Association of the Analytical Centers "Analitica"
Accreditation Body
Full Member and Signatory to ILAC and APAC
Mutual Recognition Arrangements

Accreditation certificate

№ AAC.T.00289

Valid till
March 5, 2025

Accreditation Body AAC "Analitica" certifies that

Laboratory of "Energy & Power Industries Laboratories Co (EPIL)"

Juridical and actual address: Kavosh Research City, Supa Blvd., 8th Km Karaj-Qazvin Freeway, Iran.
is accredited in accordance with
the requirements of International Standard

ISO/IEC 17025:2017
(GOST ISO/IEC 17025-2019).

This accreditation demonstrates technical competence and operation of the laboratory management system
The scope of the laboratory accreditation is described in the Appendix, which is an integral part of this Certificate.

Head of
Accreditation body

I. Boldyrev
March 5, 2020

117218, Moscow, Krzhizhanovskogo str., 14, bld. 3, floor 2, apt. XVI, room 6
+7(495)108-58-37
e-mail: info@aac-analitica.ru

Ассоциация аналитических Центров "Аналитика"
Орган по аккредитации лабораторий
Полноправный член и участник Соглашений
о взаимном признании ILAC и APAC

Аттестат аккредитации

№ AAC.T.00289

Действителен до
05 марта 2025 г.

Орган по аккредитации ААЦ «Аналитика» удостоверяет, что

Лаборатория энергетической промышленности «EPIL»

Юридический и фактический адрес:
Город Кавош ресёч, бульвар Шупа, 8 Km Карадж-Казвин шоссе, Иран.
аккредитована в соответствии с требованиями
Международного стандарта

ISO/IEC 17025:2017
(ГОСТ ISO/IEC 17025-2019).

Аккредитация подтверждает техническую компетентность
и функционирование системы менеджмента лаборатории
Область аккредитации приведена в Приложении, являющимся
неотъемлемой частью настоящего аттестата.

Управляющий
органом по аккредитации

И.В. Болдырев
05 марта 2020 г.

117218, г. Москва, ул. Кржижановского, д. 14, корпус 3, этаж 2, пом. XVI, ком. 6
+7(495)108-58-37
e-mail: info@aac-analitica.ru

Приложение к аттестату аккредитации № ААС.Т.00289
От 05 03 2020

«УТВЕРЖДАЮ»
Управляющий органом по аккредитации
ААЦ «Аналитика»
И.В.Болдырев
2020 г.

Область аккредитации
The scope of Accreditation

Laboratory of "Energy & Power Industries Test Laboratory Co"
Kavosh Research City, Supa Blvd.,8th Km Karaj-Qazvin Freeway, Iran

No.	Object of the test	The defining characteristic	Range	Test method
High-voltage switchgear and controlgear Laboratory				
1.	Alternating-current circuit-breakers	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-1
2.		Measurement of the resistance of circuits - Resistance	Quantitative Resistance: 1 μΩ to 160 mΩ	IEC 62271-1
3.		Temperature-rise tests - Temperature	Quantitative Temperature: 0 to 1370 °C Applied current: 0 to 10 kA	IEC 62271-1
4.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-1
5.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-1
6.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-1
7.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-1
8.		Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-1
9.	Alternating-current circuit-breakers	Electrical continuity of earthed metallic parts test - Resistance	Quantitative Resistance: 6.6 μΩ to 166.6 mΩ	IEC 62271-1
10.		Verification of the operational characteristics of auxiliary contacts	Quantitative Temperature: 0 to 1370 °C Resistance: 30 μΩ to 1.66 Ω	IEC 62271-1

No.	Object of the test	The defining characteristic	Range	Test method
		- Temperature - Resistance	Applied current: 0 to 100 A	
11.		Environmental tests	Qualitative Applied temperature: -40 to 150 ˚C Applied humidity: 0 to 95 %RH	IEC 62271-1
12.	Alternating-current circuit-breakers	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-100
13.		Measurement of the resistance of circuits - Resistance	Quantitative Resistance: 1 μΩ to 160 mΩ	IEC 62271-100
14.		Temperature-rise tests - Temperature	Quantitative Temperature: 0 to 1370 ˚C Applied current: 0 to 10 kA	IEC 62271-100
15.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-100
16.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-100
17.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-100
18.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-100
19.	Alternating-current circuit-breakers	Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-100
20.		Electrical continuity of earthed metallic parts test - Resistance	Quantitative Resistance: 6.6 μΩ to 166.6 mΩ	IEC 62271-100
21.		Verification of the operational characteristics of auxiliary contacts - Temperature - Resistance	Quantitative Temperature: 0 to 1370 ˚C Resistance: 30 μΩ to 1.66 Ω Applied current: 0 to 100 A	IEC 62271-100
22.		Environmental tests	Qualitative Applied temperature: -40 to 150 ˚C Applied humidity: 0 to 95 %RH	IEC 62271-100
23.		Mechanical operation test at ambient air temperature - Resistance - Time	Quantitative Resistance: 1 μΩ to 160 mΩ Time : 0 to 999 ms	IEC 62271-100
24.		Low and high temperature tests	Qualitative Applied temperature: -40 °C to 150 ˚C	IEC 62271-100

No.	Object of the test	The defining characteristic	Range	Test method
25.		Humidity test	Qualitative Applied humidity: Applied humidity: 0 to 95 %RH	IEC 62271-100
26.	Alternating current disconnectors and earthing switches	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-102
27.		Resistance measurement - Resistance	Quantitative Resistance: 1 μΩ to 160 mΩ	IEC 62271-102
28.		Continuous current tests - Temperature	Quantitative Temperature: 0 to 1370 ˚C Applied current: 0 to 10 kA	IEC 62271-102
29.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-102
30.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-102
31.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-102
32.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-102
33.	Alternating current disconnectors and earthing switches	Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-102
34.		Verification of the operational characteristics of auxiliary contacts - Temperature - Resistance	Quantitative Temperature: 0 to 1370 ˚C Resistance: 30 μΩ to 1.66 Ω Applied current: 0 to 100 A	IEC 62271-102
35.		Environmental tests	Qualitative Applied temperature: -40 to 150 ˚C Applied humidity: 0 to 95 %RH	IEC 62271-102
36.		Dielectric test	Qualitative Dielectric breakdown or not	IEC 62271-102
37.		Operating and mechanical endurance tests - Resistance - Time	Quantitative Resistance: 1 μΩ to 160 mΩ Time : 0 to 999 ms	IEC 62271-102
38.		Low- and high-temperature tests	Qualitative Applied temperature: -40 °C to 150 ˚C	IEC 62271-102
39.	Switches 1 kV to 52 kV	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-103

No.	Object of the test	The defining characteristic	Range	Test method
40.		Measurement of the resistance of circuits - Resistance	Quantitative Resistance: 1 μΩ to 160 mΩ	IEC 62271-103
41.		Temperature-rise tests - Temperature	Quantitative Temperature: 0 to 1370 ˚C Applied current: 0 to 10 kA	IEC 62271-103
42.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-103
43.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-103
44.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-103
45.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-103
46.	Switches 1 kV to 52 kV	Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-103
47.		Electrical continuity of earthed metallic parts test - Resistance	Quantitative Resistance: 6.6 μΩ to 166.6 mΩ	IEC 62271-103
48.		Verification of the operational characteristics of auxiliary contacts - Temperature - Resistance	Quantitative Temperature: 0 to 1370 ˚C Resistance: 30 μΩ to 1.66 Ω Applied current: 0 to 100 A	IEC 62271-103
49.		Environmental tests	Qualitative Applied temperature: -40 to 150 ˚C Applied humidity: 0 to 95 %RH	IEC 62271-103
50.		Mechanical operation test at ambient air temperature - Resistance - Time	Quantitative Resistance: 1 μΩ to 160 mΩ Time : 0 to 999 ms	IEC 62271-103
51.		Low and high temperature tests	Qualitative Applied temperature: -40 °C to 150 ˚C	IEC 62271-103
52.		Humidity test on auxiliary and control circuits	Qualitative Applied humidity: Applied humidity: 0 to 95 %RH	IEC 62271-103
53.	AC Metal- Enclosed Switchgear and Controlgear	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-200
54.		Measurement of the resistance of circuits - Resistance	Quantitative Resistance: 1 μΩ to 160 mΩ	IEC 62271-200

No.	Object of the test	The defining characteristic	Range	Test method
55.		Temperature-rise tests - Temperature	Quantitative Temperature: 0 to 1370 ˚C Applied current: 0 to 10 kA	IEC 62271-200
56.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-200
57.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-200
58.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-200
59.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-200
60.	AC Metal- Enclosed Switchgear and Controlgear	Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-200
61.		Electrical continuity of earthed metallic parts test - Resistance	Quantitative Resistance: 6.6 µΩ to 166.6 mΩ	IEC 62271-200
62.		Verification of the operational characteristics of auxiliary contacts - Temperature - Resistance	Quantitative Temperature: 0 to 1370 ˚C Resistance: 30 µΩ to 1.66 Ω Applied current: 0 to 100 A	IEC 62271-200
63.		Environmental tests - Temperature - Humidity	Qualitative Temperature: -40 °C to 150 ˚C Humidity: 0 to 95 %RH	IEC 62271-200
64.		Mechanical operation tests	Qualitative	IEC 62271-200
65.	High-voltage/low-voltage prefabricated substation	Dielectric tests -voltage	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 62271-202
66.		Measurement of the resistance of circuits - Resistance	Quantitative Resistance: 1 µΩ to 160 mΩ	IEC 62271-202
67.		Temperature-rise tests - Temperature	Quantitative Temperature: 0 to 1370 ˚C Applied current: 0 to 10 kA	IEC 62271-202
68.		Verification of the IP coding	Qualitative Solid: 1X to 6X Water: X1 to X8	IEC 62271-202
69.		Verification of the IK coding	Qualitative IK00 to IK10	IEC 62271-202
70.		Tightness tests - Leakage rate	Quantitative 0-50 ppm	IEC 62271-200

No.	Object of the test	The defining characteristic	Range	Test method
71.		Electromagnetic compatibility tests (EMC)	Quantitative Refer to EMC lab. scope	IEC 62271-202
72.	High-voltage/low-voltage prefabricated substation	Functional tests - Proper functioning of auxiliary and control circuits	Qualitative Applied voltage: 0 to 220 V AC/DC	IEC 62271-202
73.		Electrical continuity of earthed metallic parts test - Resistance	Quantitative Resistance: 6.6 μΩ to 166.6 mΩ	IEC 62271-202
74.		Verification of the operational characteristics of auxiliary contacts - Temperature - Resistance	Quantitative Temperature: 0 to 1370 ˚C Resistance: 30 μΩ to 1.66 Ω Applied current: 0 to 100 A	IEC 62271-202
75.		Environmental tests - Temperature - Humidity	Qualitative Temperature: -40 °C to 150 ˚C Humidity: 0 to 95 %RH	IEC 62271-202
76.		Dielectric tests	Qualitative	IEC 62271-202
Low-voltage switchgear and controlgear assemblies Laboratory				
77.	Power switchgear and controlgear assemblies	Resistance to corrosion	Qualitative damp heat cycling test: Applied temperature : 40 ˚C Applied humidity: 95 % RH Salt mist test: Applied temperature : 35±2 ˚C PH: 6.5 - 7.2	IEC 61439-1 IEC 61439-2
78.		Verification of thermal stability of enclosures	Qualitative Applied temperature : UP to 220 ˚C Applied force: 5 N	IEC 61439-1 IEC 61439-2
79.		Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects	Qualitative Applied temperature : up to 960 ˚C	IEC 61439-1 IEC 61439-2
80.		Lifting	Qualitative Adding weights : 0 - 500 kg	IEC 61439-1 IEC 61439-2
81.		Mechanical impact	Qualitative IK00 to IK10	IEC 61439-1 IEC 61439-2
82.	Power switchgear and controlgear assemblies	Marking	Qualitative Materials used : water & hexane	IEC 61439-1 IEC 61439-2
83.		Degree of protection of ASSEMBLIES	Qualitative Solid: up to 6X Water: up to X8	IEC 61439-1 IEC 61439-2
84.		Clearances and creepage distances	Quantitative	IEC 61439-1 IEC 61439-2

No.	Object of the test	The defining characteristic	Range	Test method
		- length	1mm -150 mm	
85.		Effective earth continuity between the exposed conductive parts of the ASSEMBLY and the protective circuit -Resistance	Quantitative Resistance : 0 to 9.999 Ω Applied current: 0.1 to 25 A	IEC 61439-1 IEC 61439-2
86.		Incorporation of switching devices and components	Qualitative Inspection	IEC 61439-1 IEC 61439-2
87.	Power switchgear and controlgear assemblies	Internal electrical circuits and connections	Qualitative Inspection	IEC 61439-1 IEC 61439-2
88.		Terminals for external conductors	Qualitative Inspection	IEC 61439-1 IEC 61439-2
89.		Dielectric properties	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 61439-1 IEC 61439-2
90.		Verification of temperature rise - Temperature	Quantitative Temperature: 0 - 1372 ˚C Applied current: 0 - 10 kA	IEC 61439-1 IEC 61439-2
91.		Electromagnetic compatibility (EMC)	Quantitative Refer to EMC Lab. scope	IEC 61439-1 IEC 61439-2
92.		Mechanical operation	Qualitative Operating or not	IEC 61439-1 IEC 61439-2
93.	Busbar trunking systems	Resistance to corrosion	Qualitative damp heat cycling test: Applied temperature : 40 ˚C Applied humidity: 95 % RH Salt mist test: Applied temperature : 35±2 ˚C PH : 6.5 - 7.2	IEC 61439-6
94.		Verification of thermal stability of enclosures	Qualitative Applied temperature: up to 220 ˚C Applied force: 5 N	IEC 61439-6
95.		Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects	Qualitative Applied temperature: up to 960 ˚C	IEC 61439-6
96.	Busbar trunking systems	Lifting	Qualitative Adding weights: 0 - 500 kg	IEC 61439-6
97.	Busbar trunking systems	Mechanical impact	Qualitative Cracking & sealing check IK00 to IK10	IEC 61439-6
98.	Power switchgear and controlgear assemblies	Marking	Qualitative Materials used: water & hexane	IEC 61439-6

