

Title:

Fire Resistance Test
In Accordance With
BS EN 1365-2: 2014,
On A Loadbearing
Timber Floor
Construction Protected
By A Plasterboard
Ceiling When
Incorporating Twelve
Downlighter Light
Fitting Assemblies.

Date of Test:

02 July 2023

Issue 1

23 November 2023

WF Report No.

527450/R



Prepared for:

JCC Lighting Products
Ltd

Lux Park,
Chichester Business
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West Sussex.



0249

Test Specimens

Summary of Tested Specimens

The timber floor had overall nominal dimensions of 4294 mm long by 3000 mm wide by 254.5 mm deep. The floor comprised 220 mm high Staircraft TFSi joists at 600 mm centres. The unexposed face of the floor comprised nominally 22 mm thick tongue and groove chipboard. The floor assembly was protected by one layer of 12.5 mm thick 'Gyproc Wallboard', through fixed to the timber framework with screws.

The ceiling incorporated twelve specimen downlighter light fittings. The lights were referenced as follows:

Test Ref.	Model Ref.	Cut Out Diameter.
1	JC1001	70 mm
2	JC10010	70 mm
3	JC1101	68 mm
4	JC1102	82 mm
5	JC1020	70 mm
6	JC010036	68 mm
7	JC010037	90 mm
8	JC010038	125 mm
9	JC010039	157 mm
10	JC010040	90 mm
11	JC010041	125 mm
12	JC010042	157 mm

The floor supported a uniformly distributed load of 1.07kN/m². This load was provided by the test sponsor as to represent the expected working load for the floor construction in practice.

Detailed drawings of the test specimen(s) and a comprehensive description of the test construction based on a detailed survey of the specimen(s) and information supplied by the sponsor of the test are included in the Test Specimen and Schedule of Components sections of this report.

Performance Criteria and Test Results

Loadbearing Capacity

This is the time in completed minutes for which the test specimen continues to maintain its ability to support the test load during the test. Support of the test load is determined by both the amount and the rate of Deflection. The limiting deflection and the limiting rate of deflection for the specimen, as specified by the Standard, are calculated as:

Criteria	Value
<i>L: Clear span - in mm</i>	4100
<i>d: Depth of structural section - in mm</i>	220
Limiting deflection ($L^2/400d$) - in mm	191.0
Limiting rate of deflection ($L^2/9000d$) - in mm/min	8.5
Measured Deflection $1.5 \times (L^2/400d)$ - in mm	286.5

Failure to support the load is deemed to have occurred when a '**Measured Deflection**' greater than or equal to '**1.5 x Limiting Deflection**' is observed

Or

Both the '**Limiting rate of deflection**' and '**Limiting deflection**' are exceeded.

The criterion was satisfied for **34 minutes** after which time the test was discontinued.

Integrity

It is required that the specimen retains its separating function, without:

- causing ignition of a cotton pad when applied
- permitting the penetration of a gap gauge as specified in BS EN 1363-1: 2020
- sustained flaming on the unexposed surface
- subsequent failure of loadbearing capacity

These requirements were satisfied for the periods shown below:

Sustained flaming

34 minutes

Gap gauge

34 minutes Due to loadbearing failure

Cotton pad

34 minutes

Insulation

It is required that the mean temperature rise of the unexposed surface shall not be greater than 140°C and that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure.
These requirements were satisfied for the period shown below:

Specimen

34 minutes Due to integrity failure

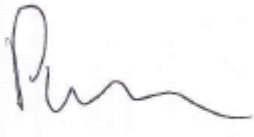
*Test was discontinued after a period of 35 minutes.

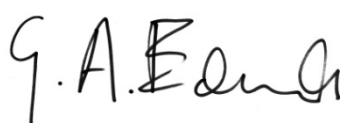
Date of Test

02 July 2023

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Signatories


Responsible Officer P. White Technical Officer


Approved G. Edmonds Senior Technical Officer

* For and on behalf of **Warringtonfire**.

Report Issued: 23 November 2023

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Revision History

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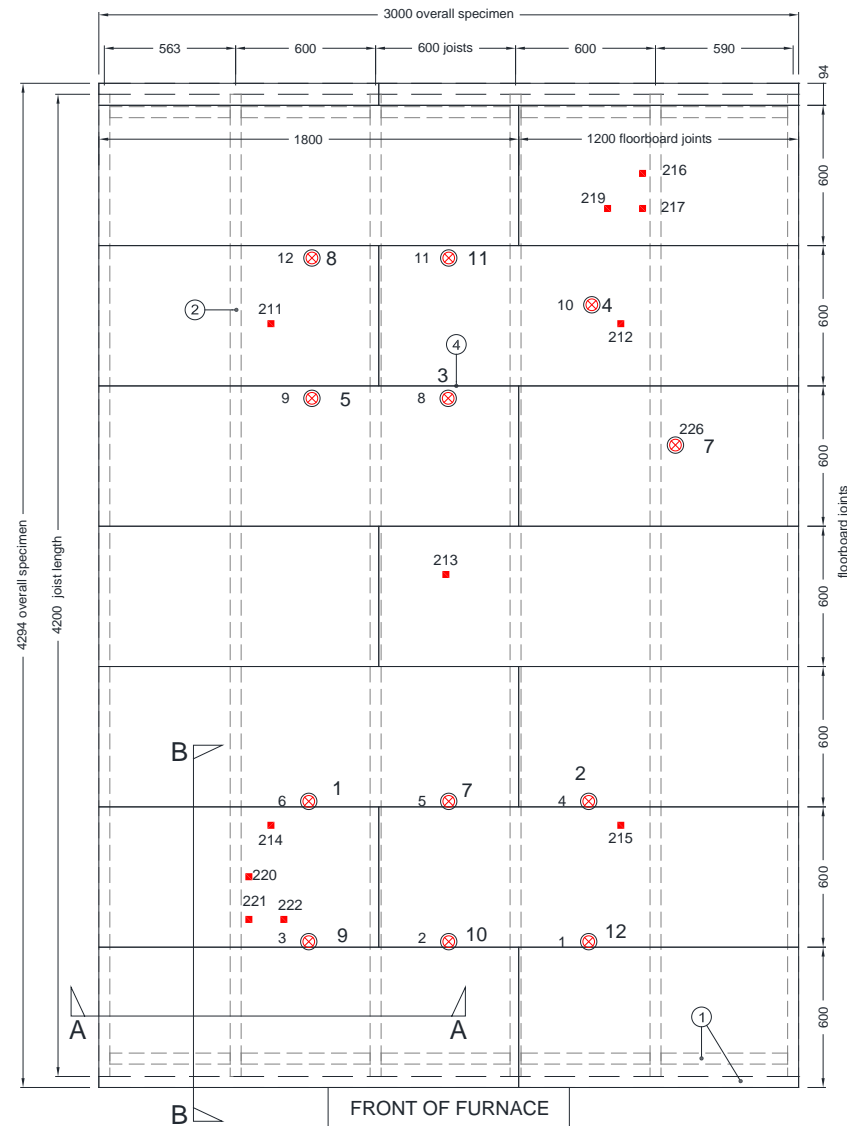
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Test Conditions

Standard	<p>BS EN 1365-2: 2014, 'Fire resistance tests for loadbearing elements – Part 2: Floors and Roofs'</p> <p>The purpose of the test was to evaluate the performance of a timber floor construction protected by a ceiling of known fire resistance, when incorporating down lighter light fitting assemblies.</p>
Sampling	<p>Warringtonfire was not involved in the sampling or selection of the tested specimen or any of the components.</p> <p>The results obtained during the test only apply to the test samples as received and tested by Warringtonfire.</p>
Installation	<p>Representatives of Warringtonfire assembled the floor construction and installed the downlighters between the 28 June and the 01 July 2023</p>
Conditioning	<p>The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of 4 days. Throughout this period of time both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 18.5°C to 27.5°C and 41% to 71% respectively.</p>
Instruction to Test	<p>The test was conducted on the 02 July 2023 at the request of JCC Lighting Products Ltd, the test sponsor.</p>
Ambient Temperature	<p>The ambient air temperature in the vicinity of the test construction was 25°C at the start of the test with a maximum variation of -2°C during the test.</p>
Furnace	<p>The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 2020 Clause 5.1 using eight plate thermometers, distributed over a plane 100 mm from the underside of test assembly.</p>
Thermocouples	<p>Thermocouples were provided to monitor the unexposed surface of the specimen. The output of all instrumentation was recorded at no less than one minute intervals. The locations and reference numbers of the various unexposed surface and internal thermocouples are shown in Figure 1.</p>
Application of the load	<p>The full test load was applied via dead load and hydraulic rams uniformly distributed over the test Specimen 30 minutes before the commencement of the test.</p>
Loadbearing Capacity Criteria	<p>A linear deflection transducer was provided at the approximate centre on the unexposed surface of the specimen to record its vertical deflection.</p>
Furnace Pressure	<p>After the first five minutes of testing and for the remainder of the test, the furnace atmospheric pressure was controlled so that it complied with the requirements of BS EN 1363-1: 2020, clause 5.2.1 The calculated pressure differential relative to the laboratory atmosphere 100 mm below the soffit of the specimen was 18 (± 5) Pa between 5 and 10 minutes and 18 (± 3) Pa thereafter.</p>

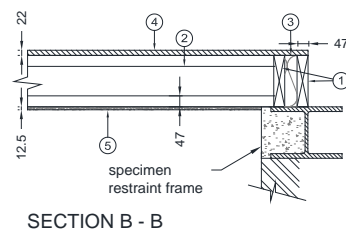
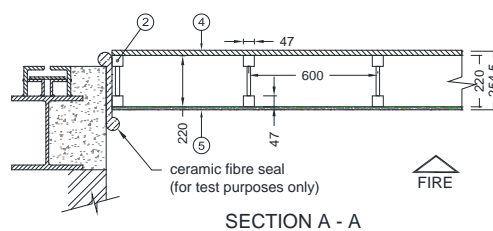
Test Construction

Figure 1 – General plan view of test specimen showing thermocouple positions- unexposed face and sections (A-A) and (B-B)



