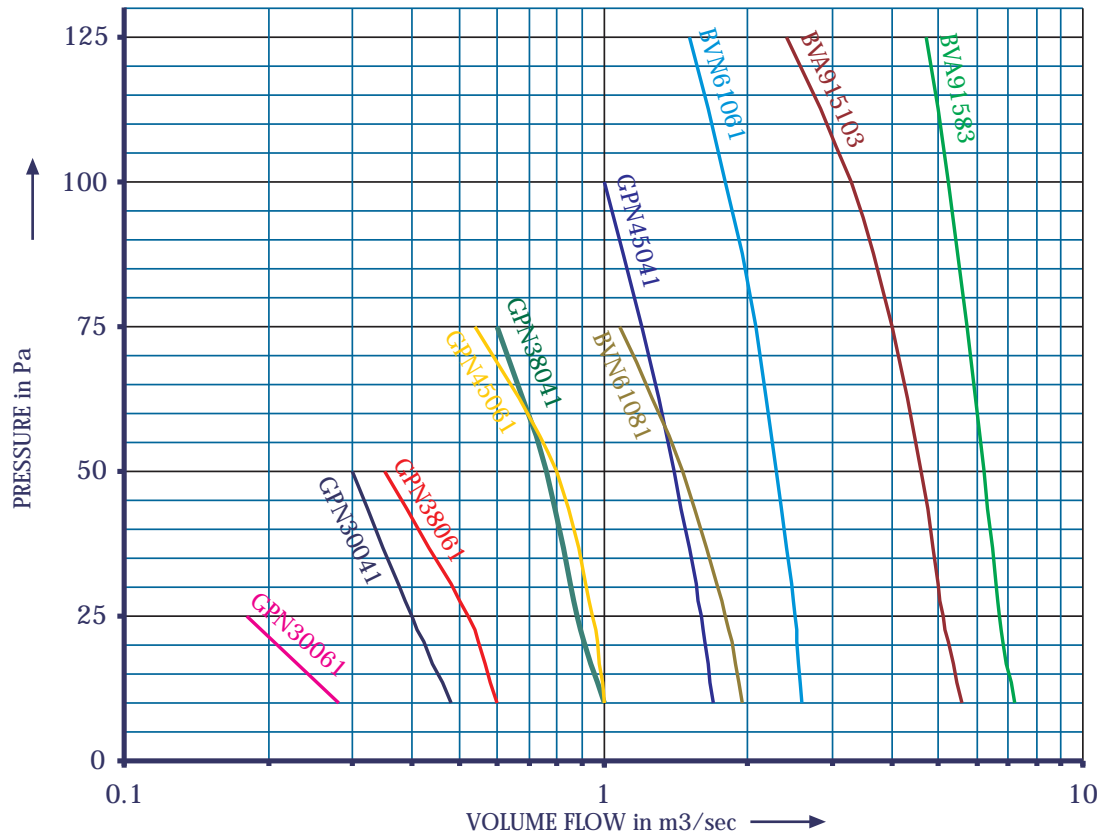
All major components which contributes to predetermined consistent performance are manufactured in the factory. The pressure die cast brackets and extruded shells are machined by CNC lathe to maintain high degree of accuracy and best output from motor.

Fan performance also depends on Impeller contour. Impellers are manufactured in-house by high precision tools using accurately curved press tools to maintain desired blade angle. Each Impeller is balance by Dynamic Balancing machine.



| Fan machine shop

## Air performance chart – 50 Hz



## Ventilation requirement

Ventilation implies fresh air supply or extraction of air. The rate of ventilation conveniently measured in cubic meter per hour should be sufficient to satisfy the following requirements.

- Extraction of Air.
- Supply of Fresh Air.
- And a combination of both of extraction and supply.

## Recommended air changes

No hard and fast rules can be laid down for rates of air changes, the recommendation given in following table may be considered as a general guide.