No.	Object of the test	The defining characteristic	Range	Test method
99.		Ability to withstand mechanical loads	Qualitative ---	IEC 61439-6
100.		Thermal cycling test	Quantitative Temperature: 0 - 1372 ˚C Applied current: 0 - 10 kA	IEC 61439-6
101.		Degree of protection of ASSEMBLIES	Qualitative Solid: up to 6X Water: up to X8	IEC 61439-6
102.		Clearances and creepage distances	Quantitative 1mm-150 mm	IEC 61439-6
103.		Effective earth continuity between the exposed conductive parts of the ASSEMBLY and the protective circuit -Resistance	Quantitative Resistance: 0 to 9.999 Ω Applied current: 0.1 to 25 A	IEC 61439-6
104.	Power switchgear and controlgear assemblies	Incorporation of switching devices and components	Qualitative Inspection	IEC 61439-6
105.		Internal electrical circuits and connections	Qualitative Inspection	IEC 61439-6
106.		Terminals for external conductors	Qualitative Inspection	IEC 61439-6
107.		Dielectric properties	Qualitative Applied voltage: 0 - 100 kV for power frequency 0 - 240 kV for lightening impulse	IEC 61439-6
108.		Verification of temperature rise - Temperature	Quantitative Temperature: 0 - 1372 ˚C Applied current: 0 - 10 kA	IEC 61439-6
109.		Electromagnetic compatibility (EMC)	Quantitative Refer to EMC Lab. scope	IEC 61439-6
110.		Mechanical operation	Qualitative ----	IEC 61439-6
Medical electrical equipment Laboratory				
111.	Medical electrical equipment	Power Input	Quantitative MIN: 500 µ Aac MAX: 3000 Aac MIN: 500 µ Adc MAX: 10 Adc MIN: 0.50 W MAX: 2000 MW 0 to 300 VAC 0 to 300 VDC	IEC 60601-1 ISIRI 3368-1
112.	Medical electrical equipment	Humidity pre-conditioning treatment	Quantitative MIN: 20 °C MAX: 30 °C MIN: 91 % RH MAX: 95 % RH	IEC 60601-1 ISIRI 3368-1

No.	Object of the test	The defining characteristic	Range	Test method
113.		Determination of applied parts and accessible part -Diameter -Length	Qualitative 20 N; 5 mm; 180 mm 30 N; 1 mm; 180 mm	IEC 60601-1 ISIRI 3368-1
114.		Classification of medical equipment and medical equipment system	Qualitative ----	IEC 60601-1 ISIRI 3368-1
115.		Verification of marking & instruction	Qualitative ----	IEC 60601-1 ISIRI 3368-1
116.		Protective earthing functional earthing and potential equalization of medical equipment	Quantitative 0.1-25 A (50, 60) Hz U: <10 V/ (50, 60) Hz MIN:0.000 Ω MAX: 10 Ω	IEC 60601-1 ISIRI 3368-1
117.	Medical electrical equipment	Leakage currents and patient auxiliary currents	Quantitative 0.0 to 20.00 mA	IEC 60601-1 ISIRI 3368-1
118.		Dielectric Strength	Quantitative MIN: 0.100 KV MAX: 5.000 KV	IEC 60601-1 ISIRI 3368-1
119.		Resistance to Environmental stress	Quantitative ambient to 220 °C Up to 150 mm	IEC 60601-1 ISIRI 3368-1
120.		Creepage distance and air clearance	Quantitative MIN: 1 mm MAX: 150 mm MIN: 0.100 kV MAX: 5.000 KV	IEC 60601-1 ISIRI 3368-1
121.		Mechanical hazards associated with moving parts	Qualitative ----	IEC 60601-1 ISIRI 3368-1
122.		Mechanical hazards associated with surface, corners and edge	Qualitative ----	IEC 60601-1 ISIRI 3368-1
123.		Instability hazards -Angle measuring device	Quantitative 5 °C to 180 °C	IEC 60601-1 ISIRI 3368-1
124.		Acoustic energy	Quantitative 30 to 130 dB	IEC 60601-1 ISIRI 3368-1
125.	Medical electrical equipment	Hand-transmitted vibration	Quantitative 0.5 to 199.9 m/s^2	IEC 60601-1 ISIRI 3368-1
126.		Excessive temperature in ME equipment	Quantitative ambient to 500 °C	IEC 60601-1 ISIRI 3368-1
127.		Constructional equipment for fire enclosures of medical equipment	Qualitative ambient to 960 °C	IEC 60601-1 ISIRI 3368-1
128.		Spillage on medical equipment and	Qualitative ----	IEC 60601-1 ISIRI 3368-1

No.	Object of the test	The defining characteristic	Range	Test method
		medical system		
129.		Ingress of water or water or particular matter into medical equipment and medical equipment system	Qualitative IP 1X, 2X, 3X, 4X, 5X, 6X IP X1, X2, X3, X4, X5, X6, X7, X8 2000 mm ×2000 mm ×3000 mm	IEC 60601-1 ISIRI 3368-1
130.		Interruption of the power supply mains to medical equipment	Qualitative ----	IEC 60601-1 ISIRI 3368-1
131.		Accuracy of controls and instrument	Qualitative ----	IEC 60601-1 ISIRI 3368-1
132.	Medical electrical equipment	Usability of medical equipment	Qualitative ----	IEC 60601-1 ISIRI 3368-1
133.		Alarm system	Qualitative ----	IEC 60601-1 ISIRI 3368-1
134.		Emission with deformation of enclosure or exceeding maximum temperature	Qualitative ambient to 250 °C	IEC 60601-1 ISIRI 3368-1
135.		Exceeding leakage current & voltage limit	Quantitative 20 N; 5 mm; 180 mm 30 N; 1mm;180 mm 0 V to 100 V 0.0 to 20.00 mA	IEC 60601-1 ISIRI 3368-1
136.		Specific mechanical hazards	Qualitative ----	IEC 60601-1 ISIRI 3368-1
137.		Single fault conditions	Quantitative 0 V to 100 V 0.0 to 20.00 mA Ambient to 500 °C	IEC 60601-1 ISIRI 3368-1
138.		Mechanical strength -Push -Impact -Drop -Mould relief	Qualitative 240 to 260 N 475 to 525 gr 0 to 1.3 m 0 to 220 °C	IEC 60601-1 ISIRI 3368-1
139.	Medical electrical equipment	EMC Lab.	All EMC Test	IEC 60601-1 ISIRI 3368-1
Environmental Laboratory				
140.	All electrical equipment	Test A : Cold	Qualitative Temperature: – 40 °C to 0 °C Environmental chamber Dimension: (1000*1000*1000)m^3	IEC 60068-2-1 ISIRI 1307-2-1
141.		Test B: Dry heat	Qualitative Temperature: 0°C ~ +150 °C Environmental chamber Dimension:	IEC 60068-2-2 ISIRI 1307-2-2

No.	Object of the test	The defining characteristic	Range	Test method
			(1000*1000*1000)m^3	
142.		Test N: Change of temperature	Qualitative Temperature : – 40 °C ~ +150 °C Environmental chamber Dimension: (1000*1000*1000)m^3	IEC 60068-2-14 ISIRI 1307-2-14
143.		Test Db: Damp heat, cyclic (12 h + 12 h cycle)	Qualitative Temperature : 20 °C ~ +85 °C relative humidity: 25% ~96% Environmental chamber Dimension: (1000*1000*1000)m^3	IEC 60068-2-30 ISIRI 1307-30
144.		Test Z/AD: Composite temperature/humidity cyclic test	Qualitative Temperature : 20 °C ~ +85 °C relative humidity: 25% ~96% Environmental chamber Dimension: (1000*1000*1000)m^3	IEC 60068-2-38 ISIRI 1307-2-38
145.		Test Cab: Damp heat, steady state	Qualitative Temperature : 20 °C ~ +85 °C relative humidity: 25% ~96% Environmental chamber Dimension: (1000*1000*1000)m^3	IEC 60068-2-78 ISIRI 1307-2-78
Explosion proof Laboratory				
146.	Electrical Equipment	Resistance to impact	Qualitative Drop height: 0.1 to 2 meter	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
147.		Drop	Qualitative Drop height: 1 m	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
148.		Degree of protection (IP) by enclosures	Qualitative up to IP68	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
149.		Temperature measurement	Quantitative Up to 1300°C	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
150.		Thermal shock	Qualitative Water temperature: (10 ± 5) °C	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
151.	Electrical Equipment	Thermal endurance to heat	Qualitative RH: Up to (90 ± 5) % RH Temp: Up to (95 ± 2) °C	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
152.		Thermal endurance to cold	Qualitative Temp: 0 to -40 °C	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
153.		Resistance to light	Qualitative Irradiance: 60 ± 2 W/m^2 Black-panel Temperature: 55 ± 3°C	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505

No.	Object of the test	The defining characteristic	Range	Test method
			Black standard Temperature: 65 ± 3°C	
154.		Measurement of capacitance	Quantitative Measurement range: > 10 pF	IEC/EN 60079-0 BS-EN 60079-0 ISIRI 5505
155.		Reference pressure -Pressure	Quantitative 0 to 1400 kPa	IEC/EN 60079-1 BS-EN 60079-1 ISIRI 5505-1
156.		Non-transmission	Qualitative No explosion/ Explosion transmitted outside sample	IEC/EN 60079-1 BS-EN 60079-1 ISIRI 5505-1
157.		Over pressure Static method	Qualitative Leakage/No leakage Applied pressure: 0 to 4000 kPa	IEC/EN 60079-1 BS-EN 60079-1 ISIRI 5505-1
158.	Electrical Equipment	Roughness	Quantitative 0.005 to 16 µm	IEC/EN 60079-1 BS-EN 60079-1 ISIRI 5505-1
159.		Non-metallic layer thickness	Quantitative 1 µm to 120 mm	IEC/EN 60079-1 BS-EN 60079-1 ISIRI 5505-1
160.		Maximum overpressure	Quantitative Measurement range: Up to 4000 kPa	IEC/EN 60079-2 BS-EN 60079-2 ISIRI 5505-2
161.		Leakage	Qualitative Leakage/No leakage Applied pressure: 0 to 4000 kPa	IEC/EN 60079-2 BS-EN 60079-2 ISIRI 5505-2
162.		Purging	Quantitative Measurement range: 0.01 to 100%	IEC/EN 60079-2 BS-EN 60079-2 ISIRI 5505-2
163.		Dilution	Quantitative Measurement range: 0.01 to 100%	IEC/EN 60079-2 BS-EN 60079-2 ISIRI 5505-2
164.		Creepage and clearance	Quantitative measurement range: up to 200 mm	IEC/EN 60079-6 BS-EN 60079-6 ISIRI 5505-6
165.		Immersion depth	Quantitative measurement range: up to 50 mm	IEC/EN 60079-6 BS-EN 60079-6 ISIRI 5505-6
166.		Maximum temperature	Quantitative Up to 1300°C	IEC/EN 60079-6 BS-EN 60079-6 ISIRI 5505-6
167.	Electrical Equipment	Overpressure	Qualitative Leakage/No leakage Deformation/no deformation Pressure range: Up to 4000 kPa	IEC/EN 60079-6 BS-EN 60079-6 ISIRI 5505-6
168.		Reduced pressure	Quantitative Pressure: -100 kPa	IEC/EN 60079-6 BS-EN 60079-6 ISIRI 5505-6
169.		Dielectric strength	Quantitative Range: up to 5000 V	IEC/EN 60079-7 BS-EN 60079-7

No.	Object of the test	The defining characteristic	Range	Test method
				ISIRI 5505-7
170.		Clearance & creepage	Quantitative measurement range: up to 200 mm	IEC/EN 60079-7 BS-EN 60079-7 ISIRI 5505-7
171.		Maximum temperature (junction boxes)	Quantitative Up to 1300°C	IEC/EN 60079-7 BS-EN 60079-7 ISIRI 5505-7
172.		Over speed test of cemented magnets	Qualitative no visual displacement/ visual displacement of the rotor magnets	IEC/EN 60079-7 BS-EN 60079-7 ISIRI 5505-7
173.		Impact and drop (luminaires)	Qualitative Drop height: 0.1 to 2 meter	IEC/EN 60079-7 BS-EN 60079-7 ISIRI 5505-7
174.		Creepage distances and clearances-Pressure	Quantitative: 0 to 15 cm	IEC/EN 60079-11
175.	Electrical Equipment	Insulation dielectric strength	Quantitative: 0 to 20KV AC	IEC/EN 60079-11
176.		Mechanical resistance of casting compound	Qualitative: Damage or permanent deformation or movement greater than 1 mm	IEC/EN 60079-11
177.		Spark ignition	Qualitative: No explosion/ Explosion	IEC/EN 60079-11
178.		Temperature	Quantitative: 0 °C to 500°C	IEC/EN 60079-11
179.		Resistance of cells and batteries to short-circuit	Qualitative: Leakage / no leakage	IEC/EN 60079-11
180.		Capacity of cells and batteries	Quantitative: range / not range	IEC/EN 60079-11
181.		Determination of the acceptability of fuses requiring encapsulation	Quantitative: bubbles / no bubbles	IEC/EN 60079-11
182.		apparatus containing piezoelectric devices	Quantitative: measuring the store energy 50 µj to 2000µj	IEC/EN 60079-11
183.		Cable pull	Quantitative: displacement / no displacement	IEC/EN 60079-11
184.	Electrical Equipment	Transformer	Quantitative: transformer winding temperature shall not exceed the permissible value	IEC/EN 60079-11
185.		Optical isolators	Quantitative: 0 to 10 W	IEC/EN 60079-11
186.		Non-incendive components	Qualitative No explosion/ Explosion transmitted outside sample	IEC/EN 60079-15 BS-EN 60079-15 ISIRI 5505-15
187.		Voltage	Quantitative	IEC/EN 60079-15