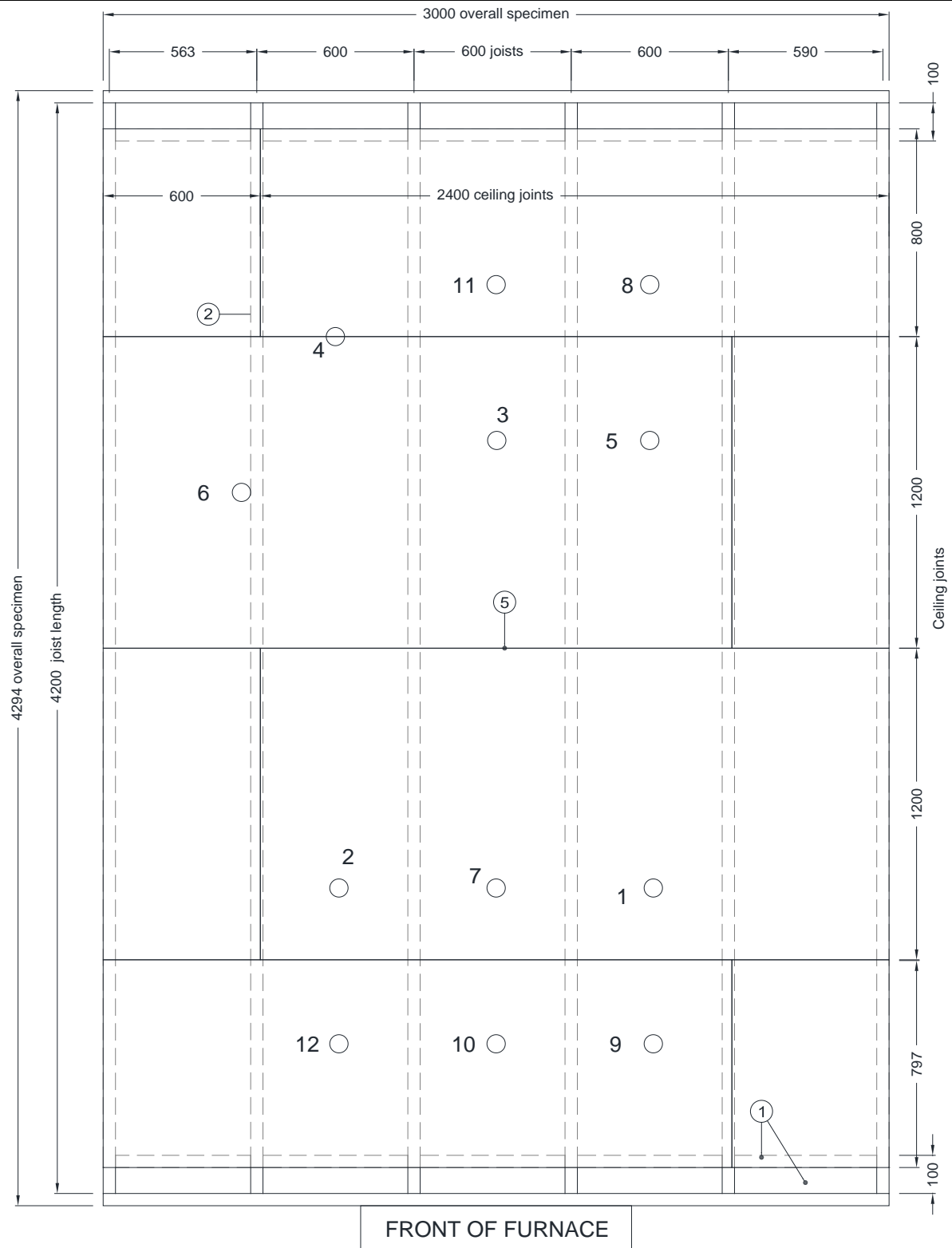
GENERAL PLAN VIEW OF TEST SPECIMEN SHOWING THERMOCOUPLE POSITIONS - UNEXPOSED FACE

- Positions of surface thermocouples
- ⊗ Positions of mineral insulated thermocouples at mid-cavity, adjacent to each downlight



Do not scale. All dimensions are in mm

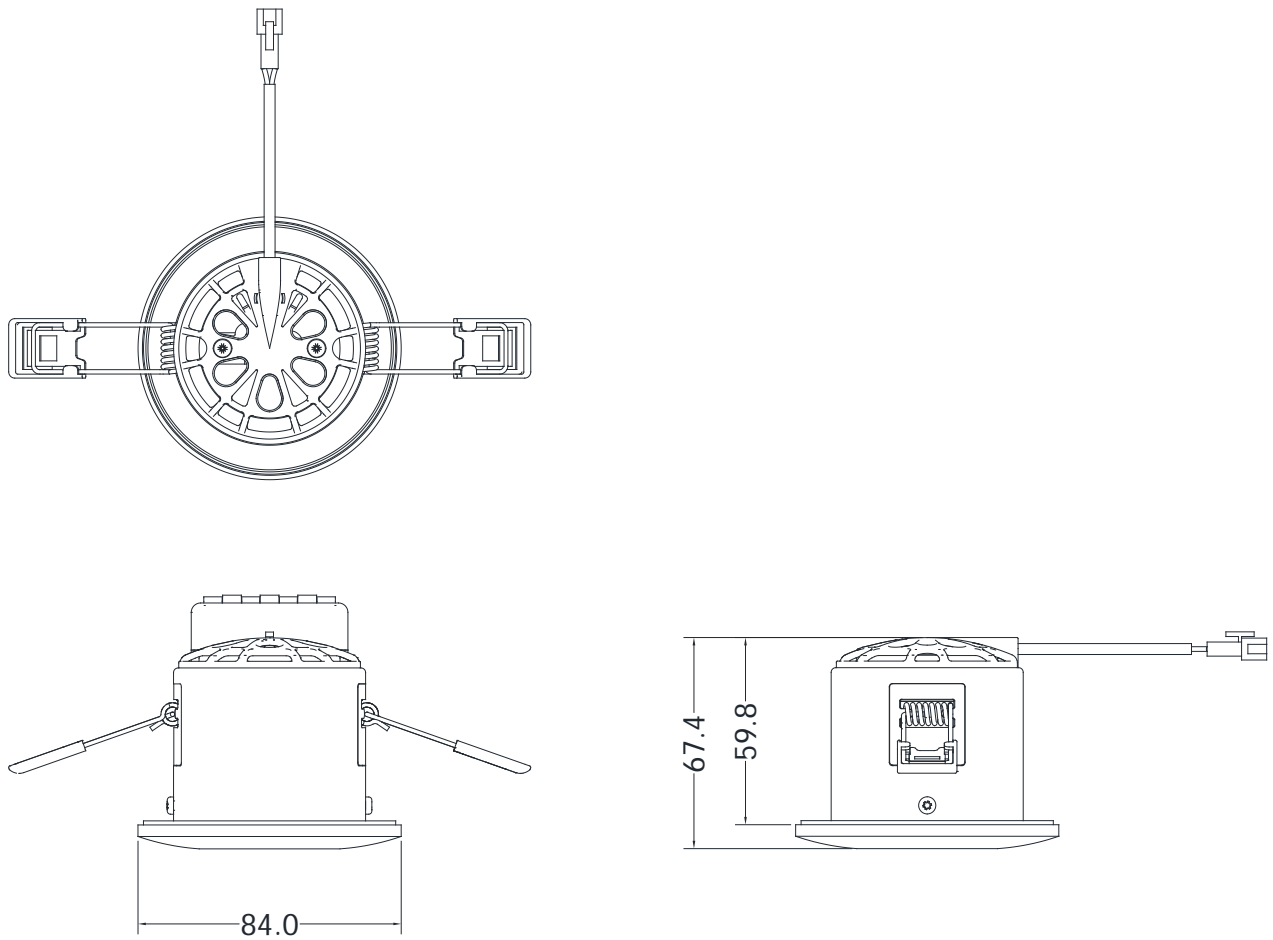
Figure 2 – General plan view of test specimen – exposed face