TYPICAL SITUATION	AIR CHANGES PER HOUR	TYPICAL SITUATION	AIR CHANGES PER HOUR
Residences Churches Storage Areas	1 - 2	Cafes Canteens Dance Halls	8 - 12
Libraries Banks Class Rooms	2 - 4	Restaurants Domestic Kitchen Laundries	10 - 15
Offices Assembly Halls Laboratories Cleaners	4 - 6	Canteen Kitchen Bakeries Dyers	15 - 30
Hospital ward & Treatment rooms Lavatories, Bathroom & Bars	6 - 8	Boiler houses Engine rooms Swimming baths	15 - 30
Theatres Cinemas Garages Workshops	6 - 10	Paint Shops Foundries & Furnace Rooms	30 - 60

Performance Data - 50 Hz

Performance chart

MODEL	SWEEP (mm)	MOTOR	PHASE	SPEED (RPM)	VOLTAGE (V)	INPUT (W)	CURRENT (AMPS)	FREE AIR FLOW (m <sup>3</sup> /hr.)
GPN30061 GPN30041	300	AF30 AF30	SINGLE SINGLE	900 1400	230 230	50 80	0.22 0.36	1200 2000
GPN38061 GPN38063 GPN38041 GPN38043	380	AF45 AF45 AF45 AF45	SINGLE THREE SINGLE THREE	900 900 1400 1400	230 400 230 400	85 85 180 180	0.41 0.2 0.82 0.4	2500 2500 4200 4200
GPN45061 GPN45063 GPN45041 GPN45043	450	AF55 AF55 AF55 AF55	SINGLE THREE SINGLE THREE	900 900 1400 1400	230 400 230 400	132 132 372 372	0.6 0.3 1.75 0.82	4500 4500 7000 7000
BVN61063 BVN61061 BVN61081 BVN61083	610	BF80 BF80 BF80 BF80	THREE SINGLE SINGLE THREE	900 900 700 700	400 230 230 400	500 500 240 240	1.0 2.3 1.1 0.5	10450 10450 7900 7900
BVA91583 BVA915103	915	CF83 CF83	THREE THREE	700 550	400 400	1200 700	2.5 1.5	28000 22100

Performance Data - 60 Hz ★

CSA File No. IR114613 - 2

MODEL	SWEEP (mm) (inch)	MOTOR	PHASE	SPEED (RPM)	VOLTAGE (V)	INPUT (W)	CURRENT (AMPS)	FREE AIR FLOW (m <sup>3</sup> /hr.)
SN30043 SN30043 SN30041 SN30041	300 (12")	AF30	THREE THREE SINGLE SINGLE	1660 1660 1660 1660	230 460 115 230	110 110 110 110	0.42 0.23 0.9 0.45	2300 2300 2300 2300
SN38043 SN38043 SN38041 SN38041	380 (15")	AF55	THREE THREE SINGLE SINGLE	1700 1700 1700 1700	230 460 115 230	270 270 270 270	1.2 0.6 2.4 1.0	4600 4600 4600 4600
SN45043 SN45043 SN45041 SN45041	450 (18")	AF90	THREE THREE SINGLE SINGLE	1680 1680 1650 1650	460 230 115 230	600 600 600 600	0.95 1.90 6.1 2.7	8250 8250 8250 8250
SN30063 SN30063 SN30061 SN30061	300 (12")	AF30	THREE THREE SINGLE SINGLE	1080 1080 1080 1080	460 230 115 230	60 60 60 60	0.15 0.3 0.6 0.32	1400 1400 1400 1400
SN38063 SN38063 SN38061 SN38061	380 (15")	AF55	THREE THREE SINGLE SINGLE	1080 1080 1080 1080	460 230 115 230	110 110 110 110	0.23 0.46 1.0 0.52	2900 2900 2900 2900
SN45063 SN45063 SN45061 SN45061	450 (18")	AF90	THREE THREE SINGLE SINGLE	1080 1080 1080 1080	460 230 115 230	210 210 230 230	0.42 0.85 2.7 1.1	5000 5000 5000 5000
SN61063 SN61063 SN61061 SN61061 SN61083 SN61083 SN61081 SN61081	610 (24")	BF100	THREE THREE SINGLE SINGLE THREE THREE SINGLE SINGLE	1080 1080 1080 1080 810 810 810 810	460 230 115 230 460 230 230 115	720 720 720 720 500 500 500 500	1.3 2.6 7.1 3.3 0.95 1.8 2.4 5.0	11000 11000 11000 11000 8700 8700 8700 8700
SN91583 SN91583 SN915103 SN915103	915 (36")	CF108	THREE THREE THREE THREE	810 810 650 650	460 230 460 230	1850 1850 1000 1000	3.2 6.4 1.8 3.6	31000 31000 25000 25000

★ Note : For SN Series, please seek works confirmation prior to finalization of order

## Fan Selection

The procedure of estimating the rate of ventilation is to multiply the total interior space by the number of air change per hour for the respective space given in Fan selection guide. This gives the rate of air movement required in cubic meter per hour. Thus ventilation on the basis of the air change requirement is calculated as follows :

Air movement per hour = length x width x height of the building x recommended air changes per hour.

