

Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 1 of 19

S.NO.	Test and Clauses	Method	Requirement of IS Specification	Test Result	
				A	B
1	Rating (Cl.6 of IS:374:2019)	IS:374:2019	Cl.6.2- The size of ceiling fans shall be 900mm,1050mm, 1200mm, 1400mm, and 1500mm Size of fans are subject to a tolerance of ± 5 mm	1198 mm	1199 mm
2	Classification (Cl. 7 of IS- 374 :2019)	IS:302-1-2008	Cl.6-Appliances shall be class-1, class-2 or Class-3	Class-2	
		IS:302-2-80:2017	Duct fans shall be at least IPX2.	Not Applicable	
			Appliances shall have the appropriate degree of protection against harmful ingress of water.	Not Applicable	
		IS:302-2-80 :2017	6.101.Fans shall be of one of the following classes with respect to climates condition:-	Not Applicable	
			a) fans for temperature climates; and		
3	Marking (Cl. 8 of IS: 374 :2019)	IS:374 :2019	b) Fans for tropical climates.	Not Applicable	
			1) Cl. 8.1- Each fan shall be indelibly marked with the following information a) Manufactures name, trade name of fan(if any) & number	Omega's Model Name: ES-50	
			b) Rated voltage (s) or voltage range.	230 V	
			c) Type of fan ac or dc	Ac	
			d) Frequency or frequency range of power supply if of ac.	50 Hz, ac	
			e) Input in watts.	50 Watt	
			f) Size of fan	1200 mm	
			g) Country of manufacturer	INDIA	
			2) Cl. 8.2- In, case of fan & regulator provided with an earthing terminal or contact . It shall be indelibly marked with the symbol	Not Applicable	
			3) Cl. 8.3- For additional information the manufacturer may be requested to supply the following: a) Power factor	0.9	
			b) Numbers of blades	3 blades	
			c) Type of regulator & number of running positions.	Speed regulator with 5 nos. of running position	
			d) Type of bearing ; and	ball bearing	
			e) Service value	4.30 m ³ /min/w	

Authorized By:-

Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 2 of 19

S.NO.	Test and Clauses	Method	Requirement of IS Specification	Test Result	
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		IS:374:2019	4) CI 8.4 - Electric ceiling type fans may also be marked with the Standard Mark.	Not marked	
		IS :302 -2- 80:2017	CI 7.1 Fans for tropical climates shall be marked with the letter T. Fans intended for operation in locations where the local ambient temperature exceed 40°C shall be marked with the ambient operating temperature	Not Applicable	
		IS :302-2- 80 :2017	CI.7 .12. If the instructions state that the guard has to be removed for cleaning purposes, the instructions shall state the substance of the following: Ensure that the fan is switched off from the supply mains before removing the guard.	Not Applicable	
			ii) The installation instructions shall include the substance of the following : a) The model of type reference of a luminaries that may be installed in a fan constructed for this purpose;	Not Applicable	
			b) Whether the fan is intended for mounting in outside windows or walls (for partitions fans)	Not Applicable	
			c) That the fan is to be installed so that the blades are more than 2.3 m above the floor (for fans intended to be mounted at high level)	Satisfactory	
			d) That precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances (For duct and partition fans)	Not Applicable	

Authorized By:-

Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 3 of 19

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4	Speed regulator (Cl.10 of IS:374:2019)	IS:374:2019	CL 10.1- Regulators operated manually and using remote control shall be capable of reducing the speed of the fan by at least 50 percent of the full speed at the voltage and frequency specified for the test. Fans shall be capable of running continuously on any of the contacts of the regulators at the rated voltage or voltages or within the whole rated voltage range, Whichever is applicable	Satisfactory	
				171 223 271 316 352	170 221 270 315 353
			The speed difference at any running position shall not deviate by more than ± 50 percent (for induction motor) and ± 20 percent (for BLDC motor) from the ideal speed difference calculated on the basis of maximum and minimum speeds divided by the number of steps provided in the speed regulator.	45.2 rpm	45.7 rpm
			Cl 10.3- Where a regulator is provided with a capacitor not permanently connected across the motor terminals. Provision shall be made so that the capacitor is discharged when the regulator is moved to "Off " position.	Satisfactory	
			Cl 10.4- The regulator handle or knob shall either be an insulating material or , if of metal ,shall be adequately insulated electrically and thermally so that temperatures rise above ambient is limited to 20°C. All metallic parts associated with it shall be protected from accidental contact.	1.2°C	1.3°C
			Cl. 10.5- The mechanism of the regulator shall be so designed as to ensure positive contact at each running position.	Satisfactory	
			Cl. 10.6-Adequate precautions shall be taken to prevent accidental contact of moving current carrying parts with the metallic body of the regulator.	Not Applicable	