GENERAL PLAN VIEW OF TEST SPECIMEN -
EXPOSED FACE

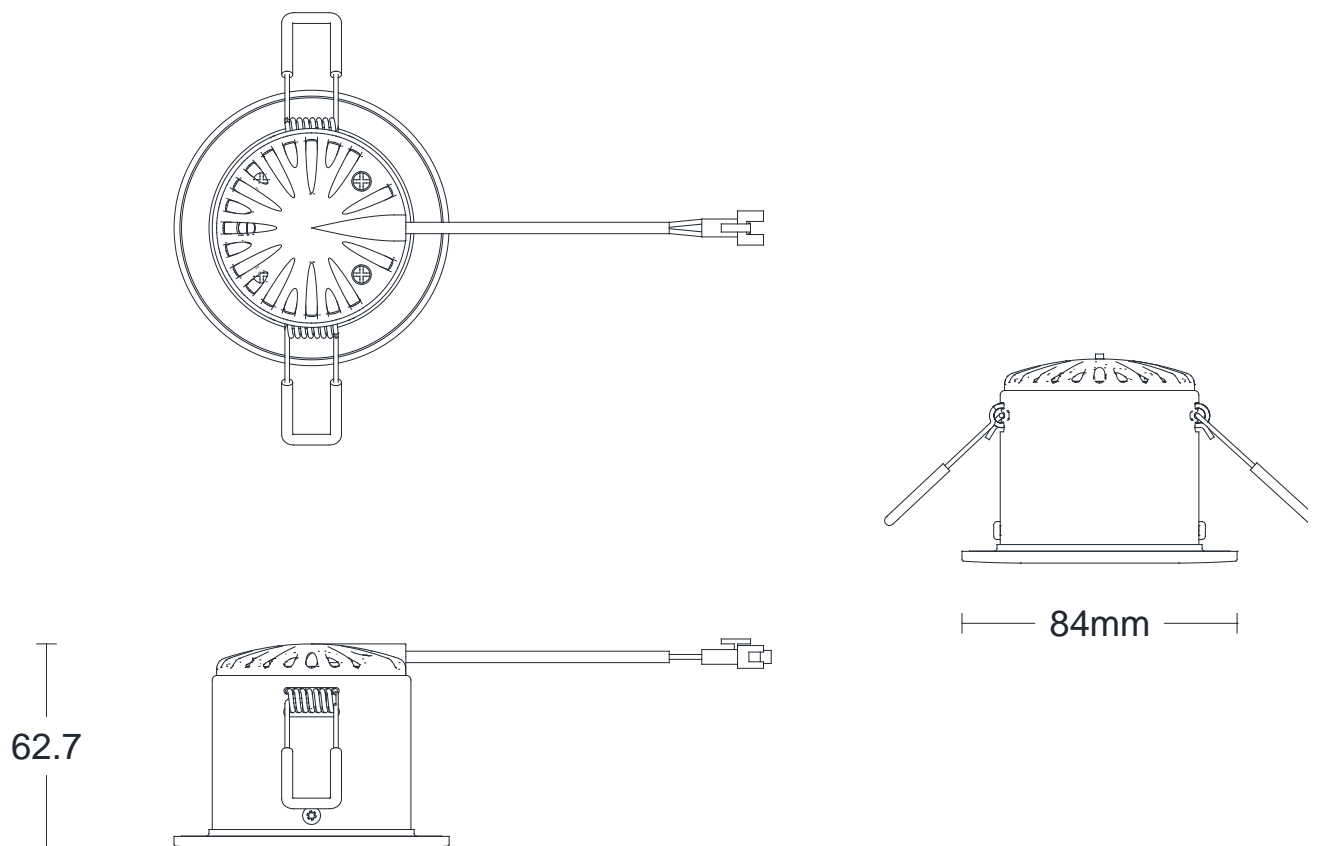
Do not scale. All dimensions are in mm

Figure 3 – Downlight 1- JC1001



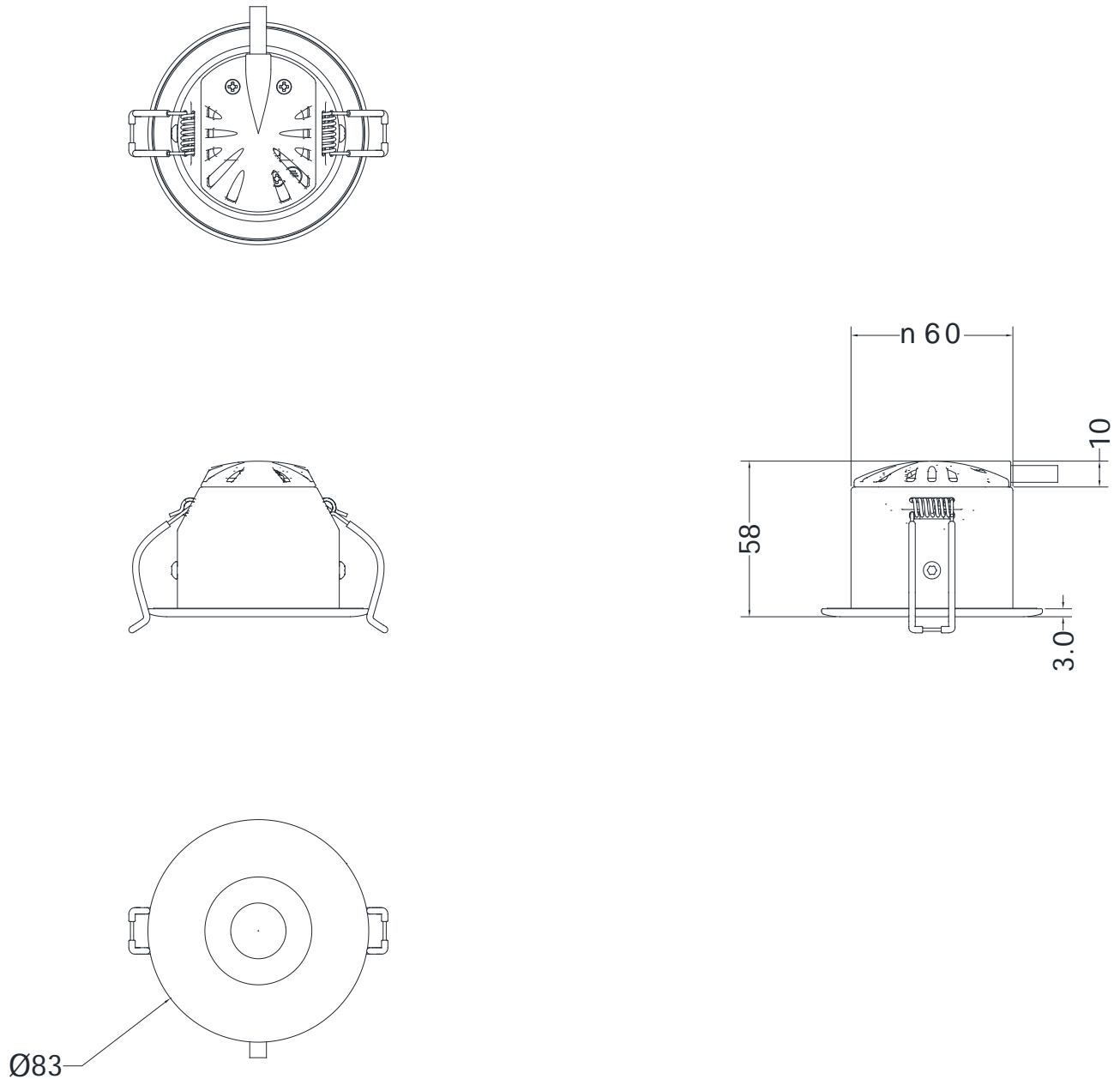
Do not scale. All dimensions are in mm

Figure 4 – Downlight 2- JC10010



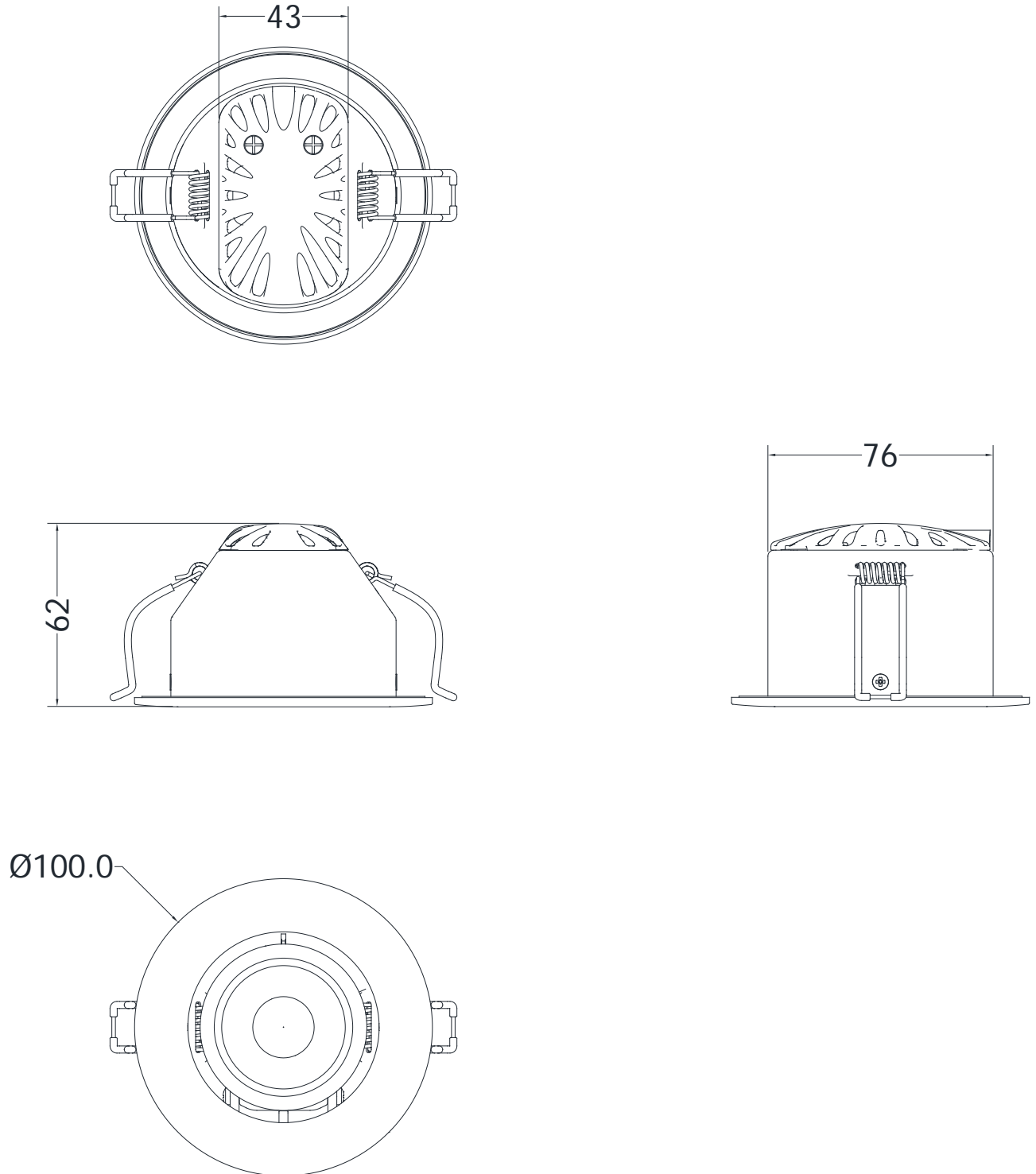
Do not scale. All dimensions are in mm

Figure 5 – Downlight 3- JC1101



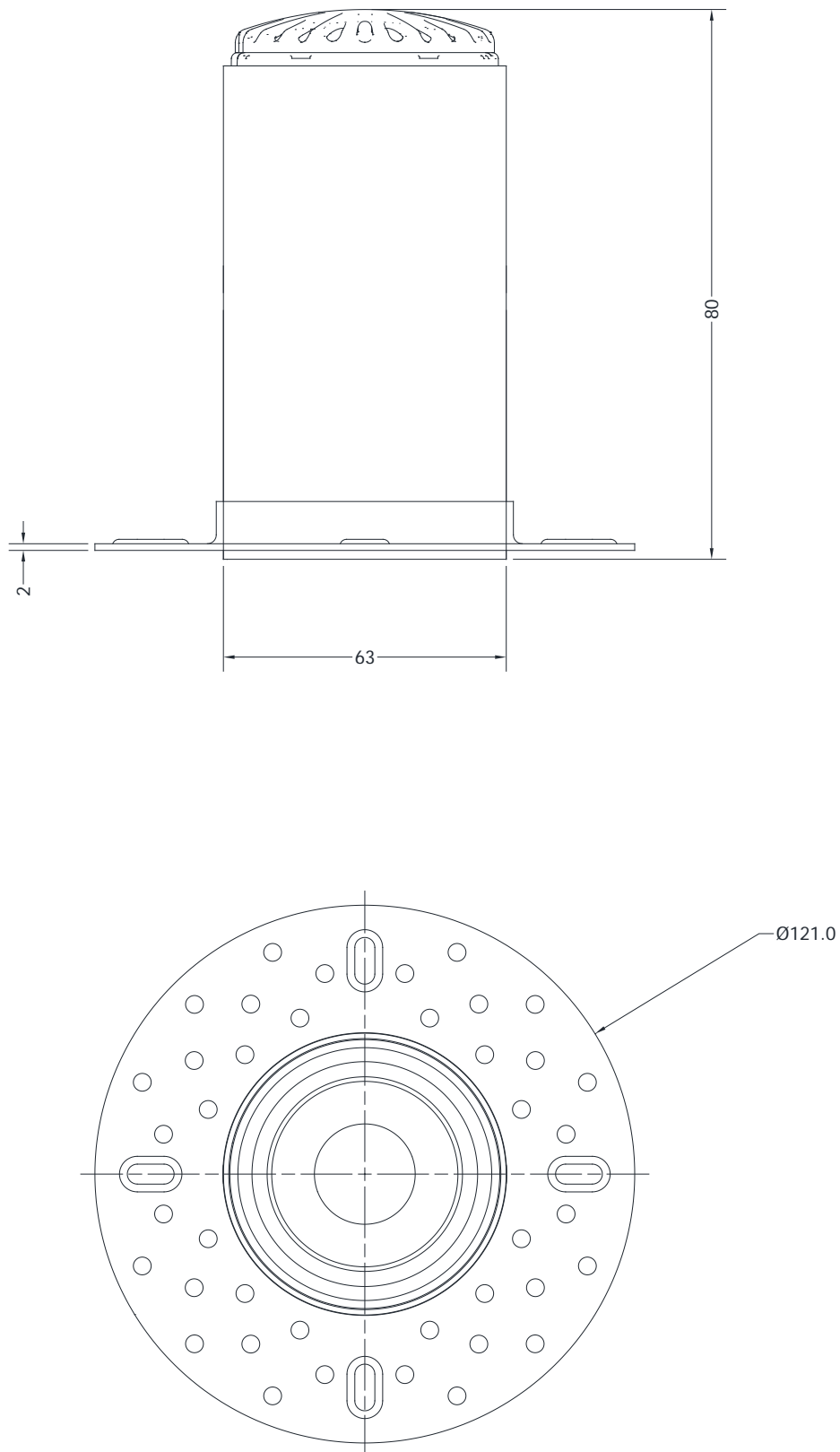
Do not scale. All dimensions are in mm

Figure 6 – Downlight 4- JC1102



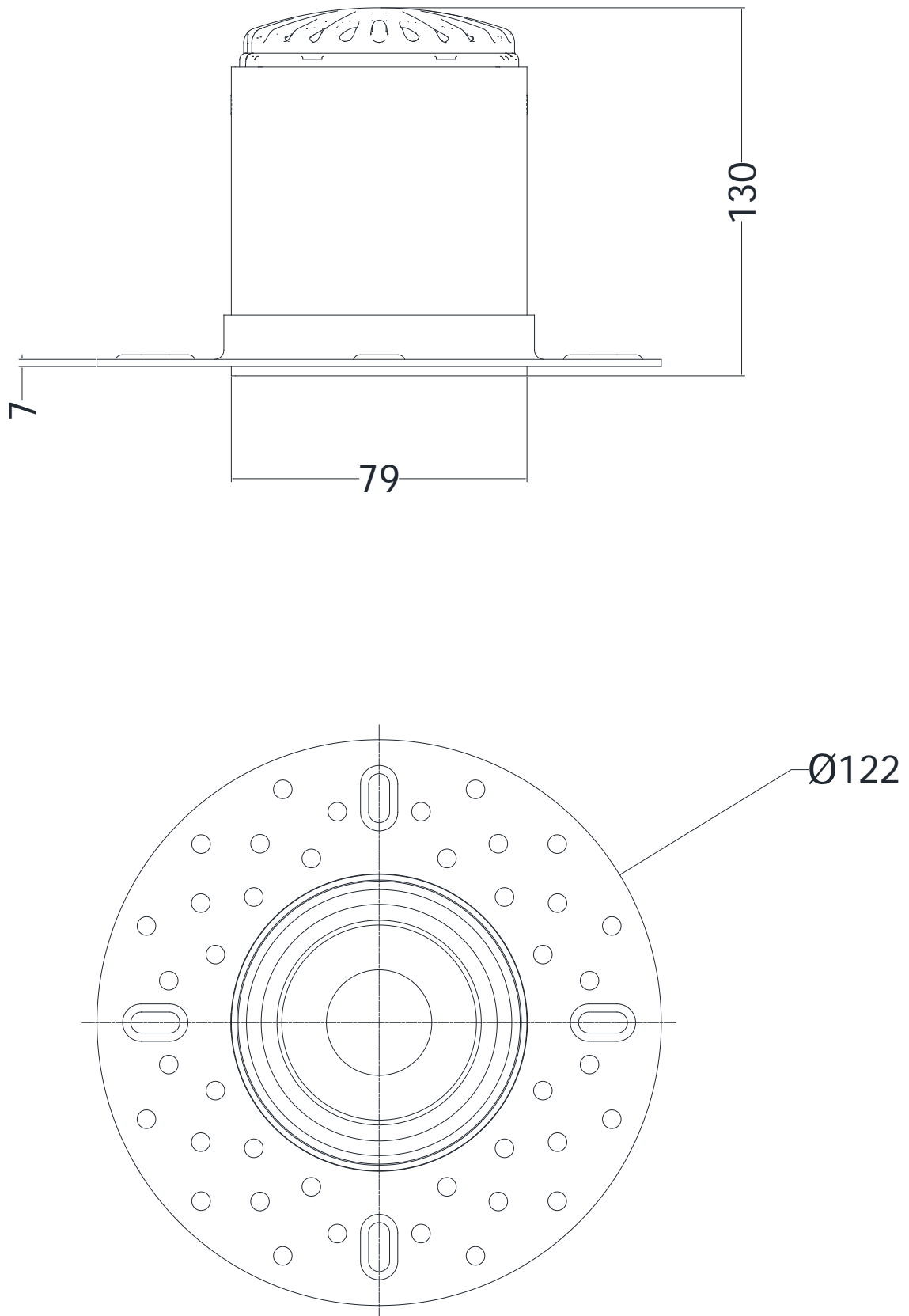
Do not scale. All dimensions are in mm

Figure 7 – Downlight 5- JC1020



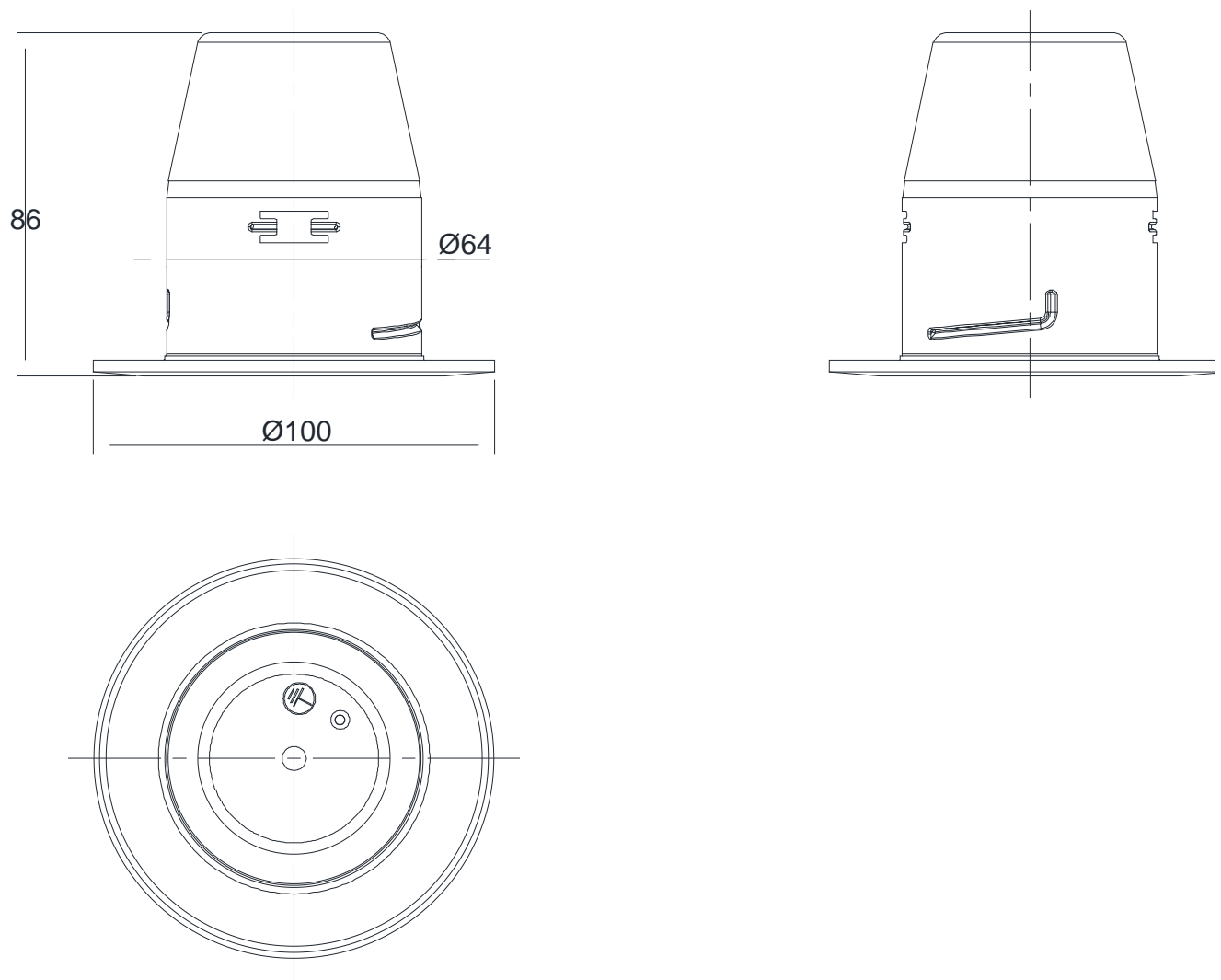
Do not scale. All dimensions are in mm

Figure 8 – Downlight 6- JC010036



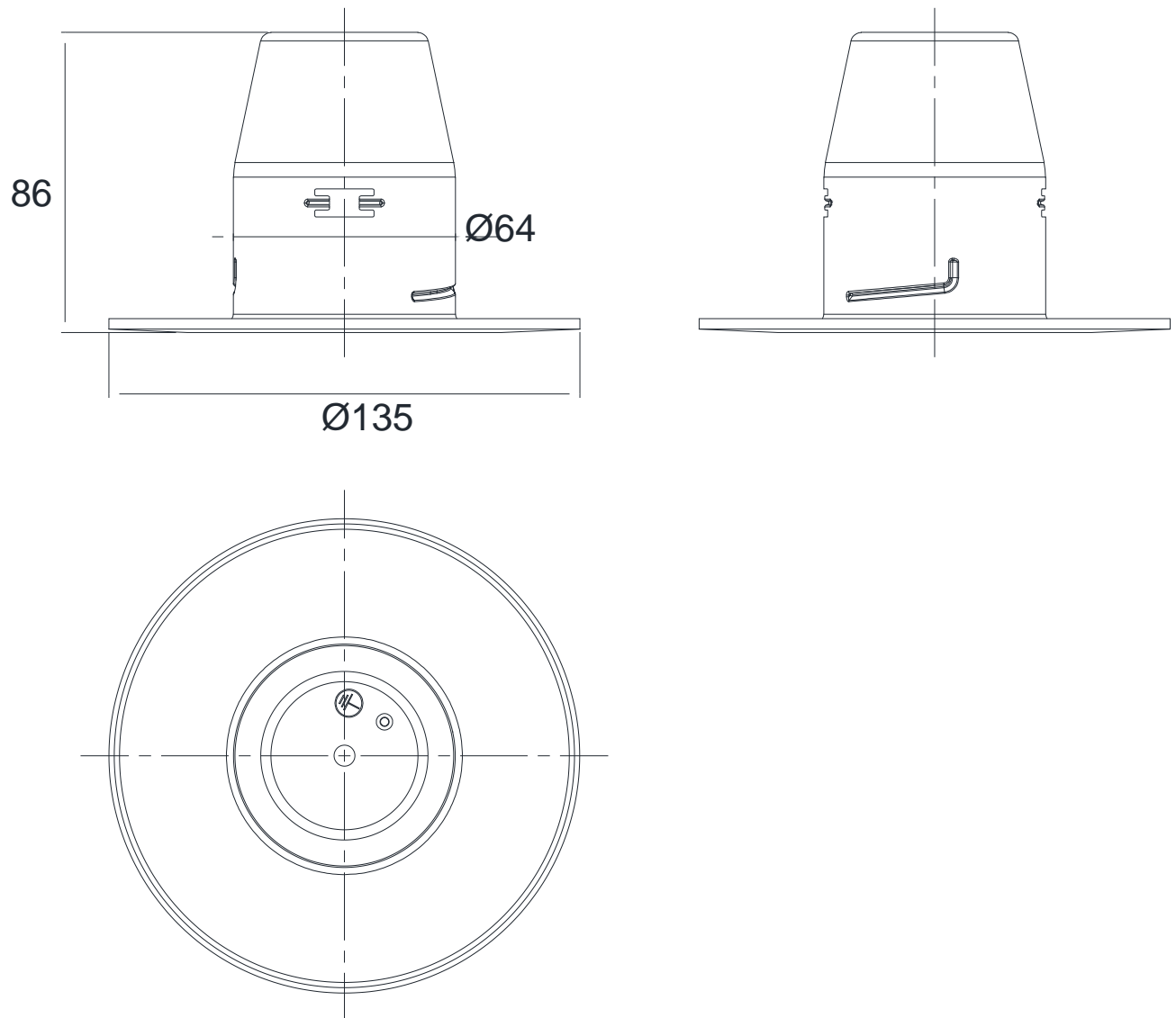
Do not scale. All dimensions are in mm

Figure 9 – Downlight 7- JC010037



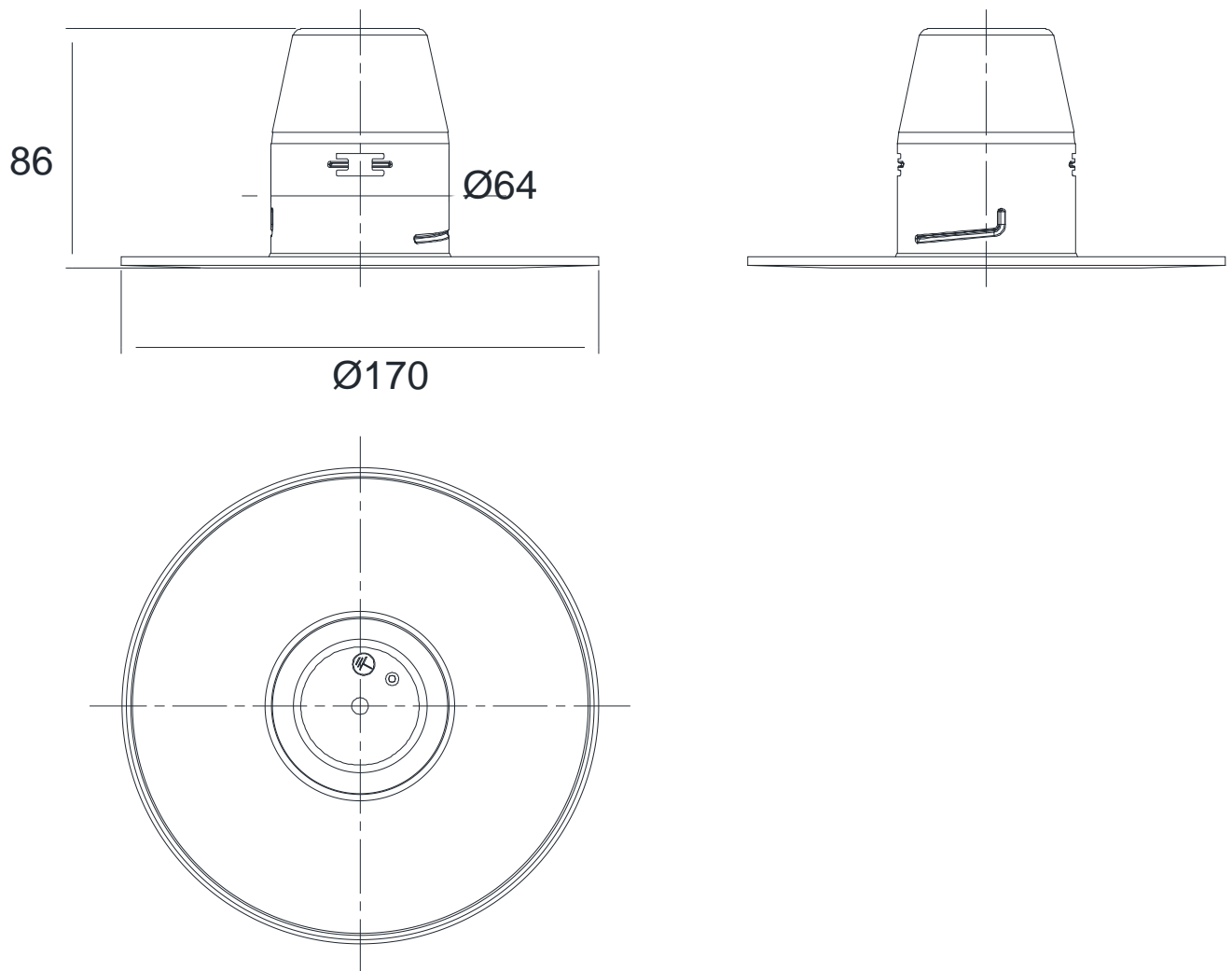
Do not scale. All dimensions are in mm

Figure 10 – Downlight 8- JC010038



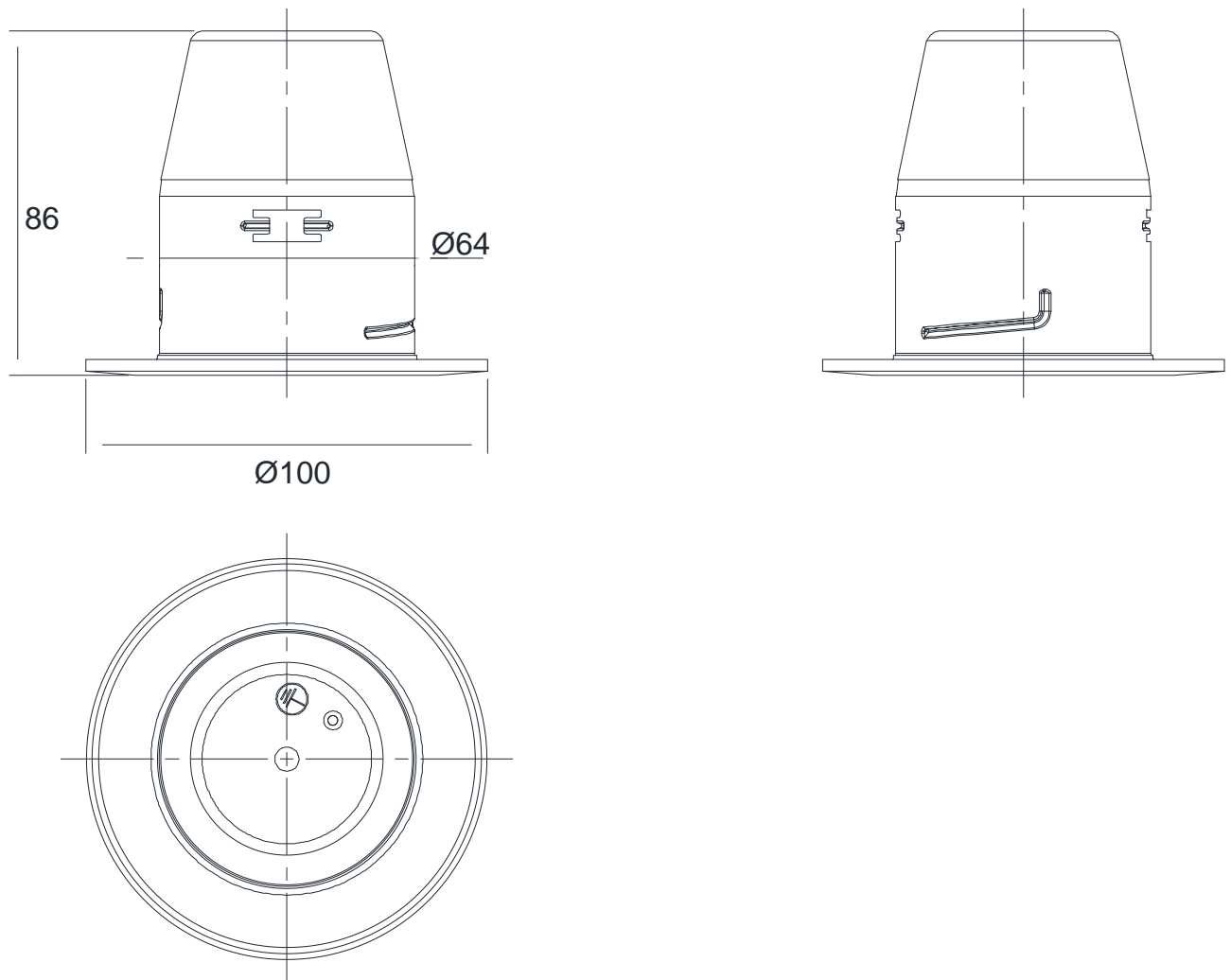
Do not scale. All dimensions are in mm

Figure 11 – Downlight 9- JC010039



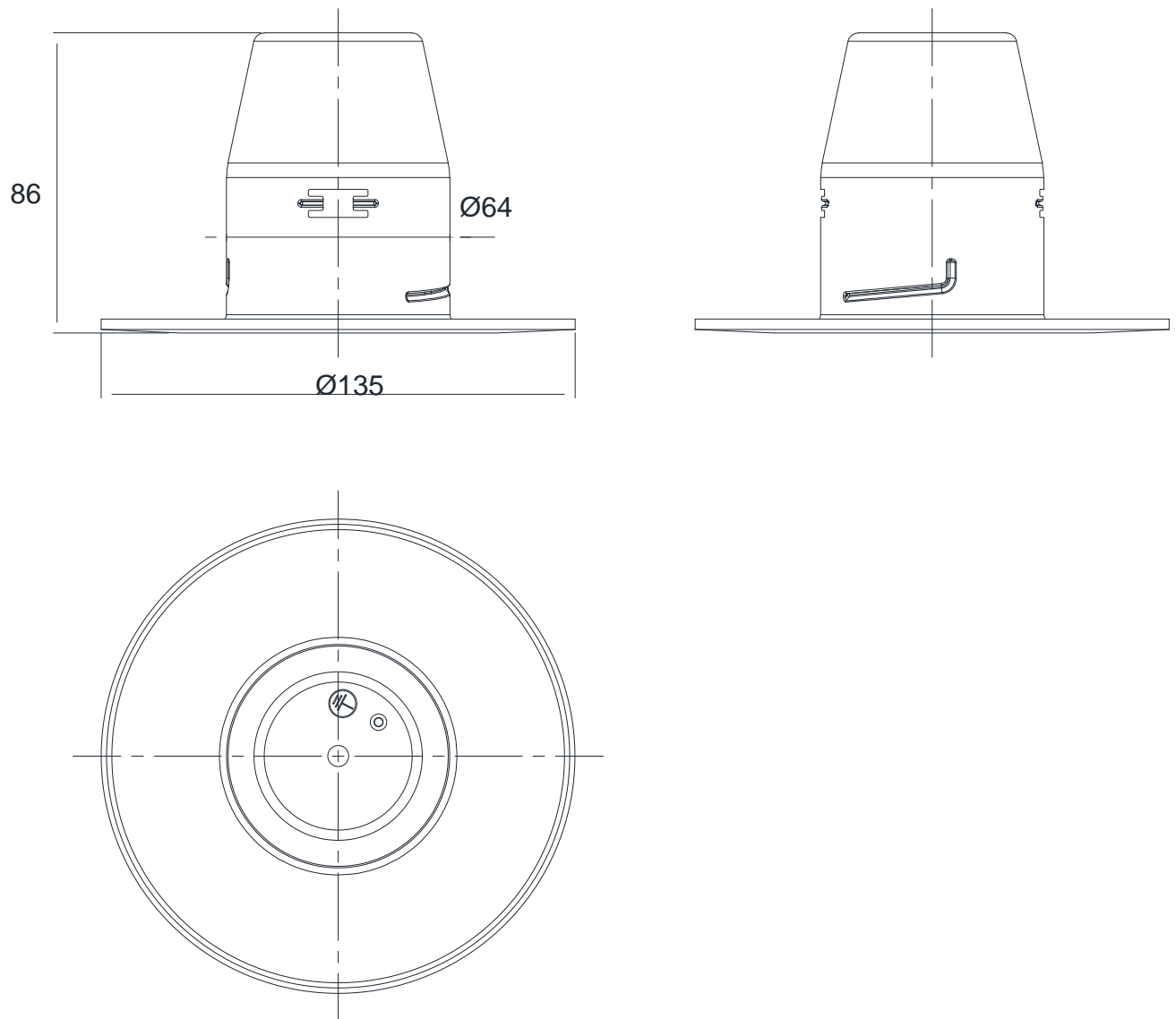
Do not scale. All dimensions are in mm

Figure 12 – Downlight 10- JC010040



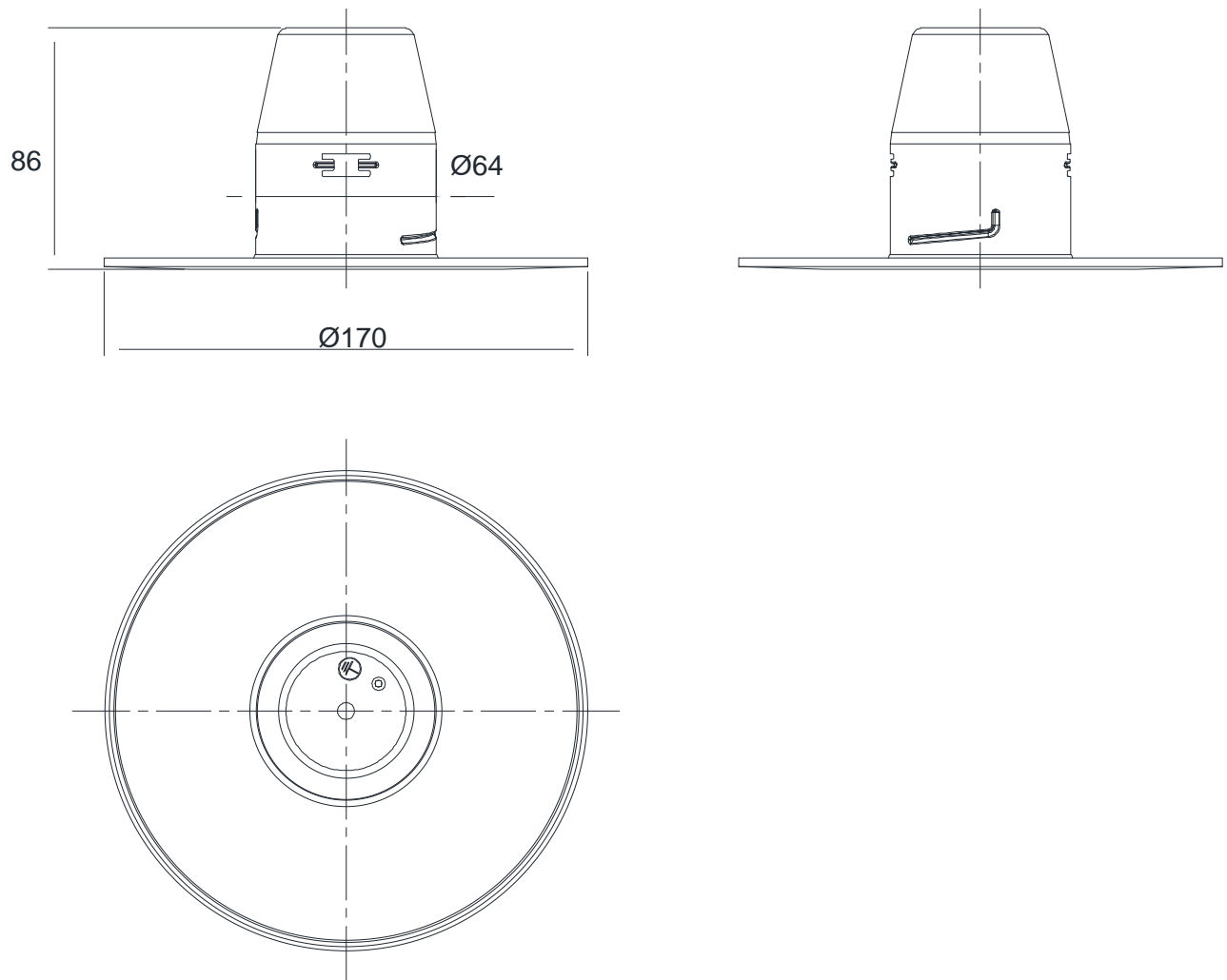
Do not scale. All dimensions are in mm

Figure 13 – Downlight 11- JC010041



Do not scale. All dimensions are in mm

Figure 14 – Downlight 12- JC010042



Do not scale. All dimensions are in mm

Schedule of Components

(Refer to Figures 1 to 14)
(All values are nominal unless stated otherwise)
(All other details are as stated by the sponsor)

<u>Item</u>	<u>Description</u>
1. End beams & noggins	
Material	: Solid timber (C24)
Section size	: 220 mm deep x 47 mm wide
Fixing method	: End beams through fixed with four nails to each joist joint (2 nails per flange). Noggins fixed to joists with two nails per joint. Joists were spaced at 600 mm nominal centres.
Fixings	