Situation	Recommended Air changes per hour	Size of	Air changes per hour	Typical Example		
				Air movement (m <sup>3</sup> / hr)	Qty (Nos.)	Model

### Industrial

Laboratories	4 - 6	10m x 8m x 4m = 320m <sup>3</sup>	6	6 x 320 = 1,920	2 Nos.	GPN 30061
Factories/Workshops	6-10	30m x 20 m x 8 m = 4800 m <sup>3</sup>	10	10 x 4800 = 48,000	7 Nos.	GPN 45043
Boiler Houses	15-30	20m x 15 m x 10m = 3000 m <sup>3</sup>	30	30 x 3000 = 90,000	9/14 Nos.	BVN 61063/ GPN 45043
Foundries	30-60	30m x 10m x 8m = 2400 m <sup>3</sup>	50	50 x 2400 = 1,20,000	12/18 Nos.	BVN 61063/ GPN 45043

### Commercial / Domestic

Banks	2 - 4	20m x 20m x 4m = 1600 m <sup>3</sup>	4	4 x 1600 = 6,400	3 Nos.	GPN 38061
Assembly Halls	4 - 6	15m x 20m x 4m = 1200 m <sup>3</sup>	6	6 x 1200 = 7,200	3 Nos.	GPN 38061
Offices	4 - 8	10m x 10m x 4m = 400m <sup>3</sup>	8	8 x 400 = 3,200	2 Nos.	GPN 38061
Hospital (General Ward)/	6 - 8	20m x 15m x 8m = 2400m <sup>3</sup>	8	8 x 2400 = 19,200	8 Nos.	GPN 38061
Cinemas/Theatres	6 - 10	30m x 20m x 10m = 6000m <sup>3</sup>	10	10 x 6000 = 60,000	14 Nos.	GPN 45061
Canteens/Restaurants	8 - 14	20m x 10m x 8m = 1600m <sup>3</sup>	12	12 x 1600 = 19,200	5 Nos.	GPN 38041
Kitchens (Domestic) & Toilets	13 - 30	3.5 mx 4m x 4m = 56m <sup>3</sup>	30	30 x 56 = 1,680	1 No.	GPN 30041
Photographics Dark Rooms	20 -30	4m x 3m x 4m = 48m <sup>3</sup>	25	25x48 = 1,200	1No.	GPN 38061

### Positioning of fan

The fans should be positioned so that the fresh air drawn inside will permeate the entire room. Fans should not be installed in close proximity to doors or windows which maybe left open. In such cases, the air movement would be short circuited between the fans and adjacent inlets, and other parts of the room would remain non-ventilated.

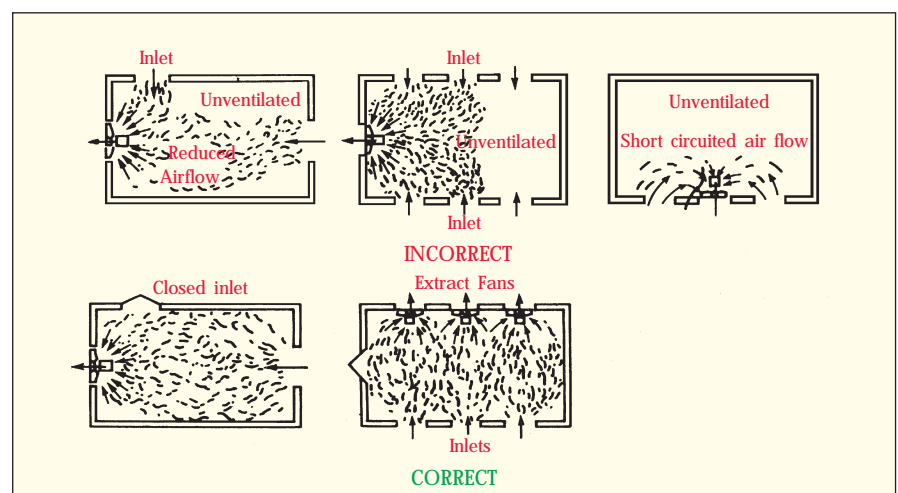
#### Recommendation regarding positioning of industrial fan