No.	Object of the test	The defining characteristic	Range	Test method
			Range: up to 5000 V	BS-EN 60079-15 ISIRI 5505-15
188.		Pressure	Quantitative -100 to 4000 kPa	IEC/EN 60079-15 BS-EN 60079-15 ISIRI 5505-15
189.		Leakage	Qualitative Leakage/ no leakage Water temp: (25 ± 2) °C,	IEC/EN 60079-15 BS-EN 60079-15 ISIRI 5505-15
190.		Water absorption	Quantitative measurement range: Up to 1000 gram	IEC/EN 60079-18 BS-EN 60079-18 ISIRI 5505-18
191.		Dielectric strength	Quantitative Range: up to 5000 V	IEC/EN 60079-18 BS-EN 60079-18 ISIRI 5505-18
192.	Electrical Equipment	Maximum temperature	Quantitative Up to 1300°C	IEC/EN 60079-18 BS-EN 60079-18 ISIRI 5505-18
193.		Pressure	Quantitative Pressure range: Up to 4000 kPa	IEC/EN 60079-18 BS-EN 60079-18 ISIRI 5505-18
194.		Optical irradiance	Quantitative Spectral range: 380-780 nm	IEC/EN 60079-28 BS-EN 60079-28 ISIRI 5505-28
195.		Dielectric	Quantitative Range: up to 5000 V	IEC/EN 60079-30-1 BS-EN 60079-30-1 ISIRI 5505-30-1
196.		Electrical insulation resistance	Quantitative Measurement range: Up to 500 GΩ	IEC/EN 60079-30-1 BS-EN 60079-30-1 ISIRI 5505-30-1
197.		Water resistance	Qualitative Applied dielectric strength: Up to 5000 V	IEC/EN 60079-30-1 BS-EN 60079-30-1 ISIRI 5505-30-1
198.		Electrical resistance	Quantitative 0 to 30 MΩ	IEC/EN 60079-30-1 BS-EN 60079-30-1 ISIRI 5505-30-1
199.		Pressure	Qualitative Leakage/No leakage Applied pressure: 0 to 4000 kPa	IEC/EN 60079-31 BS-EN 60079-31
200.		Impact test for supplementary enclosures	Qualitative Drop height: 0.1 to 2 meter	IEC/EN 60079-31 BS-EN 60079-31
201.	Electrical Equipment	Degree of protection (IP) by enclosures	Qualitative up to IP68	IEC/EN 60079-31 BS-EN 60079-31
202.		Maximum service temperature	Quantitative Up to 1300°C	ISO 80079-36 EN ISO 80079-36
203.		Resistance to impact	Qualitative Drop height: 0.1 to 2 meter	ISO 80079-36 EN ISO 80079-36
204.		Drop	Qualitative Drop height: 1 m	ISO 80079-36 EN ISO 80079-36

No.	Object of the test	The defining characteristic	Range	Test method
205.		Thermal endurance to heat	Qualitative RH: Up to (90 ± 5) % RH Temp: Up to (95 ±2) °C	ISO 80079-36 EN ISO 80079-36
206.		Thermal endurance to cold	Qualitative Temp: 0 to -40 °C	ISO 80079-36 EN ISO 80079-36
207.		Thermal shock	Qualitative Water temperature: (10±5) °C	ISO 80079-36 EN ISO 80079-36
208.		Increased pressure	Qualitative Leakage/No leakage Applied pressure: 0 to 4000 kPa	ISO 80079-37 EN ISO 80079-37
209.	Electrical Equipment	Overpressure	Qualitative Leakage/No leakage Applied pressure: 0 to 4000 kPa	ISO 80079-37 EN ISO 80079-37
210.		maximum surface temperature	Quantitative Up to 1300°C	IEC TS 60079-46
211.		Dielectric strength	Quantitative Range: up to 5000 V	IEC TS 60079-46
212.		Degree of protection (IP) by enclosures	Qualitative up to IP68	IEC TS 60079-46
213.		Resistance to impact	Qualitative Drop height: 0.1 to 2 meter	IEC TS 60079-46
Cable & Accessories Laboratory				
214.	Cables for rated voltages of 1 KV (Um = 1,2 KV) and 3 KV (Um = 3,6 KV)	Electrical resistance of conductors	Quantitative 60 μΩ ~ 100 kΩ	IEC 60502-1 ISIRI 3569-1 IEC 60228 ISIRI 3084
215.		Insulation resistance measurement	Quantitative 0.12 MΩ ~ 5 TΩ	IEC 60502-1 ISIRI 3569-1
216.		Voltage test for 4 h	Qualitative 0 - 100 kV	IEC 60502-1 ISIRI 3569-1
217.		Measurement of thickness of insulation	Quantitative 0.01 ~ 20 mm	IEC 60502-1 ISIRI 3569-1 IEC 60811-201 INSO 5525-201
218.		Measurement of thickness of non-metallic sheaths	Quantitative 0.01 ~ 20 mm	IEC 60502-1 ISIRI 3569-1 IEC 60811-202 INSO 5525-202
219.		Measurement of armour wires and tapes	Quantitative 0.001 ~ 25 mm	IEC 60502-1 ISIRI 3569-1
220.		Measurement of Overall Diameter	Quantitative 0. 01 ~ 150 mm	IEC 60502-1 ISIRI 3569-1 IEC 60811-203 INSO 5525-203
221.		Tests for determining the mechanical properties of	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-1 ISIRI 3569-1 IEC 60811-401

No.	Object of the test	The defining characteristic	Range	Test method
		insulation before and after ageing		INSO 5525-401 IEC 60811-501 INSO 5525-501
222.	Cables for rated voltages of 1 KV (Um = 1,2 KV) and 3 KV (Um = 3,6 KV)	Tests for determining the mechanical properties of non-metallic sheaths before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-1 ISIRI 3569-1 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
223.		Additional ageing test on pieces of completed cables	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-1 ISIRI 3569-1 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
224.		Pressure test at high temperature on insulations and non-metallic sheaths	Quantitative 1 ~ 99 %	IEC 60502-1 ISIRI 3569-1 IEC 60811-508 INSO 5525-508
225.		Bending test for insulation	Qualitative -40 ~ 0 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-504 INSO 5525-504
226.		Bending test for sheath	Qualitative -40 ~ 0 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-504 INSO 5525-504
227.		Impact test on completed cable	Qualitative -40 ~ 0 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-506 INSO 5525-506
228.		heat shock test for insulation and sheaths	Qualitative 40 ~ 200 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-509 INSO 5525-509
229.	Cables for rated voltages of 1 KV (Um = 1,2 KV) and 3 KV (Um = 3,6 KV)	Water absorption test on insulation (Electrical method)	Qualitative ± (0 ~ 3.4) kV DC	IEC 60502-1 ISIRI 3569-1 IEC 60811-402 INSO 5525-402
230.		Water absorption test on insulation (Gravimetric method)	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-402
231.	Cables for rated voltages of 1 KV (Um = 1,2 KV) and 3 KV (Um = 3,6 KV)	Flame spread test on single cables	Qualitative ---	IEC 60502-1 ISIRI 3569-1 IEC 60332-1-2 ISIRI 3081-1-2
232.		Loss of mass test	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-409 INSO 5525-409
233.		Hot set test	Quantitative Elongation: 0 ~ 300 % 40 ~ 200 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-507

No.	Object of the test	The defining characteristic	Range	Test method
				INSO 5525-507
234.		Shrinkage test for XLPE insulation	Quantitative 40 ~ 200 ^{0}C	IEC 60502-1 ISIRI 3569-1 IEC 60811-502 INSO 5525-502
235.	Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV) and Medium Voltage Aerial bundled Cables	Electrical resistance of conductors	Quantitative 60 µΩ ~ 100 kΩ	IEC 60502-2 INSO 3569-2 IEC 60228 ISIRI 3084
236.		Measurement of thickness of insulation	Quantitative 0.01 ~ 20 mm	IEC 60502-2 INSO 3569-2 IEC 60811-201 INSO 5525-201
237.		Measurement of thickness of non-metallic sheaths	Quantitative 0.01 ~ 20 mm	IEC 60502-2 INSO 3569-2 IEC 60811-202 INSO 5525-202
238.		Measurement of armour wires and tapes	Quantitative 0.001 mm ~ 25 mm	IEC 60502-2 INSO 3569-2
239.		Measurement of Overall Diameter	Quantitative 0.01 ~ 150 mm	IEC 60502-2 INSO 3569-2 IEC 60811-203 INSO 5525-203
240.		Tests for determining the mechanical properties of insulation before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-2 INSO 3569-2 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
241.		Tests for determining the mechanical properties of non-metallic sheaths before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-2 INSO 3569-2 IEC 60811-401 IEC 60811-501
242.		Additional ageing test on pieces of completed cables	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60502-2 INSO 3569-2 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
243.	Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV) and Medium Voltage Aerial bundled Cables	Loss of mass test on PVC Sheaths ST_2	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-409 INSO 5525-409
244.		Pressure test at high temperature on insulations and non-metal sheaths	Quantitative 1 ~ 99 %	IEC 60502-2 INSO 3569-2 IEC 60811-508 INSO 5525-508
245.		Impact test on completed cable	Qualitative -40 ~ 0 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-506 INSO 5525-506

No.	Object of the test	The defining characteristic	Range	Test method
246.		heat shock test for insulation and sheaths	Qualitative 40 ~ 200 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-509 INSO 5525-509
247.	Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV) and Medium Voltage Aerial bundled Cables	Hot set test	Quantitative Elongation: 0 ~ 300 % 40 ~ 200 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-507 INSO 5525-507
248.		Water absorption test on insulation (Gravimetric method)	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-402 INSO 5525-402
249.		Shrinkage test for XLPE insulation	Quantitative 40 ~ 200 ^{0}C	IEC 60502-2 INSO 3569-2 IEC 60811-502 INSO 5525-502
250.		Flame spread test on single cables	Qualitative -	IEC 60502-2 INSO 3569-2 IEC 60332-1-2 ISIRI 3081-1-2
251.		Measurement of carbon black content of black PE oversheaths	Quantitative Mass: 0.0001~120 g	IEC 60502-2 INSO 3569-2 IEC 60811-605 INSO 5525-605
252.		Bending test	Qualitative -	IEC 60502-2 INSO 3569-2
253.		Partial discharge test	Quantitative 0 ~ 100 kV	IEC 60502-2 INSO 3569-2 IEC 60885-3 INSO 5526-3
254.		Tan δ measurement	Quantitative 0 ~ 30 kV	IEC 60502-2 INSO 3569-2
255.		Heating cycle test	Qualitative 50 ~ 110 ^{0}C 100 ~ 2500 A	IEC 60502-2 INSO 3569-2
256.		Impulse test	Qualitative 0 ~ 240 KV	IEC 60502-2 INSO 3569-2
257.		Voltage test for 4 h	Qualitative 0 ~ 100 kV	IEC 60502-2 INSO 3569-2
258.		Resistivity of semi-conducting screens	Quantitative 60 μΩ ~ 100 kΩ	IEC 60502-2 INSO 3569-2
259.	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	Resistance of conductors	Quantitative 60 μΩ ~ 100 kΩ	IEC 60227-2 ISIRI 607-2 IEC 60228 ISIRI 3084
260.		Voltage test on completed cable	Qualitative 0 ~ 100 kV	IEC 60227-2 ISIRI 607-2
261.		Voltage test on cores	Qualitative 0 ~ 100 kV	IEC 60227-2 ISIRI 607-2
262.		Insulation resistance measurement	Quantitative 0.12 MΩ ~ 5 TΩ	IEC 60227-2 ISIRI 607-2
263.		Measurement of insulation thickness	Quantitative 0.01 mm ~ 20 mm	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7

No.	Object of the test	The defining characteristic	Range	Test method
				IEC 60811-201 INSO 5525-201
264.	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	Measurement of sheath thickness	Quantitative 0.01 mm ~ 20 mm	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-202 INSO 5525-202
265.		Measurement of overall diameter and ovality	Quantitative 0. 01 ~ 150 mm	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-203 INSO 5525-203
266.		Mechanical properties of insulation before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
267.		Mechanical properties of sheath before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
268.		Loss of mass: Insulation	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-409 INSO 5525-409
269.		Loss of mass: Sheath	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-409 INSO 5525-409
270.		Pressure test at high temperature: Insulation	Quantitative 1 ~ 99 %	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-508 INSO 5525-508
271.		Pressure test at high temperature: Sheath	Quantitative 1 ~ 99 %	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-508 INSO 5525-508
272.	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V	Bending test: Insulation	Qualitative -40 ~ 0 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-504 INSO 5525-504
273.		Bending test: Sheath	Qualitative -40 ~ 0 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-504 INSO 5525-504
274.		Impact test on completed cable	Qualitative -40 ~ 0 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-506 INSO 5525-506
275.		Heat shock test: Insulation	Qualitative 40 ~ 200 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-509 INSO 5525-509