i. type	: Ring shank nails
ii. size	: 100 mm long x 3.8 mm diameter
2. Timber Joists	
Manufacturer	: Staircraft
Reference	: TFSi Joist
Material	: Softwood (Grade C24) flange and OSB web.
Section size	: 47 mm wide x 220 mm deep (47 mm wide x 47 mm deep flange, 12 mm thick web)
Fixing method	: Through fixed to end beams with four nails at each joist joint (2 nails per flange). Joists were spaced at 600 mm centres.
Fixings	
i. type	: Ring shank nails
ii. size	: 100 mm long x 3.8 mm diameter
3. End insulation	
Manufacturer	: Rockwool
Reference	: ProRox SL 920 UK
Material	: Stone wool
Thickness	: 50 mm (uncompressed)
Density	: 45 kg/m ³ (stated)
Fixing method	: Cut to size and friction fitted between end beams and noggins
4. Floorboards	
Manufacturer	: Norbord
Reference	: Caberfloor P5
Material	: Chipboard (tongue & groove)
Thickness	: 22 mm
Density	: 669 kg/m ³ (stated)
Fixing method	: Through fixed to timber framework with screws. Adhesive was applied to the top of joists and to tongue and groove joints
Fixings	
i. manufacturer	: Reisser
ii. reference	: Cutter High Performance Wood Screws
iii. type	: Yellow tropicalised steel screws
iv. size	: 60 mm long x 4.0 mm diameter

<u>Item</u>	<u>Description</u>
v. centres	: 200 mm
Adhesive	
i. reference	: Caberfix
ii. type	: D4 grade adhesive
5. Ceiling boards	
Manufacturer	: British Gypsum
Reference	: Gyproc WallBoard
Material	: Aerated high-density gypsum core encased in strong paper liners
Thickness	: 12.5mm
Density	: 616 kg/m ³ (stated)
Fixing method	: Through fixed to internal framework with screws. Board joints were taped and filled
Fixings	
i. manufacturer	: British Gypsum
ii. reference	: 55 mm Collated Drywall Screws
iii. type	: Black phosphate coated steel screws
iv. size	: 55 mm long x 3.5 mm diameter
v. centres	: 230mm
Tape	
i. manufacturer	: British Gypsum
ii. reference	: Gyproc Joint Tape
Filler	
i. manufacturer	: British Gypsum