1. Install the exhaust fan in a window or wall farthest from the door. Replacement air will then flow over the whole of the occupied space.
2. Services are provided for effective selection of our fans.
3. Annual maintenance services are also provided.

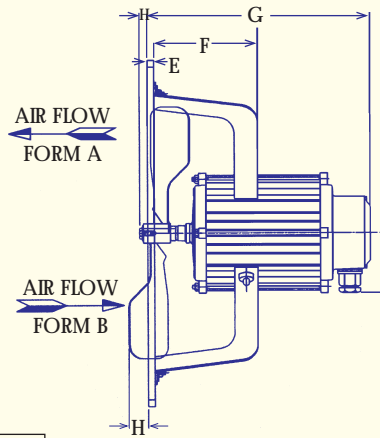
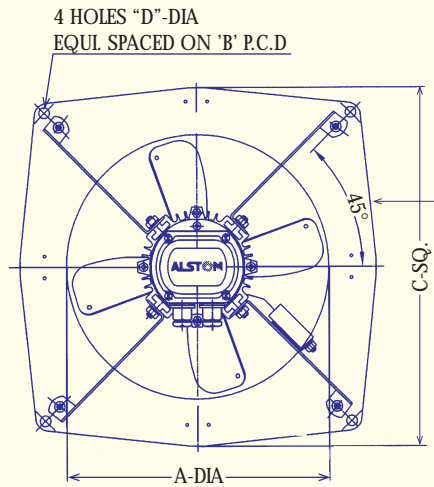
### Speed control

GPN series fans are designed to provide stable speed regulation. Substantial speed reduction is inevitable accompanied by high rotor loss. The loss reaches its peak at 2/3rd Sync. / RPM. GPN series fans are suitable for speed regulation in entire range.

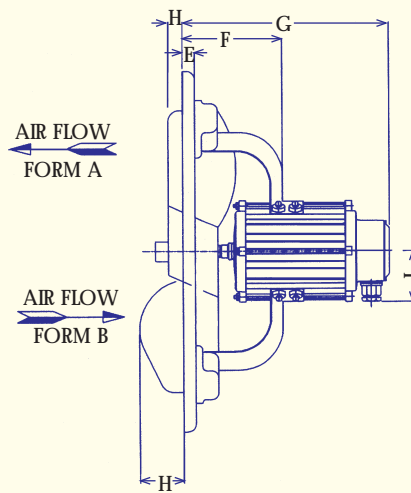
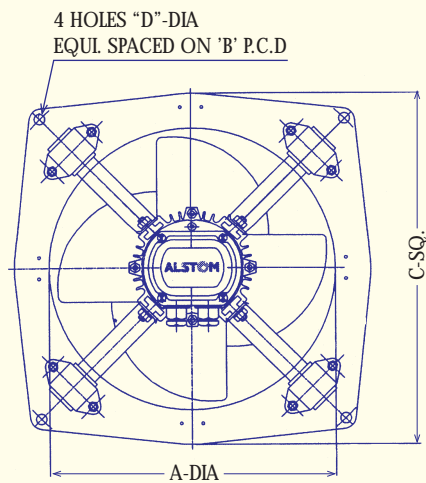
4. In kitchen the best place for the exhaust fan will be in the wall adjacent to, but not directly above the cooker - the chief source of steam.
5. In large occupied spaces, the most effective ventilation will be obtained, when several small fans are installed instead of one or two large fans.