No.	Object of the test	The defining characteristic	Range	Test method
276.		Heat shock test: Sheath	Qualitative 40 ~ 200 ^{0}C	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60811-509 INSO 5525-509
277.	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	Test of flame retardance	Qualitative -	IEC 60227-1,3,4,5,6,7 ISIRI 607-1,3,4,5,6,7 IEC 60332-1-2 ISIRI 3081-1-2
278.		Test of non-contamination	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60227-4,5 ISIRI 607-4,5 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
279.		Long term resistance of insulation to dc	Qualitative ±(0 ~ 3.4) kV DC	IEC 60227-5 ISIRI 607-5
280.		Compatibility test: Insulation	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	IEC 60227-5,7 ISIRI 607-5,7 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
281.		Mechanical: Flexing test (flexible cables)	Qualitative 0 ~ 3 kV	IEC 60227-2 ISIRI 607-2
282.		Mechanical: Bending Test	Qualitative -	IEC 60227-2 ISIRI 607-2
283.		Mechanical: Snatch test	Qualitative ---	IEC 60227-2 ISIRI 607-2
284.		Mechanical: Flexing test (lift cables)	Qualitative 0 ~ 3 kV	IEC 60227-6 ISIRI 607-6
285.		Static flexibility	Quantitative ---	IEC 60227-2 ISIRI 607-2
286.	Conductors for overhead lines	Surface condition	Qualitative ----	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
287.		Inertness	Qualitative ----	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
288.	Conductors for overhead lines	lay ratio and direction of lay (conductor and steel)	Quantitative 0.1 mm ~ 1000 mm	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
289.		Mass per unit length	Quantitative 0 ~ 5.0000 kg	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
290.		Diameter of aluminum and steel	Quantitative 0.001 ~ 25 mm	EN 50182 ASTM B232

No.	Object of the test	The defining characteristic	Range	Test method
		wires and conductor	0.01 ~ 150 mm	ASTM B856 ASTM B857 INSO 17502
291.	Conductors for overhead lines	Tensile strength of aluminum and steel wires	Quantitative Tensile: 15 ~ 1000 N/mm^2 (AL) Tensile: 300 ~ 5000 N/mm^2 (steel)	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
292.		Elongation of aluminum and steel wires	Quantitative Elongation: 0 ~ 10 %	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
293.		Resistance of conductor	Quantitative 60 µΩ ~ 100 kΩ	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
294.		Resistivity of aluminum wire	Quantitative 60 µΩ ~ 100 kΩ	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
295.		Wrapping test	Qualitative ----	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
296.		Stress at 1 % extension of steel wires	Quantitative Tensile: 300 ~ 5000 N/mm^2	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
297.	Conductors for overhead lines	Mass of zinc	Quantitative 0.0001 ~ 120 gr	EN 50182 EN 10244-2 ASTM B232 ASTM B856 ASTM B857 INSO 17502
298.		Zinc dip test	Qualitative ----	EN 50182 EN 10244-2 ASTM B232 ASTM B856 ASTM B857 INSO 17502
299.	Conductors for overhead lines	Adhesion of zinc coating	Qualitative ----	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
300.		Torsion	Quantitative ----	EN 50182 ASTM B232 ASTM B856 ASTM B857

No.	Object of the test	The defining characteristic	Range	Test method
				INSO 17502
301.	Conductors for overhead lines	Cladding thickness/uniformity of aluminium-clad steel wires	Quantitative 0.001 mm ~ 1 mm	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
302.		Conductor rated tensile strength	Quantitative 10 ~ 100 kN	EN 50182 ASTM B232 ASTM B856 ASTM B857 INSO 17502
303.	Covered conductors for overhead lines	Surface condition and marking	Qualitative ----	TAVANIR Instruction EN 50182 EN 50397-1
304.		Inertness	Qualitative ----	TAVANIR Instruction EN 50182 EN 50397-1
305.		lay ratio and direction of lay (conductor and steel)	Quantitative 0.1 mm ~ 1000 mm	TAVANIR Instruction EN 50182 EN 50397-1
306.		Mass per unit length	Quantitative 0 ~ 5.0000 kg	TAVANIR Instruction EN 50182 EN 50397-1
307.		Diameter of aluminum and steel wires and conductor	Quantitative 0.001 ~ 25 mm 0.01 ~ 150 mm	TAVANIR Instruction EN 50182 EN 50397-1
308.		Resistance of conductor	Quantitative 60 μΩ ~ 100 kΩ	TAVANIR Instruction EN 50182 EN 50397-1
309.		Wrapping test	Qualitative ----	TAVANIR Instruction EN 50182 EN 50397-1
310.		Torsion	Quantitative ----	TAVANIR Instruction EN 50182 EN 50397-1
311.		Adhesion of zinc coating	Qualitative ----	TAVANIR Instruction EN 50182 EN 50397-1
312.		Tensile strength and elongation of aluminum and steel wires	Quantitative Tensile: 15 ~ 1800 N/mm^2 (AL) Tensile: 300 ~ 5000 N/mm^2 (steel)	TAVANIR Instruction EN 50182 EN 50397-1
313.	Covered conductors for overhead lines	Stress at 1 % extension of steel wires	Quantitative Elongation: 0 ~ 10 %	TAVANIR Instruction EN 50182 EN 50397-1
314.		Conductor rated tensile strength	Quantitative 10 ~ 100 kN	TAVANIR Instruction EN 50182 EN 50397-1
315.		Mass of zinc	Quantitative 0.0001 ~ 120 gr	TAVANIR Instruction EN 50182 EN 50397-1 EN 10244-2
316.		Zinc dip test	Qualitative	TAVANIR Instruction

No.	Object of the test	The defining characteristic	Range	Test method
			----	EN 50182 EN 50397-1
317.		High voltage test	Qualitative 0~ 100 kV	TAVANIR Instruction EN 50182 EN 50397-1
318.		Measurement of the leakage current	Quantitative 0 ~ 100 kV 0.001 ~ 100 mA	TAVANIR Instruction EN 50182 EN 50397-1
319.	Covered conductors for overhead lines	Measurement of thickness of insulation	Quantitative 0.01 ~ 20 mm	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-201 INSO 5525-201
320.		Mechanical properties of insulation before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
321.		Measurement of carbon black content of XLPE insulation	Quantitative Mass: 0.0001~120 g	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-605 INSO 5525-605
322.		Shrinkage test	Quantitative 40 ~ 200 ^{0}C	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-502 INSO 5525-502
323.	Covered conductors for overhead lines	Hot set test	Quantitative Elongation: 0 ~ 300 % 40 ~ 200 ^{0}C	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-507 INSO 5525-507
324.		Water absorption test on insulation (Gravimetric method)	Quantitative Mass: 0.0001~120 g 40 ~ 200 ^{0}C	TAVANIR Instruction EN 50182 EN 50397-1 IEC 60811-402 INSO 5525-402
325.	Low Voltage Aerial Bundled Cables	High voltage test on cores	Qualitative 0 ~ 100 kV	TAVANIR Instruction HD 626-6
326.	Low Voltage Aerial Bundled Cables	Impulse test on cores	Qualitative 0 ~ 240 KV	TAVANIR Instruction HD 626-6
327.		Insulation resistance measurement	Quantitative 0.12 MΩ ~ 5 TΩ	TAVANIR Instruction IEC 60502-1 ISIRI 3569-1
328.		Diameter of conductor	Quantitative 0.01 ~ 150 mm	TAVANIR Instruction
329.		lay ratio and direction of lay	Quantitative 0.1 mm ~ 1000 mm	TAVANIR Instruction
330.		Measurement of thickness of insulation	Quantitative 0.01 ~ 20 mm	TAVANIR Instruction IEC 60811-201 INSO 5525-201

No.	Object of the test	The defining characteristic	Range	Test method
331.		Resistance of conductor	Quantitative 60 µΩ ~ 100 kΩ	TAVANIR Instruction IEC 60228 ISIRI 3084
332.		Mechanical properties of insulation before and after ageing	Quantitative Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	TAVANIR Instruction IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
333.	Low Voltage Aerial Bundled Cables	Hot set test	Quantitative Elongation: 0 ~ 300 % 40 ~ 200 ^{0}C	TAVANIR Instruction IEC 60811-507 INSO 5525-507
334.		Shrinkage test	Quantitative 40 ~ 200 ^{0}C	TAVANIR Instruction IEC 60811-502 INSO 5525-502
335.	Low Voltage Aerial Bundled Cables	Measurement of carbon black content of XLPE insulation	Quantitative Mass: 0.0001~120 g	TAVANIR Instruction IEC 60811-605 INSO 5525-605
336.		Resistance of the insulation to weather conditions	Quantitative HD 626	TAVANIR Instruction HD 626-2
337.		Piercing test for insulation material	Quantitative 0 ~ 20 s	TAVANIR Instruction HD 626-2
338.		Mass of zinc	Quantitative 0.0001 ~ 120 gr	TAVANIR Instruction EN 10244-2
339.		Tensile strength of messenger core wires	Quantitative Tensile: 300 ~ 5000 N/mm^2	TAVANIR Instruction EN 50189 INSO 19683
340.		Torsion	Quantitative ----	TAVANIR Instruction EN 50189 INSO 19683
341.		Wrapping test	Qualitative ----	TAVANIR Instruction EN 50189 INSO 19683
342.		Testing of adherence of insulation on messenger conductor (T_g)	Quantitative 20 ~ 500 N	TAVANIR Instruction HD 626-2
343.	Heat resistant silicone insulated cables Rated voltages up to and including 450/750 V	Electrical resistance of conductors	Quantitative 60 µΩ ~ 100 kΩ	IEC 60245-3 INSO 1926-3 IEC 60228 ISIRI 3084
344.	Heat resistant silicone insulated cables Rated voltages up to and including 450/750 V	Voltage test on completed cable	Qualitative 0 ~ 100 kV	IEC 60245-2,3 INSO 1926-2,3
345.		Measurement of thickness of insulation	Quantitative 0.01 ~ 20 mm	IEC 60245-1,3 INSO 1926-1,3 IEC 60811-201 INSO 5525-201
346.		Measurement of Overall diameter and ovality	Quantitative 0. 01 ~ 150 mm	IEC 60245-2,3 INSO 1926-2,3 IEC 60811-203 INSO 5525-203
347.		Mechanical	Quantitative	IEC 60245-3

No.	Object of the test	The defining characteristic	Range	Test method
		properties of insulation before and after ageing	Tensile: 2.5~ 125 N/mm^2 Elongation: 0 ~ 1000 %	INSO 1926-3 IEC 60811-401 INSO 5525-401 IEC 60811-501 INSO 5525-501
348.		Hot set test	Quantitative Elongation: 0 ~ 300 % 40 ~ 200 ^{0}C	IEC 60245-3 INSO 1926-3 IEC 60811-507 INSO 5525-507
349.	Electric cables under fire conditions - Circuit integrity	Circuit integrity under fire condition	Qualitative 220 ~ 1000 V AC Flame temperature 600 ~ 850 ^{0}C	IEC 60331-11 IEC 60331-21 INSO 3082-11 INSO 3082-21
350.	Gases evolved during combustion of materials from cables (pH & Conductivity)	pH & Conductivity	Quantitative Mass: 0.0001~120 g Heating furnace 800 ~ 1000 ^{0}C	IEC 60754-2
351.	Tension and suspension clamps for LV ABC cables	Visual examination	Qualitative ----	EN 50483-1
352.		Dimensional and material verification	Quantitative 0.01 ~ 150 mm	EN 50483-1
353.		Corrosion ageing test	Qualitative ----	EN 50483-6
354.	Tension and suspension clamps for LV ABC cables	Climatic ageing test	Qualitative ----	EN 50483-6
355.		Test for permanent marking	Qualitative ----	EN 50483-1
356.		Tensile test at ambient temperature and breaking load test	Quantitative Force: 1 ~ 100 kN	EN 50483-3
357.		Slip test at ambient temperature	Quantitative Force: 1 ~ 100 kN	EN 50483-3
358.		Bolt tightening test	Qualitative Torque: 1 ~ 135 N.m	EN 50483-3
359.		Dielectrical voltage test	Quantitative Voltage: 0 ~ 5 kV Leakage Current: 0.1 ~ 100 mA	EN 50483-3
360.	Connectors for LV ABC cables	Visual examination	Qualitative ----	EN 50483-1
361.		Dimensional and material verification	Quantitative 0.01 ~ 150 mm	EN 50483-1
362.		Corrosion ageing test	Qualitative ----	EN 50483-6
363.	Connectors for LV ABC cables	Climatic ageing test	Qualitative ----	EN 50483-6
364.		Test for permanent marking	Qualitative ----	EN 50483-1
365.		Bolt tightening test	Qualitative 1 ~ 135 N.m	EN 50483-4
366.		Low temperature assembly test	Quantitative 1 ~ 135 N.m	EN 50483-4