ii. reference	: Gyproc Ready Mix Joint Cement
6. Downlight 1	
Manufacturer	: JCC Lighting
Reference	: JC1001
Description	: Fixed LED recessed downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 48mm (can), 58 mm (overall)
ii. overall diameter	: 84mm
iii. cut-out diameter	: 70 mm
7. Downlight 2	
Manufacturer	: JCC Lighting
Reference	: JC10010
Description	: Fixed LED Recessed Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 46 mm
ii. overall diameter	: 80 mm
iii. cut-out diameter	: 70 mm
8. Downlight 3	
Manufacturer	: JCC Lighting
Reference	: JC1101
Description	: X50 Fire Rated Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)

<u>Item</u>	<u>Description</u>
8. Downlight 3 (continued)	
Overall sizes	:
i. height	: 58 mm (can), 60 mm (overall)
ii. overall diameter	: 83 mm
iii. cut-out diameter	: 68 mm
9. Downlight 4	
Manufacturer	: JCC Lighting
Reference	: JC1102
Description	: X50 Tilt Fire Rated Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 62 mm
ii. overall diameter	: 100 mm
iii. cut-out diameter	: 82 mm
10. Downlight 5	
Manufacturer	: JCC Lighting
Reference	: JC1020
Description	: LED Recessed Plaster in Downlight
Material	: Mild steel (can), aluminium (bezel) polycarbonate (connection block)
Overall sizes	:
i. height	: 80mm
ii. overall diameter	: 121
iii. cut-out diameter	: 70 mm
11. Downlight 6	
Manufacturer	: JCC Lighting
Reference	: JC010036
Description	: GU10 Recessed Plaster in downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 130mm
ii. overall diameter	: 122 mm
iii. cut-out diameter	: 68 mm
12. Downlight 7	
Manufacturer	: JCC Lighting
Reference	: JC010037
Description	: GU10 Recessed 100mm Converter Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 86 mm
ii. overall diameter	: 100 mm
iii. cut-out diameter	: 90 mm
13. Downlight 8	
Manufacturer	: JCC Lighting
Reference	: JC010038
Description	: GU10 Recessed 135mm Converter Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip) polycarbonate (connection block)