Authorized By:-



Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 4 of 19

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			Cl. 10.7-Electronic type regulators and remotes shall be provided with radio and television interference suppressing devices, if required, so as to ensure that there is no appreciable noise/disturbance on radio/television when operated outside a radius of 2 m from the regulator. Electronic type fan regulators and remotes shall comply with the requirement given in IS 11037 and IS 14700 (Part3/Sec2)	Not Applicable	
			Cl. 10.8-The voltage drop across the electronic type regulator at the maximum speed position shall not exceed 2 percent of the rated voltage of the fan.	Not Applicable	
5	Starting (Cl 11 of IS:374:2019)	IS:374:2019	Cl. 11.1-The fan shall be capable of starting up from rest with the regulator or remote, if any, at the lowest speed step when 85 percent of the rated voltage or 85 percent of the lowest declared voltage in the voltage range is applied.	Start Satisfactory	
			Cl. 11.2-For BLDC type fan should start its rotation in its normal direction of rotation, as specified by the manufacturer. During 'start', it should not move in the reverse direction before resuming its normal direction of rotation	Not Applicable	
6	Interchangeability (Cl 12 of IS:374:2019)	IS:374:2019	Cl. 12-The motor of the fan of the particular size & model and its associated regulator & set of blades shall be interchangeable such that the performance of the fan keeps within limits specified in this standard.	Interchangeable	
7	Silent operation (Cl 13 of IS:374:2019)	IS:374:2019	Cl. 13-Precautions shall be taken in the manufacture of fans and regulators to ensure a reasonable degree of silence at all speeds.	Satisfactory	
8	Measurement of speed of the fan (Cl 14.4 of IS:374:2019)	IS:374:2019	Cl. 14.4-The speed of rotation of the fan shall be determined by running the fan at the test voltage and its rated frequency. The method of measurement shall be such that the speed of the fan is not affected. The regulator, if any, shall be at the highest speed position. The measured speed shall not differ from the rated or declared value by ± 10 percent.	345RPM 342RPM	

Authorized By:-



Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 5 of 19

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			Cl. 14.4.1 The peripheral speed of the fan at test voltage and frequency shall be as follows:		
			Sr.No	Size of fan	Maximum peripheral speed (m/s)
			1	900 to 1400 mm	30
			2	1500 mm	20
9	Measurement of power factor and power input {Cl.14.5 of IS:374-2019}	IS:374:2019	Cl. 14.5 Power input (W) shall be noted and power factor of the fan shall be either measured directly with the help of a power factor meter or calculated from the readings of ammeter, voltmeter and wattmeter. The power factor under Above condition shall not be less than 0.90	49watt 50watt	24.06 m/s 21.18 m/s
				0.940 0.962	Not Applicable
10	Performance requirements {Cl.no 15.1 of IS:374-2019}	IS:374:2019	Cl. 15.The minimum air delivery (declared value)215 m ³ / min	218.48m ³ /min 217.74m ³ /min	
			The minimum service value (declared value)4.3 m ³ /min/w	4.45m ³ /min/w 4.35m ³ /min/w	
11	Endurance {Cl.16 of IS:374-2019}	IS:374:2019	Cl. 16. Fans are subjected to 1000 cycles of operation at rated voltage and frequency, each cycle of operation shall comprise the blades to reach maximum rated speed and then shutting off the fan and allow the blades to come to a complete.	Passes the test	
			Speed regulators shall be subjected to 2500 operations.The regulator shall be connected to a fan of locked -rotor or an electrical load of equivalent impedance supplied at the maximum rated voltage .	Passes the test	
12	Test for harmonic distortion {Cl.17 of IS:374-2019}	IS:14700 {Part3/Sec2}	Cl. 17.This test is applicable for brushless dc motor fans .The BLDC fan shall comply with the requirements given in IS14700 (Part3/Sec2),Total harmonic distortion shall be less than 20 percent.	Not Applicable	
13	Protection against access to live parts {Cl.8 of IS:302-2-80:2017}	IS:302-1:2008 &	Cl. 8.1.Appliances shall be constructed and enclosed so that there is adequate protection against accidental contact with live parts.	Satisfactory	

Authorized By:-



Onkar Engine & Generator (P) Limited E-14 Sector: 63, Noida (UP)
Factory Test Report As per IS 374:2019 & IS 302-2-80:2017

Page 6 of 19

S.NO.	Test and Clauses	Method	Requirement of IS Specification	Test Result	
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		IS 302-2-80:2017	Cl.8.1.1 Lamps are not removed. However during insertion or removal lamps, protection against contact with live parts of the lamp cap shall be ensured.	Not Applicable	
		IS 302-2-80:2017	Cl.8.2 After the removal of detachable parts for the purpose of user maintains the basic insulation of internal wiring may be touched provided that it is electrically equivalent to the insulation of cords complying with IS 694 or 9968 part 1.	Not Applicable	
14	Power input, and current (CL.10 of 302-2-80: 2017)	IS 302-1:2008	The power input at normal operating temperature shall not deviate by +20 percent for rated input between 25W and 300W (declared value) . Declared value : 50W	49 Watt	50 Watt
			For more than 300W The power input at normal operating temperatures shall not deviate by +15 percent or 60W (Whichever is the greater)	Not Applicable	
15	Heating (Cl. 11 of IS 302-2-80:2017)	IS 302-1:2008 & IS 302-2-80:2017	Cl. 11.4 Heating appliances are operated under normal operation and at 1.15 times rated power input.	No Such appliances	
			Cl. 11.5 Motor-operated appliances are operated under normal operation and supplied with the most unfavorable Voltage between 0.94 times 1.06 times the rated voltage.	Satisfactory	
			Cl. 11.6 Combined appliances are operated under normal operation and supplied with the most unfavorable voltage between 0.94 times and 1.06 times the rated voltage.	No Such appliances	
			Cl. 11.7 The appliances are operated until steady state conditions are established .	Satisfactory	
			Cl. 11.8 During the test, the temperature rises are monitored continuously and shall not exceed the values. However, if the temperature rise of the motor winding exceeds the value, if there is doubt, with regard to the temperature classification of the insulation of the motor.	Satisfactory	

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