No.	Object of the test	The defining characteristic	Range	Test method
			0 ~ -40 ^{0}C	
367.		Test for mechanical damage to conductors	Qualitative 1 ~ 100 kN	EN 50483-4
368.		Branch cable pull-out test	Quantitative 1 ~ 100 kN	EN 50483-4
369.		Shear head function test	Quantitative 1 ~ 135 N.m -40 ~ 0 ^{0}C 0 ~ 200 ^{0}C	EN 50483-4
370.		Low temperature impact test	Qualitative 0 ~ -40 ^{0}C	EN 50483-4
371.	Connectors for LV ABC cables	Mechanical testing	Qualitative 1 ~ 100 kN	EN 50483-4
372.		Electrical ageing test	Quantitative 50 ~ 300 A 50 ~ 150 ^{0}C	EN 50483-5
373.		Dielectrical voltage test	Quantitative 0 ~ 5 kV 0.1 ~ 100 mA	EN 50483-4
374.	Accessories for covered conductors	Visual examination	Qualitative ----	EN 50397-2
375.		Dimensional and material verification	Quantitative 0.01 ~ 150 mm	EN 50397-2
376.		Marking	Qualitative ----	EN 50397-2
377.		Damage and failure load test	Qualitative 1 ~ 100 kN	EN 50397-2
378.		Slip test at ambient temperature	Quantitative 1 ~ 100 kN	EN 50397-2
379.		Tensile test at ambient temperature	Quantitative 1 ~ 100 kN	EN 50397-2
380.		Clamp bolt tightening test	Qualitative 1 ~ 135 N.m	EN 50397-2
381.		Shear head function test	Quantitative 1 ~ 135 N.m -40 ~ 0 ^{0}C 0 ~ 200 ^{0}C	EN 50397-2
382.		Damage to the main conductor test	Qualitative 1 ~ 100 kN	EN 50397-2
383.		Branch cable pull out test	Quantitative 1 ~ 100 kN	EN 50397-2
384.	Accessories for covered conductors	Low temperature assembly test	Quantitative Tor1 ~ 135 N.m 0 ~ -40 ^{0}C	EN 50397-2
385.	Accessories for covered conductors	Hot dip galvanizing test	Quantitative 10 ~ 2000 µm	EN 50397-2
386.		Water-tightness test	Qualitative ----	EN 50397-2
387.		Electrical ageing test	Quantitative 50 ~ 300 A 50 ~ 150 ^{0}C	EN 50397-2 EN 50483-5

No.	Object of the test	The defining characteristic	Range	Test method
388.		Corrosion ageing test	Qualitative ----	EN 50397-2 EN 50483-6
389.		Climatic ageing test	Qualitative ----	EN 50397-2 EN 50483-6
390.	Overhead lines tension clamps	Visual examination	Qualitative ----	IEC 61284
391.		Dimensional verification	Quantitative 0.01 ~ 150 mm	IEC 61284
392.		Galvanizing thickness	Quantitative 10 ~ 2000 µm	IEC 61284
393.		Damage and failure load test	Qualitative 1 ~ 100 kN	IEC 61284
394.		Slip test	Quantitative 1 ~ 100 kN	IEC 61284
395.		Clamp bolt tightening test	Qualitative 1 ~ 135 N.m	IEC 61284
396.		Tensile test	Quantitative 1 ~ 100 kN	IEC 61284
397.	Overhead lines tension clamps	Damage and failure load test of the attachment point used during erection	Qualitative 1 ~ 100 kN	IEC 61284
398.	Compression and mechanical connectors for power cables	Mechanical test	Quantitative 1 ~ 100 kN	IEC 61238-1
399.		Electrical ageing test	Quantitative 50 ~ 300 A 50 ~ 150 ^{0}C	IEC 61238-1
400.	Consoles and cross-arm	Dimensional	Quantitative 0.01 ~ 150 mm	TAVANIR Instruction ISIRI 4477-1 ISIRI 13968-1 DIN 267-10
401.		Mechanical	Quantitative 1 ~ 100 kN	DIN 267-10 ANSI C135.6 AS 3766
402.		Galvanizing thickness	Quantitative 10 ~ 2000 µm	ASTM A153

No.	Object of the test	The defining characteristic	Range	Test method
EMC Laboratory				
403.	Domestic Appliances: Electrical Electrical/Electronic Products Electro-Mechanical Devices IT Equipment Measuring Equipment Medical/Dental Equipment Office Equipment: Electrical Radio and TV Equipment Security Equipment Telecommunications Equipment Luminaires multimedia equipment Medical equipment Electrical equipment for measurement, control and laboratory use Residential, commercial and light-industrial environments equipment Industrial environments equipment Lifts, escalators and moving walks Measuring relays and protection equipment Electricity metering equipment (a.c.) Rotating electrical machines Railway applications-Signaling and Telecommunications Apparatus	Conducted Emissions	Quantitative 9 kHz to 30 MHz	EN 55011 CISPR 11 ISIRI 4145 EN 55013 EN 55014-1 CISPR 14-1 EN 55015 CISPR 15 EN55022 CISPR 22 CISPR 32 EN 55032
404.		Radiated Emissions Electric Field	Quantitative 30 MHz to 6 GHz	EN 55011 CISPR 11 EN 55013 EN 55014-1 CISPR 14-1 EN 55015 CISPR 15 EN 55022 CISPR 22 CISPR 32 EN 55032 BS EN 12015

No.	Object of the test	The defining characteristic	Range	Test method
405.	Programmable controllers Signalling on low-voltage electrical installations Equipment intended for use power station and substation environments Household appliances, electric tools and similar apparatus RTUs Water meters intended for the metering of cold potable water and hot water Telecommunication network equipment Radio equipment and services Sound and television broadcast receivers equipment Equipment for general lighting purposes Low-voltage switchgear and controlgear assemblies High-voltage switchgear and controlgear Gas meters CCTV systems, Alarm Systems, Fire detection and fire alarm systems Uninterruptible power systems (UPS) Arc welding equipment Adjustable speed electrical power drive systems DC Power supplies, AC/DC adapters and battery chargers	Mains Harmonic Emissions	Quantitative 50 Hz to 2.4 kHz	EN 61000-3-2 IEC 61000-3-2 ISIRI 7260-3-2
406.		Mains Flicker Emissions	Quantitative -	EN 61000-3-3 IEC 61000-3-3 ISIRI IEC 7260-3-3

No.	Object of the test	The defining characteristic	Range	Test method
407.	Domestic Appliances: Electrical Electrical/Electronic Products Electro-Mechanical Devices IT Equipment Measuring Equipment Medical/Dental Equipment Office Equipment: Electrical Radio and TV Equipment Security Equipment Telecommunications Equipment Luminaires multimedia equipment Medical equipment Electrical equipment for measurement, control and laboratory use Residential, commercial and light-industrial environments equipment Industrial environments equipment Lifts, escalators and moving walks Measuring relays and protection equipment Electricity metering equipment (a.c.) Rotating electrical machines Railway applications-Signaling and Telecommunications Apparatus Programmable controllers Signalling on low-voltage electrical installations Equipment intended	Conducted RF Immunity	Qualitative 150 kHz to 230 MHz 1 to 10 Vrms	EN 61000-4-6 IEC 61000-4-6 ISIRI 7260-4-6
408.		Radiated RF Immunity	Qualitative 1-10 V/m 80 MHz to 6 GHz	EN 61000-4-3 IEC 61000-4-3 ISIRI 7260-4-3
409.		Immunity to Fast Bursts Transients/	Qualitative 0 to 4.4 kV	EN 61000-4-4 IEC 61000-4-4 ISIRI 7260-4-4
410.		Immunity to Mains Surge	Qualitative 0 to 4.4 kV	EN 61000-4-5 IEC 61000-4-5 ISIRI 7260-4-5

No.	Object of the test	The defining characteristic	Range	Test method
411.	for use power station and substation environments Household appliances, electric tools and similar apparatus RTUs Water meters intended for the metering of cold potable water and hot water Telecommunication network equipment Radio equipment and services Sound and television broadcast receivers equipment Equipment for general lighting purposes Low-voltage switchgear and controlgear assemblies High-voltage switchgear and controlgear Gas meters CCTV systems, Alarm Systems, Fire detection and fire alarm systems Uninterruptible power systems (UPS) Arc welding equipment Adjustable speed electrical power drive systems DC Power supplies, AC/DC adapters and battery chargers	Electrostatic Discharge	Qualitative 0 to 16 kV	EN 61000-4-2 IEC 61000-4-2 ISIRI 7260-4-2
412.		Voltage Dips, Interruptions and Variations	Qualitative AC & DC power ports	EN 61000-4-11 IEC 61000-4-11 ISIRI 7260-4-11 IEC 61000-4-29
413.		Power-Frequency Magnetic Fields (Immunity)	Qualitative Field strength: 0 to 30 A/m 0 to 0.5 mT	EN 61000-4-8 IEC 61000-4-8 ISIRI 7260-4-8
414.	Domestic Appliances: Electrical Electrical/Electronic Products Electro-Mechanical Devices IT Equipment Measuring Equipment Medical/Dental Equipment Office Equipment: Electrical Radio and TV Equipment Security Equipment	These generic and product specific standards are included but limited to those referenced standards that are explicitly listed in rows 403 to 413	--	IEC 61000-6-1 ISIRI 7260-6-1 IEC 61000-6-2 ISIRI 7260-6-2 IEC 61000-6-3 ISIRI 7260-6-3 IEC 61000-6-4 IEC 61000-6-5 ISIRI 7260-6-5 CISPR 16-1 CISPR 16-2 CISPR 24 EN 55024 EN 55014-1 CISPR 14-1

No.	Object of the test	The defining characteristic	Range	Test method
	Telecommunications Equipment Luminaires multimedia equipment Medical equipment Electrical equipment for measurement, control and laboratory use Residential, commercial and light-industrial environments equipment Industrial environments equipment Lifts, escalators and moving walks Measuring relays and protection equipment Electricity metering equipment (a.c.) Rotating electrical machines Railway applications-Signaling and Telecommunications Apparatus Programmable controllers Signalling on low-voltage electrical installations Equipment intended for use power station and substation environments Household appliances, electric tools and similar apparatus RTUs Water meters intended for the metering of cold potable water and hot water Telecommunication network equipment Radio equipment and services Sound and television broadcast receivers equipment Equipment for general			EN 55014-2 CISPR 14-2 EN 55103-1 EN 55103-2 EN 60601-1-2 IEC 60601-1-2 EN 61204-3 IEC 61204-3 EN 61326-2-3 EN 50130-4 EN 50131-1 EN 55024 EN 50270 EN 50293 EN 60730-1 EN 60669-2-1 EN 61547 IEC 61547 EN 50270 EN 55035 EN 50121-3-2 EN 60669-2-1 BS EN 50130-4 EN 61326-1 IEC 61326-1 INSO-IEC 61326-2-1 IEC 60255-26 (subclass 7.1) (subclass 7.2) ISIRI 4221-26 IEC 62052-11 (subclass 7.5) IEC 60034-1 (subclass 13) BS EN 50121 IEC 61131-2 (subclass 8,9) IEC 61000-3-8 INSO-IEC 61000-3-8 IEC 61000-6-5 INSO IEC TS 61000-6-5 IEC 60870-2-1 (subclass 5) OIML R 49-2 (subclass 8.5, 8.8 to 8.16) ETSI EN 300 386 ETSI EN 301 489-1 INSO (ISIRI) 9941-1 ETSI EN 301 489-3 INSO (ISIRI) 9941-3 ETSI EN 301 489-4 INSO (ISIRI) 9941-4

No.	Object of the test	The defining characteristic	Range	Test method
	lighting purposes Low-voltage switchgear and controlgear assemblies High-voltage switchgear and controlgear Gas meters CCTV systems, Alarm Systems, Fire detection and fire alarm systems Uninterruptible power systems (UPS) Arc welding equipment Adjustable speed electrical power drive systems DC Power supplies, AC/DC adapters and battery chargers			ETSI EN 301 489-17 INSO (ISIRI) 9941-17 ETSI EN 301 489-19 ETSI EN 301 489-10 ETSI EN 301 489-6 CISPR 13 CISPR 20 EN 55015 IEC 61547 IEC 61439-1 (Annex J) IEC 62271-1 (subclass 7.9 expect 7.9.2.3) OIML R 137-1&2 (subclass A.6, A.7, A.8) IEC 62599-2 INSO-IEC 62599-2 IEC 62040-2 INSO-IEC 62040-2 IEC 60974-10 IEC 61800-3 IEC 61204-3 ISIRI 6128-3
IP Laboratory				
415.	Luminaire Meter Rotating electrical machines LV Panel & MV pane& Empty panel High-voltage switchgear and controlgear & Other equipments	IP 1X~6X	Qualitative Force:1 N ~ 50 N Dust chamber Dimension :3.5*2.5*2.5 m3	IEC 60529 ISIRI 2868
416.		IP X1~X2	Qualitative Dirp box dimension :180 * 180 Cm 1~3 mm/min	IEC 60529 ISIRI 2868
417.		IP X3~X4	Qualitative (Spray nozzle): 10 L/min	IEC 60529 ISIRI 2868
418.			Qualitative Oscillating tube:0,07 l/min ±5% per hole, multiplied by number of holes	
419.		IP X5	Qualitative Water jet hose nozzle:12,5 l/min ± 5%	IEC 60529 ISIRI 2868
420.		IP X6	Qualitative Water jet hose nozzle:100 l/min ± 5%	IEC 60529 ISIRI 2868
421.	Luminaire Meter Rotating electrical machines LV Panel & MV pane&	IP X7	Qualitative Immersion tank Water-level on enclosure: 0,15 m above top 1 m above bottom	IEC 60529 ISIRI 2868

