

IEC TC31-SD-001:Ed1/2025-11

Significance of changes between IEC 60079-29-0 and previously published gas detection equipment performance standards

1 Introduction

This is a supporting document to provide guidance for testing and certification of gas detection equipment performance to IEC 60079-29-0:2025. The document provides information for manufacturers and certification bodies in order to consider the significance of changes to the previously published gas detection equipment performance standards. The comparison tables provide a means to demonstrate potential compliance of existing certified gas detection equipment. The guidance addresses the likely need for re-assessment and testing against each of the requirements of IEC 60079-29-0:2025.

2 Comparison Tables

2.1 The significance of changes between IEC 60079-29-0, Edition 1 (2025) and IEC 60079-29-1, Edition 2.1 (2020):

Chapter of IEC 60079-29-0	Chapter of IEC 60079-29-1 Ed. 2.1	Title	Verdict for IEC 60079-29-0
4	4	General requirements	Requirement differences are deemed insignificant with exception of Clauses 4.3 (Marking) and 4.4 (Instructions) which require re-assessment.
5.4.2	5.4.2	Unpowered storage	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing.
5.4.3	5.4.12	Vibration	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing excluding 5.4.21.
5.4.4	5.4.13	Drop test	No re-assessment is required due to minor or editorial changes.
5.4.5	5.4.22	Calibration kit	No re-assessment is required due to minor or editorial changes.

5.4.6	5.4.3	Linearity	No re-assessment is required due to minor or editorial changes.
5.4.7	5.4.5	Alarm set point(s)	No re-assessment is required due to minor or editorial changes.
5.4.8	5.4.4	Stability	Re-assessment is required; however, extrapolations of existing test data may be used as a means of acceptance criteria.
5.4.9	5.4.16	Gas concentrations above the upper limit of indication	No re-assessment is required due to minor or editorial changes.
5.4.10	5.4.20	Poisons and other gases	Re-assessment is required for Type FL-Group I equipment that utilize catalytic and semiconductor sensors.
5.4.11	5.4.6	Temperature	Re-assessment per Clause 5.4.11.1 is required for equipment ratings within the specified limits of IEC 60079-29-0, and re-assessment per Clause 5.4.11.2 is required for electrochemical sensors only.
5.4.12	5.4.7	Pressure	No re-assessment is required due to minor or editorial changes.
5.4.13	5.4.8	Humidity of test gas	No re-assessment is required due to minor or editorial changes.
5.4.14	5.4.9	Air velocity	No re-assessment is required due to minor or editorial changes.
5.4.15	5.4.10	Flow Rate	Re-assessment is required.
5.4.16	5.4.14	Warm-up time	No re-assessment is required due to minor or editorial changes.
5.4.17	5.4.15	Time of response	No re-assessment is required due to minor or editorial changes.
5.4.18	5.4.15	Time of recovery	No re-assessment is required due to minor or editorial changes.

5.4.19	5.4.19	Sampling probe	No re-assessment is required due to minor or editorial changes.
5.4.20	n/a	Operation at or below the lower limit of measurement	Not applicable to Type FL equipment.
5.4.21	n/a	Extended operation in test gas	Not applicable to Type FL equipment.
5.4.22	5.4.11	Orientation	No re-assessment is required due to minor or editorial changes.
5.4.23	5.4.17	Battery capacity	Re-assessment is required.
5.4.24	5.4.18	Power supply variations	No re-assessment is required due to minor or editorial changes.
5.4.25	5.4.21	Electromagnetic immunity	Re-assessment is required for IEC 61326-1:2020 and IEC 61000-4-29.
5.4.26	4.2.4	Fault signal tests	Re-assessment is required.
5.4.27	4.2.9	Software controlled equipment	No re-assessment is required due to minor or editorial changes.
5.4.28	n/a	Environmental protection	Re-assessment is required.
5.4.29	n/a	Beam block fault	Not applicable.
5.4.30	n/a	Water vapour interference	Not applicable.
5.4.31	n/a	Alignment	Not applicable.
5.4.32	n/a	Partial obscuration	Not applicable.
5.4.33	n/a	Long range operation	Not applicable.
5.4.34	n/a	Direct solar radiation	Not applicable.
5.4.35	n/a	Signal intensity variation	Not applicable.
5.4.36	n/a	Scanning performance	Not applicable.

NOTE: Re-assessment may not require re-testing to demonstrate compliance.

2.2 The significance of changes between IEC 60079-29-0, Edition 1 (2025) and IEC 60079-29-4 Edition 1 (2010):

Chapter of IEC 60079-29-0	Chapter of IEC 60079-29-4 Ed. 1	Title	Verdict for IEC 60079-29-0
4	4	General requirements	Requirement differences are deemed insignificant with exception of Clauses 4.3 (Marking) and 4.4 (Instructions) which require re-assessment.
5.4.2	5.4.2	Unpowered storage	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing.
5.4.3	5.4.8	Vibration	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing excluding 5.4.21.
5.4.4	5.4.9	Drop test	No re-assessment is required due to minor or editorial changes.
5.4.5	n/a	Calibration kit	Re-assessment is required for verification of acceptance criteria.
5.4.6	5.4.3	Linearity	No re-assessment is required due to minor or editorial changes.
5.4.7	5.4.5	Alarm set point(s)	No re-assessment is required due to minor or editorial changes.
5.4.8	5.4.4	Stability	Re-assessment is required; however, extrapolations of existing test data may be used as a means of acceptance criteria.
5.4.9	n/a	Gas concentrations above the upper limit of indication	Re-assessment is required.
5.4.10	n/a	Poisons and other gases	Not applicable.
5.4.11	5.4.6	Temperature	Re-assessment is required for control unit and battery-operated equipment.
5.4.12	n/a	Pressure	Not applicable.
5.4.13	n/a	Humidity of test gas	Not applicable.
5.4.14	n/a	Air velocity	Not applicable.