<u>Item</u>	<u>Description</u>
13. Downlight 8 (continued)	
Overall sizes	:
i. height	: 86 mm
ii. overall diameter	: 135 mm
iii. cut-out diameter	: 125 mm
14. Downlight 9	
Manufacturer	: JCC Lighting
Reference	: JC010039
Description	: GU10 Recessed 170mm Converter Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate connection block)
Overall sizes	:
i. height	: 86 mm
ii. overall diameter	: 170 mm
iii. cut-out diameter	: 157 mm
15. Downlight 10	
Manufacturer	: JCC Lighting
Reference	: JC010040
Description	: GU10 Recessed 100mm Converter Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 86 mm
Item	Description
ii. overall diameter	: 100 mm
iii. cut-out diameter	: 90 mm
16. Downlight 11	
Manufacturer	: JCC Lighting
Reference	: JC010041
Description	: GU10 Recessed 135mm Converter Downlight
Material	: Mild steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 86 mm
ii. overall diameter	: 135 mm
iii. cut-out diameter	: 125 mm
17. Downlight 12	
Manufacturer	: JCC Lighting
Reference	: JC010042
Description	: GU10 Recessed 170mm Converter Downlight
Material	: Steel (can), aluminium (bezel), steel (spring clip), polycarbonate (connection block)
Overall sizes	:
i. height	: 86 mm
ii. overall diameter	: 170 mm
iii. cut-out diameter	: 157 mm

Test Observations

Time		All observations are from the exposed face unless noted otherwise.
- 30	00	Load applied
00	00	The test commences.
03	15	Paper layer of boards burning away.
05	00	The jointing compound is coming away.
08	00	All the light fixings have charred black.
12	00	Light fixings starting to melt and come away (G, H, F, I).
14	30	Joints opening around 3-4 mm. Boards starting to sag.
17	00	All the lights now melting into the furnace chamber.
22	00	First layer of boards falling away.
24	00	The furnace is volatile flaming. Nothing is visible from the exposed face.
34	50	Deflection failure occurs.
35	00	Test discontinued.