No.	Object of the test	The defining characteristic	Range	Test method
422.	Empty panel High-voltage switchgear and controlgear & Other equipments	IP X8	Qualitative Immersion tank Water-level: by agreement	IEC 60529 ISIRI 2868
423.		Mechanical impacts (IK code)	Qualitative IK01~IK10 Impact energy, J: 0.14 J ~ 20 J	IEC 62262 ISIRI 9936
Information Technology Laboratory				
424.	Information Technology equipment's	Input current	Quantitative Current: MIN: 500 µ Aac MAX: 3000 Aac MIN: 500 µ Adc MAX: 10 Adc	IEC 60950-1 ISIRI 5233-1
425.			Quantitative Power: MIN: 0.50 W MAX: 2000 MW Voltage:10 Vac to 300 Vac	
426.		Verification of durability	Qualitative ----	IEC 60950-1 ISIRI 5233-1
427.		Access to energized part	Qualitative 30 N MIN: 1 mm MAX: 80 mm	IEC 60950-1 ISIRI 5233-1
428.		Energy hazard	Quantitative Voltage: MIN:0.000 Vac MAX:1000.0 Vac MIN:0.000 Vdc MAX:1000.0 Vdc Capacitance :MIN:0.000 nF MAX:100.0 mF	IEC 60950-1 ISIRI 5233-1
429.	Information Technology equipment's	Protection by basic insulation	Qualitative MIN: 0.1 kV MAX: 5 kV	IEC 60950-1 ISIRI 5233-1
430.		Limited power source	Quantitative 10 V to 300 V MIN: 1.0 MW MAX: 20.00 MW	IEC 60950-1 ISIRI 5233-1
431.		Protective earthing	Quantitative CURRENT: 1A to 30 A Voltage: 1V to 19 V	IEC 60950-1 ISIRI 5233-1
432.			Quantitative resistance MIN:0.000 Ω MAX: 500 mΩ	
433.		Earthing conductor	Quantitative MIN: 1 mm MAX: 150 mm	IEC 60950-1 ISIRI 5233-1

No.	Object of the test	The defining characteristic	Range	Test method
434.	Information Technology equipment's	Bounding conductor	Quantitative MIN: 1 mm MAX: 150 mm	IEC 60950-1 ISIRI 5233-1
435.		Resistance to earthing conductor and their termination	Quantitative Current: 1A to 30 A Voltage: 1V to 19 V	IEC 60950-1 ISIRI 5233-1
436.		Protective earthing and bonding terminal	Quantitative MIN: 1 mm MAX: 150 mm	IEC 60950-1 ISIRI 5233-1
437.		Verification of protection requirement	Qualitative ----	IEC 60950-1 ISIRI 5233-1
438.		Inadvertent reactivation	Qualitative MIN: 79.8 mm MAX: 80.2 mm	IEC 60950-1 ISIRI 5233-1
439.		Contact gaps	Quantitative MIN: 1 mm MAX: 150 mm	IEC 60950-1 ISIRI 5233-1
440.		Electric strength	Qualitative MIN: 0.1kV MAX: 5 kV	IEC 60950-1 ISIRI 5233-1
441.		Humidity conditioning	Qualitative MIN: 20 °C MAX: 30 °C MIN: 91 % RH MAX: 95 % RH	IEC 60950-1 ISIRI 5233-1
442.	Information Technology equipment's	Clearance and creepage distance and distance through insulation	Quantitative MIN: 1 mm MAX: 150 mm MIN: 0.1 kV MAX: 10 kV	IEC 60950-1 ISIRI 5233-1
443.		Insulation of conductors	Qualitative MIN: 0.1 kV MAX: 5kV	IEC 60950-1
444.		Stability Angle measuring device	Qualitative MIN: 5 °C MAX: 180 °C	IEC 60950-1 ISIRI 5233-1
445.		Steady force	Qualitative MIN: 10 N MAX: 250 N	IEC 60950-1 ISIRI 5233-1
446.		Impact	Qualitative MIN: 475 g MAX: 525 g Up to 1.3 m	IEC 60950-1 ISIRI 5233-1
447.		Drop	Qualitative ----	IEC 60950-1 ISIRI 5233-1
448.		Stress relief test	Qualitative 20°C to 220 °C	IEC 60950-1 ISIRI 5233-1
449.	Information Technology equipment's	Design and concentration	Qualitative ----	IEC 60950-1 ISIRI 5233-1
450.		Protection against hazardous moving fan	Quantitative r(mm): MIN: 0 mm	IEC 60950-1 ISIRI 5233-1

No.	Object of the test	The defining characteristic	Range	Test method
			Max: 300 mm m(kg): MIN: 0.0 g Max: 5000.0 g N((r/min): MIN: 5 r/min Max: 99999 r/min	
451.		Verification of temperature	Quantitative ambient to 250 °C	IEC 60950-1 ISIRI 5233-1
452.		Temperature limit for material	Quantitative ambient to 250 °C	IEC 60950-1 ISIRI 5233-1
453.		Touch temperature limit	Quantitative ambient to 250 °C	IEC 60950-1 ISIRI 5233-1
454.		Material (Resistance to fire)	Qualitative ambient to 960 °C	IEC 60950-1 ISIRI 5233-1
455.		Resistance to abnormal heat	Qualitative ambient to 220 °C 0 mm to 150 mm	IEC 60950-1 ISIRI 5233-1
456.	Information Technology equipment's	Enclosure openings	Qualitative ----	IEC 60950-1 ISIRI 5233-1
457.		Touch current and protective conductor current	Quantitative MIN: 0.00 mA Max: 20 mA	IEC 60950-1 ISIRI 5233-1
458.		Electric strength	Qualitative MIN: 0.1 kV MAX: 5 kV	IEC 60950-1 ISIRI 5233-1
459.		Fault conditions	Qualitative ----	IEC 60950-1 ISIRI 5233-1
460.		Impulse steady state	Qualitative MIN: 1 kV MAX: 10 kV	IEC 60950-1 ISIRI 5233-1
Safety Laboratory				
461.	Household and similar electrical appliances /Particular requirements for pumps	Classification	Qualitative ----	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
462.	Household and similar electrical appliances /Particular requirements for pumps	Verification of marking and instruction	Qualitative ----	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
463.		Protection against electric shocks	Quantitative 1 N MIN: 1 mm MAX: 80 mm 0-1000 Vac 0-1000 Vdc	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
464.		Power input current	Quantitative MIN: 500 µ Aac MAX: 3000 Aac MIN: 500 µ Adc MAX: 10 Adc MIN: 0.50 W	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41

No.	Object of the test	The defining characteristic	Range	Test method
			MAX: 2000 MW 0 to 300 Vac 0 to 300 Vdc	
465.		Heating temperature rise	Quantitative Ambient to 500 °C	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
466.	Household and similar electrical appliances /Particular requirements for pumps	Leakage current electric strength at operating temperature	Quantitative MIN: 0.00 mA MAX: 20.0 mA MIN: 0.100 kV MAX: 5.000 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
467.		Transient over voltage	Qualitative MIN: 1 kV MAX: 12.5 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
468.		Moisture resistance	Qualitative 20 °C to 30 °C 10 % RH to 95 % RH 2000mm ×2000mm ×3000mm IP X1, X2, X3, X4, X5, X6, X7, X8	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
469.		Leakage current electric strength and insulation	Quantitative MIN: 0.00 mA MAX: 20.0 mA MIN: 0.100 kV MAX: 5.000 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
470.	Household and similar electrical appliances /Particular requirements for pumps	Overload protection of transformers and associated circuits	Quantitative MIN: 500 µAac MAX: 3000 Aac MIN:0.000 Vac MAX:1000.0 Vac ambient to 500 °C	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
471.	Household and similar electrical appliances /Particular requirements for pumps	Endurance	Qualitative MIN: 500 µAac MAX: 3000 Aac MIN:0.000 Vac MAX:1000.0 Vac	IEC 60335-1 Clause 18 ISIRI 1562-1
472.		Abnormal operation	Qualitative MIN: 500 µAac MAX: 3000 Aac MIN:0.000 Vac MAX:1000.0 Vac ambient to 500 °C	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
473.		Stability and mechanical hazards	Qualitative MIN: 5 °C MAX: 180 °C	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
474.		Mechanical strength	Qualitative 0.5 J 10 N to 50 N MIN: 1 kV MAX: 12.5 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
475.		Construction	Qualitative 10 N to 50 N	IEC 60335-1 ISIRI 1562-1

No.	Object of the test	The defining characteristic	Range	Test method
			MIN: 0 N.m MAX: 25 N.m	IEC 60335-2-41 ISIRI 1562-2-41
476.	Household and similar electrical appliances /Particular requirements for pumps	Internal wiring	Qualitative MIN: 0.100 kV MAX: 5.000 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
477.		Components	Qualitative ----	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
478.		Supply connection and external flexible cords	Qualitative MIN: 0.100 kV MAX: 5.000 kV	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
479.		Terminals for external conductors	Qualitative MIN: 5 N MAX: 50 N	IEC 60335-1 Clause 26 ISIRI 1562-1 IEC 60335-2-41 Clause 26 ISIRI 1562-2-41
480.	Household and similar electrical appliances /Particular requirements for pumps	Provision for earthing	Quantitative 0.1-25 A (50, 60) Hz U : <10 V/ (50, 60) Hz MIN:0.000 Ω MAX: 10 Ω	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
481.		Screws and connections	Qualitative MIN: 0 N.m MAX: 25 N.m	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
482.		Clearances, creepage distances and solid insulation	Quantitative MIN: 0.00 mm MAX: 150 mm	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
483.		Resistance to heat and fire	Qualitative Up to 960 °C Up to 250 °C 0 to 2.5 mm	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
484.		Resistance to rusting	Qualitative ----	IEC 60335-1 ISIRI 1562-1 IEC 60335-2-41 ISIRI 1562-2-41
485.	electrical equipment for measurement, control, and laboratory use	Single Fault condition	Quantitative 0 V to 300 V 0.0 to 20.00 mA Ambient to 500 °C	IEC 61010-1 ISIRI 4232
486.		Verification of Marking and documentation	Qualitative ----	IEC 61010-1 ISIRI 4232
487.		Durability of Markings	Qualitative ----	IEC 61010-1 ISIRI 4232
488.		Protection against electric shock	Quantitative 0 V to 100 V	IEC 61010-1 ISIRI 4232

No.	Object of the test	The defining characteristic	Range	Test method
489.		Determination of Accessible Parts	Qualitative 10 N; 4 mm; 10 cm 10 N; 1 mm; 180 mm	IEC 61010-1 ISIRI 4232
490.		Protective Bonding	Quantitative 0.1-25 A (50, 60) Hz U : <10 V/ (50, 60) Hz MIN:0.000 Ω MAX: 10 Ω	IEC 61010-1 ISIRI 4232
491.	electrical equipment for measurement, control, and laboratory use	Insulation requirements	Quantitative MIN: 1 mm MAX: 150 mm MIN: 0.100 KV MAX: 5.000 KV	IEC 61010-1 ISIRI 4232
492.		Voltage dielectric strength insulation resistance	Quantitative MIN: 0.100 KV MAX: 5.000 KV	IEC 61010-1 ISIRI 4232
493.		Protection against mechanical hazards	Qualitative ----	IEC 61010-1 ISIRI 4232
494.		Resistance to mechanical stress	Qualitative ----	IEC 61010-1 ISIRI 4232
495.		Drop - Wooden Studs	Qualitative Up to 1 m	IEC 61010-1 ISIRI 4232
496.		Protection against the spread of fire	Qualitative ----	IEC 61010-1 ISIRI 4232
497.		Equipment temperature limit and resistance to heat	Quantitative ambient to 250 °C	IEC 61010-1 ISIRI 4232
498.	electrical equipment for measurement, control, and laboratory use	Clearance & creepage distances	Quantitative MIN: 1 mm MAX: 150 mm MIN: 0.100 KV MAX: 5.000 KV	IEC 61010-1 ISIRI 4232
499.		Protection against hazards from fluids	Qualitative IP 1X, 2X, 3X, 4X, 5X, 6X IP X1, X2, X3, X4, X5, X6, X7, X8	IEC 61010-1 ISIRI 4232
500.		Specially protected equipment	Qualitative ----	IEC 61010-1 ISIRI 4232
501.		Acoustic energy	Quantitative 30 to 130 dB	IEC 61010-1 ISIRI 4232
502.		Motor components and subassemblies	Quantitative 0 V to 300 V ambient to 2 50 °C	IEC 61010-1 ISIRI 4232
503.		Transient overvoltage limiting device	Qualitative 0.2 to 10 kV	IEC 61010-1 ISIRI 4232
504.		Protection by Interlocks	Qualitative ----	IEC 61010-1 ISIRI 4232
505.		Hazards resulting from application	Qualitative ----	IEC 61010-1 ISIRI 4232
MCB Laboratory				

No.	Object of the test	The defining characteristic	Range	Test method
506.	Miniature Circuit Breakers	Verification of Marking	Qualitative ----	IEC 60898-1
507.	Miniature Circuit Breakers	Reliability of screws, current-carrying parts and connections	Qualitative ----	IEC 60898-1
508.		Reliability of terminals for external conductors	Qualitative ----	IEC 60898-1
509.		Protection against electric shock	Qualitative 1-65 V	IEC 60898-1
510.		Dielectric properties and isolating capability	Qualitative 15 °C to 85 °C 20 % to 95 % R H 0.1 kV to 5 kV 150 kΩ to 450 GΩ at 500 V	IEC 60898-1
511.		Temperature-rise	Qualitative 2 A - 63 A 10 °C to 500 °C	IEC 60898-1
512.		28-day test	Qualitative 10 V - 400 V 2 A - 63 A	IEC 60898-1
513.		Tripping characteristic	Qualitative 2 A - 63 A	IEC 60898-1
514.	Miniature Circuit Breakers	Mechanical and electrical endurance	Qualitative 10 V - 400 V 2 A - 63 A	IEC 60898-1
515.		Resistance to mechanical shock and impact	Qualitative ----	IEC 60898-1
516.		Resistance to Heat and Fire, flame and ignition Glow Wire Apparatus Ball Pressure Apparatus	Qualitative 50 °C to 960 °C 50°C to 250 °C 1 mm to 150 mm	IEC 60898-1
517.		Resistance to rusting	Qualitative ----	IEC 60898-1
High Voltage Laboratory				
518.	All electrical equipment with Un above 1 kV	Dry Power Frequency Voltage Tests	Qualitative AC voltage: 0 to 100 kV	IEC 60060-1 IEEE 4
519.		Lightning Impulse Voltage Tests	Qualitative Impulse voltage: 0 to 240 kV	IEC 60060-1 IEEE 4
520.		Partial discharge measurements	Quantitative AC voltage: 0 to 100 kV	IEC 60270
Insulator Laboratory				
521.	Polymeric HV insulators	Tracking and erosion test-1000h salt fog test	Qualitative AC voltage: 0-30 kV	IEC 62217 ISIRI 18232
522.	Insulators for overhead lines – Composite	Dry lightning impulse withstand voltage	Qualitative Impulse voltage: 0 to 240 kV	IEC 61109, ISIRI 19784