5.4.15	n/a	Flow Rate	Not applicable.
5.4.16	n/a	Warm-up time	Re-assessment is required.
5.4.17	5.4.11	Time of response	No re-assessment is required due to minor or editorial changes.
5.4.18	5.4.11	Time of recovery	No re-assessment is required due to minor or editorial changes.
5.4.19	n/a	Sampling probe	Not applicable.
5.4.20	n/a	Operation at or below the lower limit of measurement	Not applicable.
5.4.21	n/a	Extended operation in test gas	Not applicable.
5.4.22	n/a	Orientation	Not applicable.
5.4.23	5.4.13	Battery capacity	Re-assessment is required.
5.4.24	5.4.14	Power supply variations	No re-assessment is required due to minor or editorial changes.
5.4.25	5.4.17	Electro-magnetic immunity	Re-assessment is required.
5.4.26	4.2.4	Fault signal tests	Re-assessment is required.
5.4.27	4.3.2	Software controlled equipment	No re-assessment is required due to minor or editorial changes.
5.4.28	n/a	Environmental protection	Re-assessment is required.
5.4.29	5.4.18	Beam block fault	No re-assessment is required due to minor or editorial changes.
5.4.30	5.4.7	Water vapour interference	No re-assessment is required due to minor or editorial changes.
5.4.31	5.4.10	Alignment	No re-assessment is required due to minor or editorial changes.
5.4.32	5.4.19	Partial obscuration	No re-assessment is required due to minor or editorial changes.
5.4.33	5.4.20	Long range operation	No re-assessment is required due to minor or editorial changes.
5.4.34	5.4.21	Direct solar radiation	No re-assessment is required due to minor or editorial changes.

5.4.35	n/a	Signal intensity variation	Re-assessment is required for topographic reflection equipment only.
5.4.36	n/a	Scanning performance	Re-assessment is required for topographic reflection equipment only.

NOTE: Re-assessment may not require re-testing to demonstrate compliance.

2.3 The significance of changes between IEC 60079-29-0, Edition 1 (2025) and IEC 62990-1 Edition 1 (2019):

Chapter of IEC 60079-29-0	Chapter of IEC 62990-1 Ed. 1	Title	Verdict for IEC 60079-29-0
4	4	General requirements	Requirement differences are deemed insignificant with exception of Clauses 4.3 (Marking) and 4.4 (Instructions) which require re-assessment.
5.4.2	5.4.2	Unpowered storage	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing.
5.4.3	5.4.4.1	Vibration	Re-assessment is required as preconditioning for 5.4.4 - 5.4.36 testing excluding 5.4.21.
5.4.4	5.4.4.2	Drop test	No re-assessment is required due to minor or editorial changes.
5.4.5	5.4.6.8	Calibration kit	No re-assessment is required due to minor or editorial changes.
5.4.6	5.4.3.2	Linearity	No re-assessment is required due to minor or editorial changes.
5.4.7	5.4.6.1	Alarm set point(s)	No re-assessment is required due to minor or editorial changes.
5.4.8	5.4.8	Stability	Re-assessment is required.
5.4.9	5.4.6.9	Gas concentrations above the upper limit of indication	No re-assessment is required due to minor or editorial changes.
5.4.10	n/a	Poisons and other gases	Not applicable.
5.4.11	5.4.5.1	Temperature	Re-assessment is required for 5.4.11.1 only.
5.4.12	5.4.5.2	Pressure	No re-assessment is required due to minor or editorial changes.
5.4.13	5.4.5.3	Humidity of test gas	No re-assessment is required due to minor or editorial changes.
5.4.14	5.4.5.4	Air velocity	No re-assessment is required due to minor or editorial changes.

5.4.15	5.4.6.3	Flow Rate	No re-assessment is required due to minor or editorial changes.
5.4.16	5.4.6.4	Warm-up time	No re-assessment is required due to minor or editorial changes.
5.4.17	5.4.6.5	Time of response	No re-assessment is required due to minor or editorial changes.
5.4.18	5.4.6.6	Time of recovery	No re-assessment is required due to minor or editorial changes.
5.4.19	5.4.6.7	Sampling probe	No re-assessment is required due to minor or editorial changes.
5.4.20	n/a	Operation at or below the lower limit of measurement	Not applicable.
5.4.21	5.4.6.10	Extended operation in test gas	No re-assessment is required due to minor or editorial changes.
5.4.22	5.4.6.11	Orientation	No re-assessment is required due to minor or editorial changes.
5.4.23	5.4.7.1	Battery capacity	Re-assessment is required.
5.4.24	5.4.7.2	Power supply variations	No re-assessment is required due to minor or editorial changes.
5.4.25	5.4.7.3	Electromagnetic immunity	Re-assessment is required for IEC 61326-1:2020 and IEC 61000-4-29.
5.4.26	5.4.9	Fault signal tests	Re-assessment is required.
5.4.27	5.4.10	Software controlled equipment	No re-assessment is required due to minor or editorial changes.
5.4.28	5.4.11	Environmental protection	Re-assessment is required for 5.4.28.3.2 only.
5.4.29	n/a	Beam block fault	Not applicable.
5.4.30	n/a	Water vapour interference	Not applicable.
5.4.31	n/a	Alignment	Not applicable.
5.4.32	n/a	Partial obscuration	Not applicable.
5.4.33	n/a	Long range operation	Not applicable.
5.4.34	n/a	Direct solar radiation	Not applicable.

5.4.35	n/a	Signal intensity variation	Not applicable.
5.4.36	n/a	Scanning performance	Not applicable.

NOTE: Re-assessment may not require re-testing to demonstrate compliance.