Test Photographs

The exposed face of the floor assembly prior to test



The unexposed face of the floor assembly prior to test



The unexposed
face of the floor
assembly after 10
minutes of testing



The unexposed
face of the floor
assembly after 20
minutes of testing



The unexposed
face of the floor
assembly after 30
minutes of testing



The unexposed
face of the floor
assembly after 35
minutes of testing



Temperature, Pressure and Deflection Data

Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The
Standard BS EN 1363-1: 2020

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	34
1	349	222
2	445	440
3	502	544
4	544	555
5	576	568
6	603	583
7	626	597
8	646	630
9	663	685
10	678	706
11	693	712
12	706	722
13	717	728
14	728	735
15	739	742
16	748	750
17	757	755
18	766	763
19	774	768
20	781	775
21	789	780
22	796	786
23	802	792
24	809	801
25	815	789
26	820	807
27	826	837
28	832	845
29	837	851
30	842	839
31	847	845
32	852	854
33	856	860
34	860	866
35	865	870

Individual Temperatures And Mean Recorded On The Unexposed Surface Of The Specimen

Time Mins	T/C Number 211 Deg. C	T/C Number 212 Deg. C	T/C Number 213 Deg. C	T/C Number 214 Deg. C	T/C Number 215 Deg. C	Mean Temp Deg. C
0	28	28	28	29	28	28
1	28	28	28	29	28	28
2	28	28	28	29	28	28
3	28	28	28	29	28	28
4	28	28	28	29	28	28
5	28	28	28	29	28	28
6	28	28	28	29	28	28
7	28	29	28	29	29	29
8	29	29	29	29	29	29
9	29	30	29	30	29	29
10	30	30	30	30	30	30
11	31	31	30	31	31	31
12	31	32	31	32	31	31
13	32	33	32	33	32	32
14	33	33	32	33	33	33
15	34	34	33	34	34	34
16	35	35	34	35	35	35
17	36	36	35	36	35	36
18	37	38	35	37	36	37
19	38	39	36	38	37	38
20	39	41	38	40	39	39
21	41	43	39	41	40	41
22	43	45	41	43	42	43
23	46	48	44	46	44	46
24	60	51	51	48	47	51
25	74	55	64	52	51	59
26	82	59	70	65	63	68
27	86	63	73	77	71	74
28	87	67	75	83	76	78
29	87	72	77	86	78	80
30	88	79	79	87	81	83
31	88	83	81	89	82	85
32	88	85	82	90	84	86
33	89	86	85	91	85	87
34	90	87	103	92	86	92
35	93	88	124	93	86	97

Individual Temperatures Recorded On The Unexposed Surface Of The Specimen Adjacent to Joints

Time Mins	T/C Number 216 Deg. C	T/C Number 217 Deg. C	T/C Number 219 Deg. C	T/C Number 220 Deg. C	T/C Number 221 Deg. C	T/C Number 222 Deg. C
0	29	29	29	29	29	25
1	29	29	29	29	29	25
2	29	29	29	29	29	25
3	29	29	29	29	29	25
4	29	29	29	29	29	25
5	29	29	29	29	29	25
6	29	29	29	29	29	25
7	29	29	30	29	29	25
8	29	30	30	29	29	25
9	30	30	30	30	30	26
10	30	31	31	30	30	26
11	31	32	32	31	31	27
12	32	32	33	32	32	28
13	32	33	33	33	33	28
14	33	34	34	33	34	29
15	34	36	36	34	35	30
16	35	37	37	35	36	31
17	36	38	38	36	37	32
18	37	39	39	37	38	33
19	38	40	40	38	39	34
20	39	42	42	40	40	36
21	41	43	44	41	42	38
22	42	46	46	43	44	40
23	44	48	49	45	46	43
24	46	50	52	48	48	46
25	49	54	57	51	51	49
26	54	59	65	57	54	55
27	64	68	74	68	63	66
28	75	78	80	75	72	72
29	83	84	83	80	76	76
30	87	88	85	84	80	78
31	89	90	86	86	83	80
32	90	92	86	88	85	82
33	90	93	87	89	86	85
34	90	94	88	91	89	90
35	90	97	90	92	96	110

Individual Temperatures Recorded At Mid-Height Of The Cavity Coincidental With The Light Fittings

Time Mins	T/C Number 223 Deg. C	T/C Number 224 Deg. C	T/C Number 225 Deg. C	T/C Number 226 Deg. C	T/C Number 227 Deg. C	T/C Number 229 Deg. C
0	32	31	32	32	32	34
1	32	33	33	33	33	34
2	46	49	50	44	46	43
3	60	63	64	63	62	62
4	69	70	69	71	69	70
5	77	79	76	79	77	74
6	85	87	85	88	85	79
7	92	95	92	95	92	90
8	99	99	97	98	99	96
9	102	103	101	103	106	100
10	114	109	106	105	115	105
11	121	116	113	124	125	108
12	130	127	127	134	141	113
13	159	155	157	149	155	120
14	182	179	184	189	183	134
15	200	199	204	208	200	160
16	215	207	221	222	220	178
17	224	219	231	241	231	193
18	231	230	242	251	247	202
19	245	243	252	265	258	212
20	248	249	264	281	270	220
21	255	261	272	282	282	218
22	264	306	283	291	292	226
23	393	420	288	645	661	235
24	451	466	294	710	717	241
25	474	487	311	685	720	248
26	514	533	325	718	772	255
27	580	568	335	757	803	264
28	612	580	376	769	813	276
29	614	589	407	776	814	292
30	631	605	588	772	798	578
31	634	629	631	784	816	668
32	646	643	667	789	829	698
33	652	658	685	801	832	723
34	652	685	799	809	840	742
35	658	697	817	818	844	751

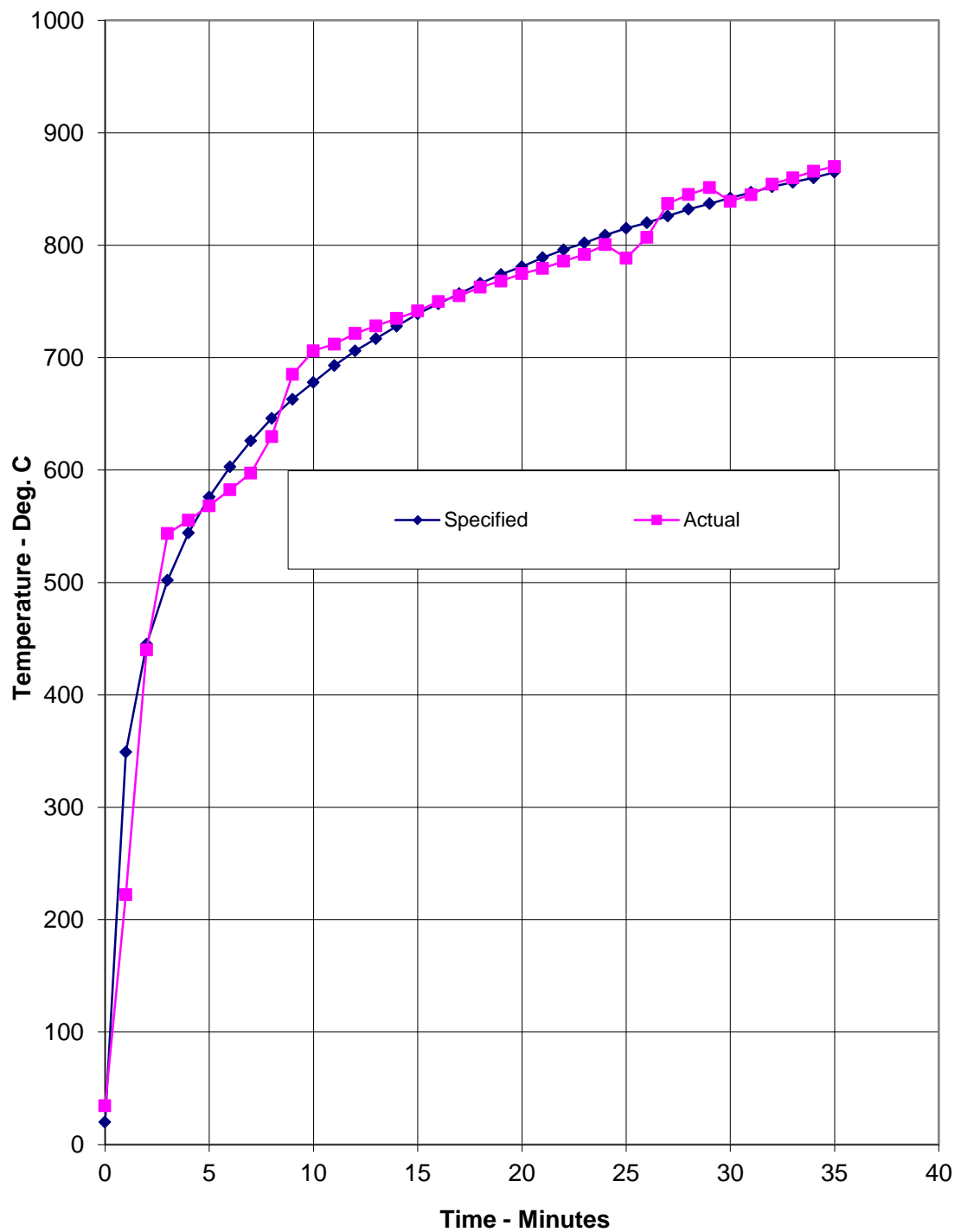
Individual Temperatures Recorded At Mid-Height Of The Cavity Coincidental With The Light Fittings

Time Mins	T/C Number 230 Deg. C	T/C Number 231 Deg. C	T/C Number 232 Deg. C	T/C Number 233 Deg. C	T/C Number 234 Deg. C	T/C Number 235 Deg. C
0	35	34	34	34	35	35
1	36	35	36	48	35	51
2	51	49	50	49	50	50
3	65	67	68	64	65	64
4	73	75	74	71	73	71
5	79	88	81	79	87	79
6	89	99	90	88	94	87
7	99	104	99	95	104	94
8	104	110	101	100	109	100
9	108	108	105	105	117	104
10	113	122	111	109	127	110
11	118	141	120	116	126	116
12	133	152	129	122	139	123
13	162	183	151	140	158	137
14	187	207	175	159	180	154
15	209	231	194	181	201	175
16	231	233	215	193	217	191
17	241	248	223	207	234	202
18	251	262	233	218	242	214
19	257	271	245	229	251	226
20	269	275	258	237	253	238
21	275	286	265	247	258	243
22	287	290	272	257	261	279
23	315	317	279	267	271	291
24	339	361	290	278	292	313
25	690	702	625	442	446	435
26	704	766	736	493	508	517
27	755	814	769	568	527	556
28	767	830	767	591	588	579
29	785	837	795	625	614	619
30	796	826	782	641	617	616
31	783	835	810	646	633	643
32	798	844	816	662	680	657
33	807	849	824	672	697	662
34	818	854	823	762	762	668
35	831	861	825	788	794	668