No.	Object of the test	The defining characteristic	Range	Test method
	suspension and tension insulators for a.c. systems with a nominal voltage greater than 1000 V	test		IEC 60383-2
523.	Insulators for overhead lines – Composite suspension and tension insulators for a.c. systems with a nominal voltage greater than 1000 V	Wet power frequency test	Qualitative AC voltage: 0 to 100 kV	IEC 61109 ISIRI 19784 IEC 60383-2
524.		Verification of dimensions	Quantitative 0.1 mm to 2 m	IEC 61109 ISIRI 19784
525.		Verification of specified mechanical load (SML)	Qualitative 1 kN to 100 kN	IEC 61109 ISIRI 19784
526.		Galvanizing test	Quantitative 1 µm to 120 mm	IEC 61109 ISIRI 19784 IEC 60383-1
527.		Mechanical routine test	Qualitative 1 kN to 100 kN	IEC 61109 Clause 13.1 ISIRI 19784
528.	Insulators for overhead lines - Composite line post insulators for A.C. systems with a nominal voltage greater than 1000 V	Dry lightning impulse withstand voltage test	Qualitative Impulse voltage: 0 to 240 kV	IEC 61952 Clause 11.1 IEC 60383-2
529.		Wet power frequency test	Qualitative AC voltage: 0 to 100 kV	IEC 61952 Clause 11.1 IEC 60383-2
530.		Mechanical tests	Qualitative 1 kN to 100 kN	IEC 61952
531.		Verification of dimensions	Quantitative 0.1 mm to 2 m	IEC 61952
532.		Verification of the SCL	Qualitative 1 kN to 100 kN	IEC 61952
533.		Galvanizing test	Quantitative 1 µm to 120 mm	IEC 61952 IEC 60383-1
534.	Insulators for overhead lines - Composite line post insulators for A.C. systems with a nominal voltage greater than	Tensile load test	Qualitative 1 kN to 100 kN	IEC 61952

No.	Object of the test	The defining characteristic	Range	Test method
	1000 V			
535.	Insulator strings and insulator sets for overhead lines with a nominal voltage above 1000 V	Lightning impulse voltage tests	Qualitative Impulse voltage: 0 to 240 kV	IEC 60383-2
536.	Ceramic or glass insulator units for overhead lines with a nominal voltage above 1000 V	Lightning impulse voltage tests	Qualitative Impulse voltage: 0 to 240 kV	IEC 60383-1 IEC 60060-1
537.		Wet power frequency voltage test	Qualitative AC voltage: 0 to 100 kV	IEC 60383-1 IEC 60060-1
538.		Puncture withstand test	Qualitative AC voltage: 0 to 100 kV	IEC 60383-1
539.		Verification of dimensions	Quantitative 0.1 mm to 2 m	IEC 60383-1
540.		Mechanical failing load test	Quantitative 1 kN to 100 kN	IEC 60383-1
541.		Temperature cycle test	Qualitative Mechanical load: 1 kN to 100 kN AC voltage: 0 to 100 kV	IEC 60383-1
542.		Thermal shock test	Qualitative Temperature: 40 °C to 200 °C	IEC 60383-1
543.		Galvanizing test	Quantitative 1 µm to 120 mm	IEC 60383-1
544.	Indoor post insulators of organic material for systems with nominal voltages greater than 1000 V up to but not including 300kV	Dry lightning impulse withstand voltage test	Qualitative Impulse voltage: 0 to 240 kV	IEC 60660 IEC 60060-1
545.		Dry power frequency withstand voltage	Qualitative AC voltage: 0 to 100 kV	IEC 60660 IEC 60060-1

No.	Object of the test	The defining characteristic	Range	Test method
546.	Indoor post insulators of organic material for systems with nominal voltages greater than 1000 V up to but not including 300kV	Partial discharge extinction voltage test	Quantitative Ac voltage: 0 to 100 kV	IEC 60660 IEC 60270
547.		Lightning impulse puncture test	Qualitative Impulse voltage: 0 to 240 kV	IEC 60660 IEC 60273
548.		Mechanical failing load test	Qualitative 1 kN to 100 kN	IEC 60660 IEC 60273
549.		Test for deflection under load at normal ambient temperature conditions	Quantitative 1 kN to 100 kN	IEC 60660 IEC 60273
550.		Water absorption test	Quantitative AC voltage: 0 to 100 kV Temperature: 1 °C to 100 °C	IEC 60660
551.	Indoor post insulators of organic material for systems with nominal voltages greater than 1000 V up to but not including 300kV	Temperature cycle test	Qualitative Mechanical load: 1 kN to 100 kN AC voltage for partial discharge test: 0 to 100 kV	IEC 60660 IEC60270
552.		Verification of dimensions	Quantitative 0.1 mm to 2 m	IEC 60660 IEC 60273
553.		Visual examination	Qualitative Comply with the requirement/ not comply with the requirement	IEC 60660
554.		Mechanical routine test	Qualitative Mechanical load: 1 kN to 100 kN	IEC 60660
555.		Electrical routine test and partial discharge measurement	Quantitative AC voltage: 0 to 100 kV Ac voltage for partial discharge test: 0 to 100 kV	IEC 60660 IEC 60273 IEC 60270
Voltage transformer Laboratory				
556.	Inductive Voltage Transformers	Temperature-rise test	Quantitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1

No.	Object of the test	The defining characteristic	Range	Test method
557.	Inductive Voltage Transformers	Impulse voltage test on primary terminals	Qualitative Impulse voltage: 0 to 240 kV	IEC 61869-3 IEC 61869-1
558.		Test for accuracy	Quantitative AC voltage: 0 to 30 kV	IEC 61869-3 IEC 61869-1
559.		Verification of the degree of protection by enclosures	Qualitative Refer to IP lab. (rows 415 to 423)	IEC 61869-3 IEC 61869-1 IEC 60529 IEC 60068-2-75
560.		Power-frequency voltage withstand tests on primary terminals	Qualitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1 IEC 60060
561.		Partial discharge measurement	Qualitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1
562.		Power-frequency voltage withstand tests between sections	Qualitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1
563.		Power-frequency voltage withstand tests on secondary terminals	Qualitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1
564.		Verification of markings	Qualitative Comply with the requirement	IEC 61869-1
565.		Measurement of capacitance and dielectric dissipation factor	Quantitative AC voltage: 0 to 100 kV	IEC 61869-3 IEC 61869-1
566.		Short-circuit withstand capability test	Qualitative 0 to 150 A	IEC 61869-3
Rotating Electrical Machines Laboratory				
567.	Rotating Electrical Machines	Load test and determination of efficiency	Quantitative 300 W-7.5 kW	IEC 60034-1 ISIRI 3772-1 IEC 60034-2-1 IEEE 112
568.		Efficiency class	Quantitative 300 W-7.5 kW	IEC 60034-30-1 ISIRI 3772-30-1-1 ISIRI 3772-30-1-2
569.		No load	Quantitative 0-70 A	IEC 60034-1 ISIRI 3772-1 IEEE 112

No.	Object of the test	The defining characteristic	Range	Test method
570.	Rotating Electrical Machines	Noise limits	Quantitative 40-130 dB	IEC 60034-9 ISIRI 3772-9
571.		Temperature rise	Quantitative 300 W-7.5 kW	IEC 60034-1 ISIRI 3772-1 IEEE 112
572.		Insulation resistance	Quantitative 0.12 MΩ-5 TΩ	IEEE 43 IEEE 95 IEEE 62.2
573.		Locked rotor current and apparent power	Quantitative 0-70 A	IEC 60034-12 SIRI 3772-12 IEEE 112
574.		Direction of rotation	Qualitative 0-70 A	IEC 60034-8 ISIRI 3772-8
575.		Withstand voltage	Qualitative 0-100 kV	IEC 60034-1 ISIRI 3772-1 IEEE 95 IEEE 62.2
576.		Winding resistance	Quantitative 60 μΩ - 100 kΩ	IEC 60034-1 IEEE 112 IEEE 118
577.		Break-down torque Pull-up torque	Quantitative 0-70 A	IEC 60034-1 IEC 60034-12 IEEE 112
578.		Safe operation speed	Qualitative 300 W-7.5 kW Up to 400 Hz	IEC 60034-1 ISIRI 3772-1
579.	Rotating Electrical Machines	Momentary excess torque	Qualitative 300 W-7.5 kW	IEC 60034-1 ISIRI 3772-1
580.		Occasional excess current	Qualitative 0-70 A	IEC 60034-1 ISIRI 3772-1
581.		Determination of equivalent circuit	Quantitative 0-70 A	IEEE 112
582.		Dielectric dissipation factor measurement	Quantitative 0-30 kV	IEC 60034-27-3 IEEE 286 EN 50209 IEEE 62.2
583.		Off-line partial discharge measurements	Quantitative 0-100 kV	IEC 60034-27-1 IEEE 1434 IEEE 62.2
584.		On-line partial discharge measurements	Quantitative 0 kHz-20 MHz	IEC 60034-27-2 IEEE 1434 IEEE 62.2
585.		Over-speed	Qualitative 300 W- 7.5 kW Up to 400 Hz	IEC 60034-1 ISIRI 3772-1
586.		Degrees of protection	Qualitative IP 00 – IP 68	IEC 60034-5 ISIRI 3772-5
587.		Mechanical vibration of certain machines	Quantitative 0-1.999 mm 0.5 – 199.9 mm/s 0.5 – 199.9 m/s^2	IEC 60034-14 ISIRI 3772-14

No.	Object of the test	The defining characteristic	Range	Test method
VE and TC Laboratory				
588.	Stator Bars and Coils	Voltage endurance test	Qualitative 0-100 kV	IEEE 1043 IEEE 1553 IEC 60034-18-34
589.		Thermal Cycle test	Qualitative 0-6 kA	IEEE 1310 IEC 60034-18-32

No.	Object of the test	The defining characteristic	Range	Test method
Current Transformer Laboratory				
590.	Current Transformer	Temperature-rise test	Quantitative 0-10 kA	IEC 61869-1 IEC 61869-2
591.		Impulse voltage withstand test on primary terminals	Qualitative 0-240 kV	IEC 61869-1 IEC 61869-2
592.		Test for accuracy	Quantitative Ratio: 1-10000 Phase displacement: 3 min - 200 min	IEC 61869-1 IEC 61869-2
593.		Determination of the secondary winding resistance	Quantitative 60 μΩ - 100 kΩ	IEC 61869-1 IEC 61869-2
594.		Determination of the secondary loop time constant	Quantitative 0- 0.06 S	IEC 61869-1 IEC 61869-2
595.		Power-frequency voltage withstand tests on primary terminals	Qualitative 0-100 kV	IEC 61869-1 IEC 61869-2
596.		Partial discharge measurement	Quantitative 0-100 kV	IEC 61869-1 IEC 61869-2
597.	Current Transformer	Power-frequency voltage withstand tests between sections	Qualitative 0-100 kV	IEC 61869-1 IEC 61869-2
598.		Inter-turn overvoltage test	Qualitative 0-10 kA	IEC 61869-1 IEC 61869-2
599.		Power-frequency voltage withstand tests on secondary terminals	Qualitative 0-100 kV	IEC 61869-1 IEC 61869-2
600.		Measurement of capacitance and dielectric dissipation factor	Quantitative 0-30 kV	IEC 61869-1 IEC 61869-2
601.		Test for rated knee point e.m.f. and exciting current at rated knee point e.m.f.	Quantitative 1 V-4 kV	IEC 61869-1 IEC 61869-2
Lighting & photometric Laboratory				
602.	Fixed general purpose luminaires Recessed luminaires Luminaires for road and street lighting Portable general purpose luminaires Floodlights	Classification of luminaires	Qualitative ----	IEC 60598-1 ISIRI 5920-1 Part 2-1 Part 2-2 Part 2-3 Part 2-4 Part 2-5

No.	Object of the test	The defining characteristic	Range	Test method
	Luminaires with built-in transformers for tungsten filament lamps (See Note.) Portable luminaires for garden use Hand lamps Photo and film luminaires (non-professional) Portable luminaires for children Aquarium luminaires Mains socket-outlet mounted nightlights Ground recessed luminaires Luminaires for cold cathode tubular discharge lamps (neon tubes) and similar equipment Not used at present Not used at present Luminaires for stage lighting, television and film studios (outdoor and indoor) Luminaires for swimming-pools and similar applications Air-handling luminaires (safety requirements) Lighting chains Sealed lighting chains1 Luminaires for emergency lighting Extra low voltage lighting systems for filament lamps Luminaires with limited surface temperatures			Part 2-6 Part 2-7 Part 2-8 Part 2-9 Part 2-10 Part 2-11 Part 2-12 Part 2-13 Part 2-14 Part 2-15 Part 2-16 Part 2-17 Part 2-18 Part 2-19 Part 2-20 Part 2-21 Part 2-22 Part 2-23 Part 2-24
603.	Fixed general purpose luminaires Recessed luminaires Luminaires for road and street lighting Portable general purpose luminaires Floodlights Luminaires with built-in transformers for	Verification of Marking	Qualitative ----	IEC 60598-1 (Sec 3) ISIRI 5920-1
604.		Verification of Construction	Qualitative ----	IEC 60598-1 (Sec 4) ISIRI 5920-1