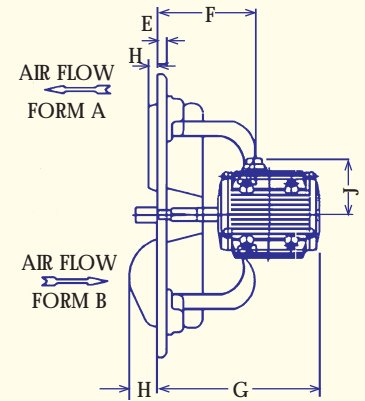
Typical positioning of fan



GPN FAN



BVN FAN



BVA FAN

GPN SERIES & BVN / BVA SERIES

BRAND	SWEEP	A	B	C	D	E	F	G	H		J	(APPROX) WT.(KG)
									FORM-A	FORM-B		
GPN	300	330	447.5	384	9.5	9.5	101.5	195	23	41	61	7.1
GPN	380	406	530	467	9.5	9.5	116.5	220	13	29	61	9.3
GPN	450	482	635	546	11	12.5	129.5	280	3.5	13.5	61	10.1
BVN	457	482.5	635	546	11	12.5	142.5	352	2	7	61	14
BVN	610	635	844	715	11	12.5	196.5	359	4	36	74	24
BVA	915	952	1181	1060	17	19	234	436	7	15	165	65

Note :

The dimension and weights given are standard. Any changes required for a definite application, may be referred to the Factory.

Accessories

Following accessories are also available as an extra features to our fans.

- Louvre Shutters
- Wall Cowl
- Wire Guard
- RE Unit



Specialized custom built motors • Specialists in short cycle deliveries

**Marathon Electric Motors (India) Limited Registered & Head Office:** 58, Taratala Road, Kolkata - 700024. LT Motor & Fan Factory, Paharpur Works, 58, Taratala Road, Kolkata - 700024, Fax: 9133 24695369 / 8530, Phone: 9133 32576621/9903900801; 9133 24695560/61. Large LT Motor & HT Motor Factory, AEI Works, 1, Taratala Road, Kolkata- 700024, Fax : 9133 24696988. **MEMIL Regional Offices:** **New Delhi:** 708, Eros Building, 56, Nehru Place; Tel: 9111 4160 7123, 09717596620. **Chandigarh:** Chamber No. 8a, 2 Floor, Sco No. 2441-42, Sector 22-C; Tel: 09779024276. **Mumbai:** B-908/909 Sagar Tech Plaza, B- Wing, 9th Floor, Andheri Kurla Road, Sakinaka, Andheri(E) Tel: 9122 28523106, 09867605432, Fax: 22 30401555. **Pune:** 41/14, Office Club Swaroop Complex Karve Road; Tel: 9120 25463978, 09766623159; **Ahmedabad:** 415 / Platinum Plaza, Nr. Pushkar Tower, Judge-bungalow-Bodakdev Road; Tel: 9179 25602297, 09724507548. **Nagpur:** 1 Floor, Block A, Thapar Enclave, Plot No. 148, Ramdaspath; Tel: 91712 2526220, 09730032070. **Raipur:** 1 Floor, 141, Sundernagar, Near Adarsh Chowk; Tel: 91771 2210 240. 09752537535. **Chennai** : Door No. 9, Flat No. 7, 1 Floor, Thiru. Vi. Ka. Road, Royapettah, (opp, Sathyam Theatre), Tel: 9144 43510152, 09790999037, Fax: 044 43510153. **Secunderabad:** Cabin No. 47, 303, Swapnalok Complex, 92, S. D. Road; Tel: 9140 27812724, 09701104446. **Bangalore** : C1-101, White House, 15 Cross, 6 Main R. T. Nagar; Tel: 9180 26558729, 09790999037. **Bhubaneswar** : C/o. Plot No. 16-B, Engineers Colony, Old Station Bazar; Tel: 916742313744, 09937002704. **Jamshedpur:** C/o. Mr. D. P. Ghosh, House No. 7, Bidyasagar Path, Uliyan, Kadma; Tel: 09934362014. **Product Enquiry:** 09903900801; memi.mktg@marathonelectric.com. **24X7 Customer Service:** 09903900891/2/3/4; 09007090127; kms@marathonelectric.com. **Marathon Electric India Private Limited:** Sector-11 Model Town, Faridabad - 12100 6 (INDIA), Tel: 91129 2286421/2265340; Fax: 91129-2284855, Email: gemi.sales@regalbeloit.com