No.	Object of the test	The defining characteristic	Range	Test method
605.	tungsten filament lamps (See Note.) Portable luminaires for garden use Hand lamps Photo and film luminaires (non-professional) Portable luminaires for children Aquarium luminaires Mains socket-outlet mounted nightlights Ground recessed luminaires Luminaires for cold cathode tubular discharge lamps (neon tubes) and similar equipment Not used at present Not used at present Luminaires for stage lighting, television and film studios (outdoor and indoor) Luminaires for swimming-pools and similar applications Air-handling luminaires (safety requirements) Lighting chains Sealed lighting chains1 Luminaires for emergency lighting Extra low voltage lighting systems for filament lamps Luminaires with limited surface temperatures	External and internal wiring	Qualitative ----	IEC 60598-1 (Sec 5) ISIRI 5920-1
606.		Provision for Earthing	Quantitative 1 A to 30 A 1 V to 25 V	IEC 60598-1 (Sec 7) ISIRI 5920-1
607.		Protection against electric shock	Qualitative 10 V to 65 V	IEC 60598-1 (Sec 8) ISIRI 5920-1
608.		Resistance to dust, solid objects & moisture	Quantitative IP1X-6X IPX1-X8	IEC 60598-1 (Sec 9.2) ISIRI 5920-1
609.		Humidity	Quantitative 15 'C to 85 'C 20% to 95% R H	IEC 60598-1 (Sec 9.3) ISIRI 5920-1
610.		Insulation resistance and electric strength, touch current and protective conductor current	Quantitative 0.1 kV to5 kV 150 kΩ to 450 GΩ at 500 V 50 ηA to 19 mA	IEC 60598-1 (Sec 10) ISIRI 5920-1
611.		Creepage Distances & Clearances	Quantitative 1 mm to150 mm	IEC 60598-1 (Sec 11) ISIRI 5920-1
612.		Endurance & thermal	Quantitative 10 V to 300 V at 50/60Hz 0.01 A to 19 A 10 °C to 300 °C	IEC 60598-1 (Sec 12) ISIRI 5920-1
613.		Resistance to heat, fire and tracking Glow wire apparatus Ball pressure apparatus	Quantitative 50 °C to 960 °C 50 °C to 250 °C 1 mm to 200 mm 10 V to 600 Vac at 50 Hz	IEC 60598-1 (Sec 13) ISIRI 5920-1
614.		Screw terminals	Quantitative 0.2 Nm to 10 Nm 30 N to 100 N	IEC 60598-1 (Sec 14) ISIRI 5920-1

No.	Object of the test	The defining characteristic	Range	Test method
615.		Screw less tom hats and electrical connections	Quantitative 5 N to 50 N	IEC 60598-1 (Sec 15) ISIRI 5920-1
616.	Self-ballasted fluorescent lamps for general lighting services	Verification of Marking	Qualitative ---	IEC 60968 ISIRI 5917
617.		Protection against electric shock - Parts which can Become Accidentally Live	Quantitative 10 V to 65 V	IEC 60968 ISIRI 5917
618.		Insulation resistance and electric Strength after humidity treatment	Quantitative 15 °C to 85 °C 20 % to 95 % R H 0.1 kV to 5 kV 150 kΩ to 450 GΩ at 500 V	IEC 60968 ISIRI 5917
619.		Lamp Cap Temperature rise	Quantitative 10°C to 540 °C	IEC 60968 ISIRI 5917
620.		Resistance to Heat and Fire, flame and ignition Glow Wire Apparatus Ball Pressure Apparatus	Quantitative 50 °C to 960 °C 50°C to 250 °C 1 mm to 200 mm	IEC 60968 ISIRI 5917
621.		Creepage Distance for Caps	Quantitative 1 mm to 200 mm	IEC 60968 ISIRI 5917
622.	Self-ballasted LED lamps for general lighting services by voltage >50 V	Verification of Marking	Qualitative ----	IEC 62560 ISIRI 14434
623.		Resistance To heat fire and tracking Glow Wire Test apparatus Needle Flame test Apparatus	Quantitative 50 °C to 960 °C 50 °C to 250 °C 1 mm to 200 mm 10 V to 600 V at 50 Hz	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13

No.	Object of the test	The defining characteristic	Range	Test method
624.		Screw terminals	Quantitative 0 2 Nm to 10 Nm 30 N to 100 N	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
625.		Screw less terminals and electrical connections	Quantitative 5 N to 50 N	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
626.		Provisions for protective earthing	Quantitative 1 A to 30 A 1 V to 19 V	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
627.	LED modules for general lighting – Safety specifications Lamp controlgear	Protection against accidental contact with live Parts	Qualitative 10 V to 65 V	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
628.		Moisture resistance and insulation	Quantitative 50 °C to 960 °C 50 °C to 250 °C 1 mm to 200 mm 10 V to 600 V at 50 Hz	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
629.		Electrical strength	Quantitative 0.1 kV to 5 kV	IEC 62031 ISIRI 1172 IEC 61347-1 IEC 61347-2-13
630.	DC or AC supplied electronic control gear for LED modules	Classification	Qualitative ----	IEC 62384 ISIRI 16075
631.		Verification of Marking	Qualitative ----	IEC 62384 ISIRI 16075
632.		Output voltage and current	Quantitative 3 V; to 300 V 5 mA to 2.7 A 5 mA to 8 A	IEC 62384 ISIRI 16075
633.	DC or AC supplied electronic control gear for LED modules	Total Circuit Power	Quantitative 1 W 4000 W	IEC 62384 ISIRI 16075
634.		Power factor	Quantitative 0-1	IEC 62384 ISIRI 16075
635.		Supply Current	Quantitative 5 mA to 2.7 A 5 mA to 8 A	IEC 62384 ISIRI 16075
636.	Self-ballasted LED lamps for general lighting services with supply voltages > 50 V Self-ballasted compact	Verification of Marking	Qualitative ---	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916

No.	Object of the test	The defining characteristic	Range	Test method
637.	fluorescent lamps for general lighting services	Dimensions	Quantitative 1mm to 500 mm	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
638.		Electrical parameters	Quantitative 10 V to 300 V PF 0-1 1 A to 16 A Power up to 5kVA	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
639.	Self-ballasted LED lamps for general lighting services with supply voltages > 50 V Self-ballasted compact fluorescent lamps for general lighting services	Photometric parameters	Quantitative CCT CRI Lumen Flux Radiant Power	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
640.		Life time	Quantitative Up to 40 Sample	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
641.		Temperature cycling test	Qualitative - 40 °C to 140 °C	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
642.		Supply switching test	Qualitative Up to 30000 h Every 30 s	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
643.		Accelerated operational life test	Qualitative Up to 20 Sample Up to 140 °C	IEC 62612 INSO 20422 IEC 60969 ISIRI 5916
Electricity Equipment Laboratory				
644.	Electricity metering equipment (AC)	Standard electrical values	Quantitative 1 A Up 75 A 50 Hz -60 Hz	IEC 62052-11
645.		Case	Qualitative ---	IEC 62052-11
646.	Electricity metering equipment (AC)	Spring hammer test	Qualitative 0.2 J	IEC 62052-11
647.		Shock test	Qualitative ---	IEC 62052-11
648.		Vibration test	Qualitative frequency range: 10 Hz to 150 Hz	IEC 62052-11
649.		Window Terminals - Terminal block(s) Terminal cover(s)	Qualitative ---	IEC 62052-11

No.	Object of the test	The defining characteristic	Range	Test method
650.		Clearance and creepage distances	Quantitative 0.1 mm –150mm	IEC 62052-11
651.		Insulating encased meter of protective class II	Qualitative Test finger	IEC 62052-11
652.		Resistance to heat and fire	Qualitative 50 °C to 960 °C	IEC 62052-11
653.		Protection against penetration of dust and water	Qualitative IP1X - 6X IPX1 - X8	IEC 62052-11
654.		Display of measured values	Qualitative ---	IEC 62052-11
655.	Electricity metering equipment (AC)	Output device	Qualitative ---	IEC 62052-11
656.		Mechanical and electrical characteristics	Quantitative Up to 20 kHz	IEC 62052-11
657.		Optical characteristics	Quantitative Up to 1500 nm	IEC 62052-11
658.		Marking of meter	Qualitative ---	IEC 62052-11
659.		Climatic conditions Dry Heat Test Cold Test Damp Heat Test	Quantitative - 40 °C to 140 °C 20 % to 95 %	IEC 62052-11
660.		Voltage dips	Quantitative Dip: 0-100 % ≥ 0.01 s	IEC 62052-11
661.		Heating	Quantitative 40 °C to 250 °C	IEC 62052-11
662.		Impulse voltage test AC voltage test	Qualitative DC Up to 10 kV AC Up to 5 kV	IEC 62052-11
663.		Test of immunity to electrostatic discharges	Quantitative Air: 2-16.5 kV Contact: 2-10 kV	IEC 62052-11
664.	Electricity metering equipment (AC)	Test of immunity to electromagnetic RF fields	Quantitative 80 MHz to 3 000 MHz; 0 – 30 V/m	IEC 62052-11
665.		Fast transient burst test	Quantitative 0.2 – 4.4 kV	IEC 62052-11
666.		Test of immunity to conducted disturbances, induced by radio-frequency fields	Quantitative 3 - 10 V 150 kHz-80 MHz	IEC 62052-11
667.		Surge immunity test	Quantitative 0.2 kV – 4.4 kV	IEC 62052-11
668.		Radio interference suppression	Quantitative ----	IEC 62052-11
669.	Meter	Power consumption	Quantitative Up 75 A Up to 600 V	IEC 62053-11 IEC-62053-21 IEC 62053-22

No.	Object of the test	The defining characteristic	Range	Test method
			50/60 Hz	IEC 62053-23
670.		Influence of short-time over currents	Quantitative ---	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
671.		Influence of self-heating	Quantitative Up 75 A Up to 600 V Power factor: 1 0.5 Inductive	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
672.		AC voltage test	Qualitative AC Up to 5 kV	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
673.		Limits of error due to variation of the current	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
674.	Meter	Limits of error due the Voltage variation	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
675.		Limits of error due the Frequency variation	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive 40-60 Hz	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
676.	Meter	Ambient temperature variation	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive - 40 °C to 140 °C 20 % to 95 %	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
677.		Reversed phase sequence	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive	IEC 62053-11 IEC-62053-21 IEC 62053-22

No.	Object of the test	The defining characteristic	Range	Test method
678.		Voltage unbalance	Quantitative Up 75 A Up to 600 V Power factor: up to 1 Inductive capacitive	IEC-62053-21 IEC 62053-22
679.		Harmonic components in the current and voltage circuits, odd , even	Quantitative Up 75 A Up to 600 V Power factor:1	IEC-62053-21 IEC 62053-22
680.		Quantitative: Magnetic induction of external origin	Quantitative ---	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
681.	Meter	Operation of accessories	Quantitative ---	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
682.		Auxiliary voltage	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-22
683.		Mechanical load of either single or multi-rate register	Quantitative ---	IEC 62053-11
684.		DC and even harmonics in the AC current circuit	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-21 IEC 62053-23
685.		Odd harmonics in the AC current circuit	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-21
686.	Meter	Sub-harmonics in the AC current circuit	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-21 IEC 62053-22
687.		Continuous magnetic induction of external origin	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-21 IEC 62053-22 IEC 62053-23
688.		Magnetic induction of external origin	Quantitative Up 75 A Up to 600 V Power factor:1	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
689.		Electromagnetic RF fields	Quantitative 80 MHz to 3 000 MHz; 0 – 30 V/m	IEC 62053-21 IEC 62053-22 IEC 62053-23
690.		Conducted disturbances, induced by	Quantitative 3 V - 10 V 130 kHz-80 MHz	IEC 62053-21 IEC 62053-22 IEC 62053-23

No.	Object of the test	The defining characteristic	Range	Test method
		radiofrequency fields		
691.		Fast transient burst	Quantitative 0.2 – 4.4 kV	IEC 62053-21 IEC 62053-22 IEC 62053-23
692.		Test of starting and no-load condition	Quantitative Up to 600 V	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
693.		Start Up	Quantitative 1 A Up 75 A Up to 600 V Power factor: 1	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
694.		Meter constant	Qualitative ---	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
695.		Interpretation of test results	Quantitative 1 A Up 75 A Up to 600 V 40-60 Hz	IEC 62053-11 IEC-62053-21 IEC 62053-22 IEC 62053-23
696.		Adjustment	Quantitative --	IEC 62053-11
Solar Panel Laboratory				
697.	PV Module	Accessibility test MST 11	Qualitative Accessible/ not Accessible	IEC 61730-2
698.		Ground continuity test MST 13	Quantitative 0 to 0.1 ohm	IEC 61730-2
699.		Impulse voltage test MST 14	Qualitative Dielectric breakdown occurred/ not occurred	IEC 61730-2
700.		Dielectric withstand test MST16	Qualitative Dielectric breakdown occurred/ not occurred Test voltage: up to 2500V	IEC 61730-2
701.	PV Module	Insulation test	Quantitative Voltage test: Up to 5kV	IEC 61215