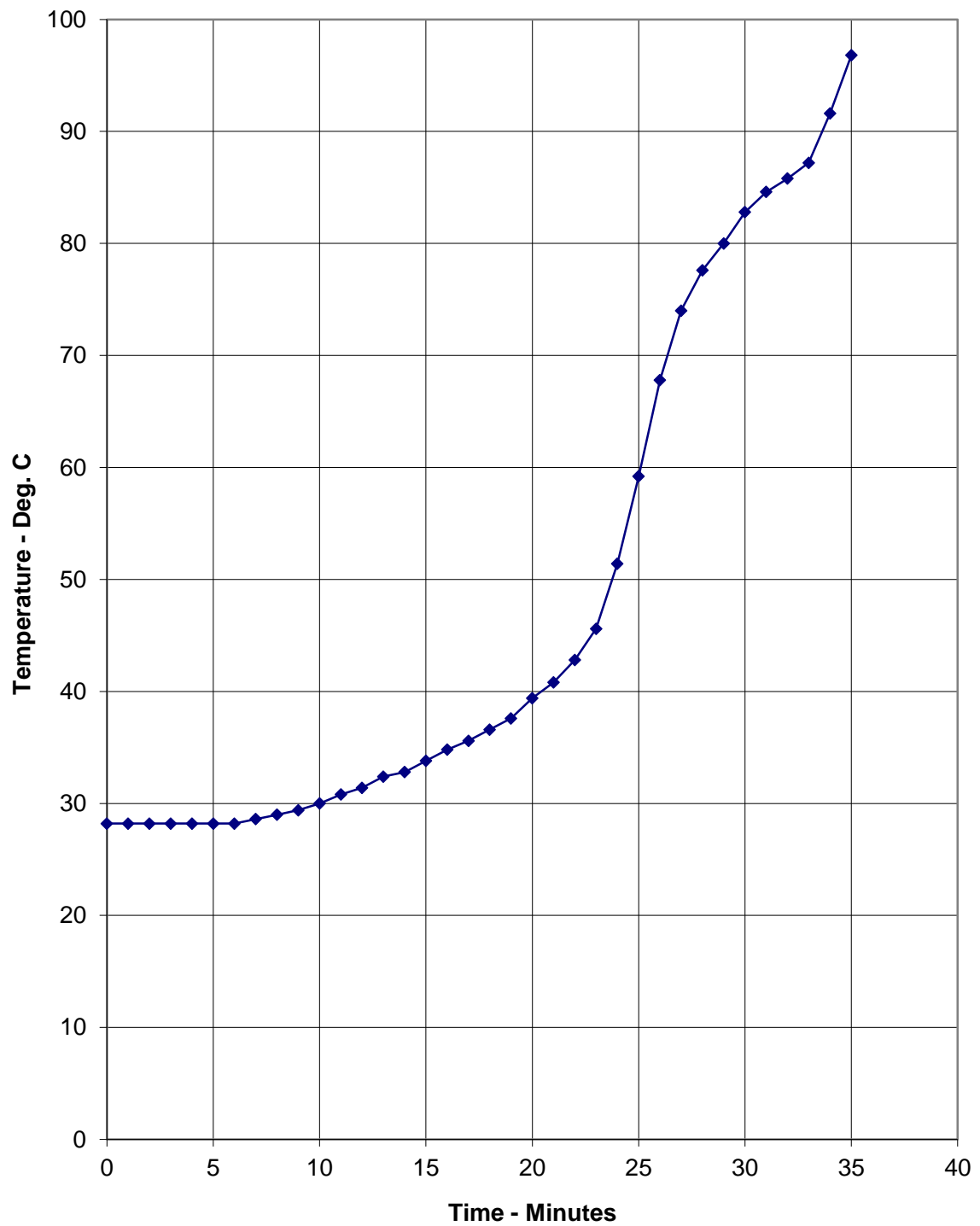
Central Vertical Deflection Of The Specimen Floor

Time Mins	Central Vertical Deflection mm	Rate Of Deflection mm/min
0	0.0	0.0
1	0.1	0.1
2	0.4	0.3
3	0.7	0.2
4	0.8	0.2
5	1.0	0.2
6	1.2	0.2
7	1.5	0.3
8	1.5	0.0
9	1.8	0.3
10	2.0	0.2
11	2.2	0.2
12	2.4	0.2
13	2.6	0.3
14	2.9	0.3
15	3.3	0.3
16	3.7	0.5
17	4.2	0.4
18	4.6	0.4
19	5.1	0.5
20	5.4	0.3
21	6.0	0.6
22	6.6	0.6
23	7.4	0.8
24	9.9	2.5
25	15.1	5.2
26	28.6	13.5
27	46.1	17.5
28	58.8	12.7
29	71.2	12.4
30	82.0	10.8
31	96.0	14.0
32	116.4	20.4
33	142.0	25.6
34	165.8	23.8
35	194.2	28.4

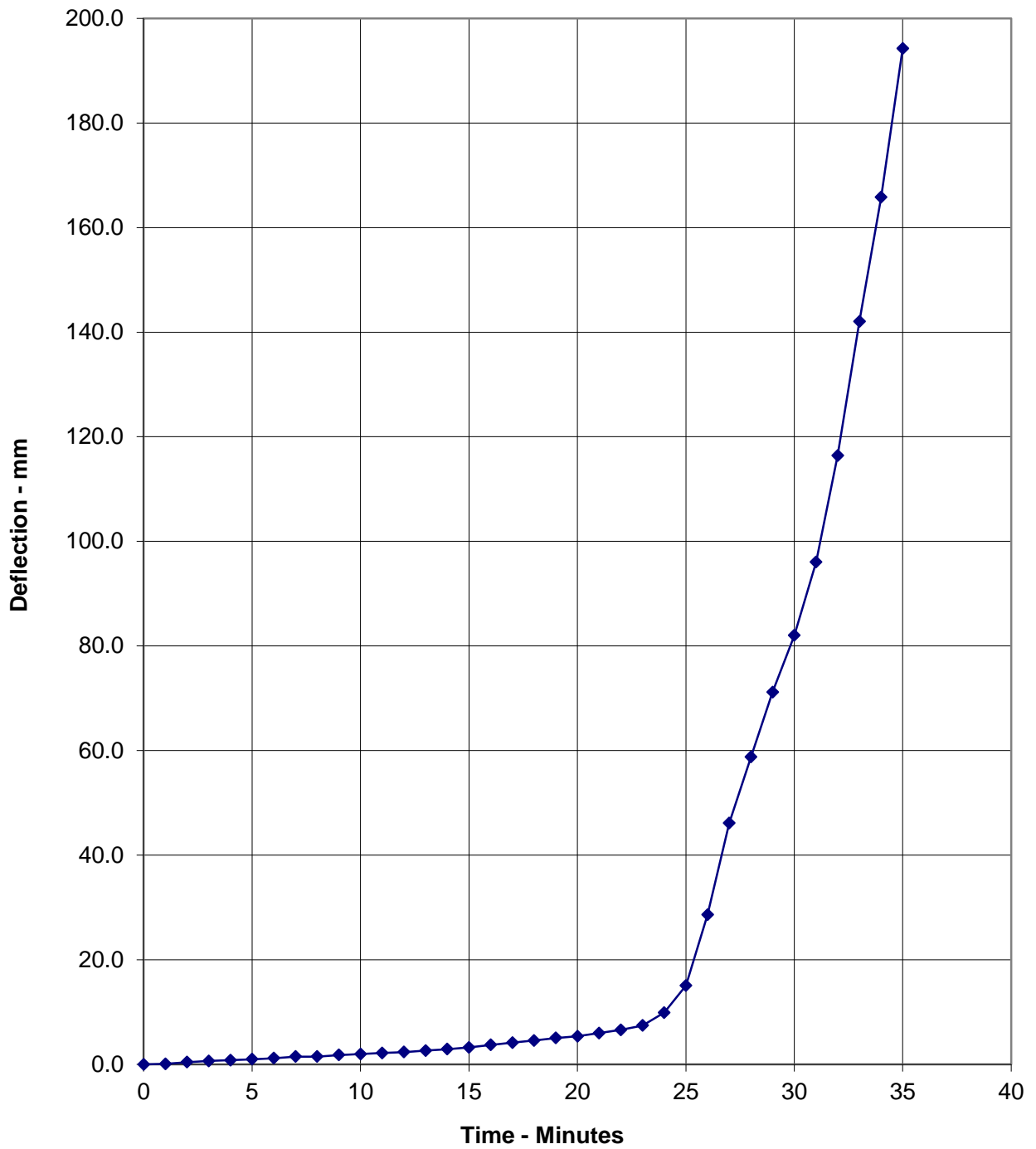
Graph Showing Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard



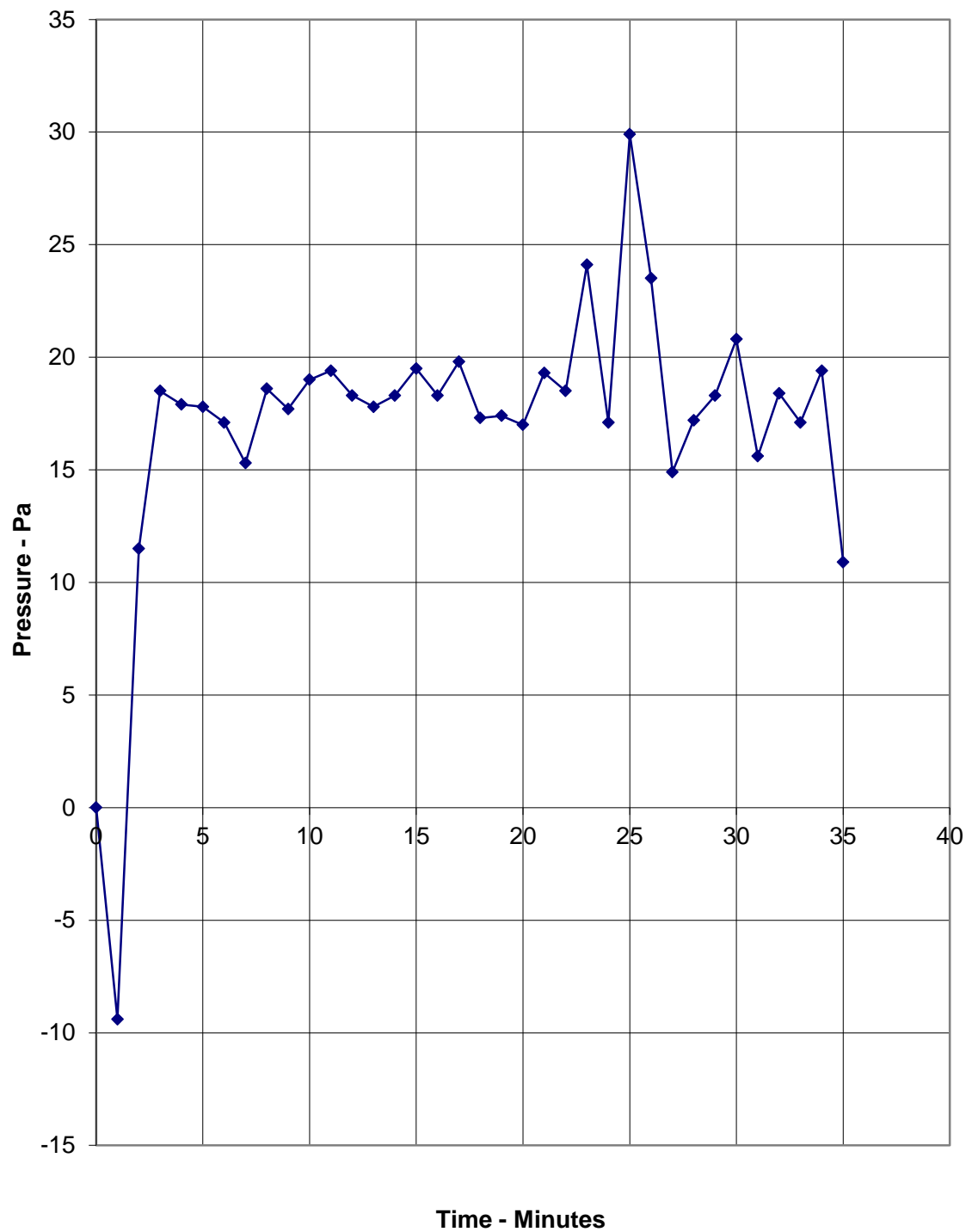
Graph Showing Mean Temperature Recorded On The Unexposed Surface Of The Specimen



Graph Showing The Recorded Vertical Deflection Of The Specimen



Graph Showing Recorded Furnace Pressure 100 mm Below The Underside Of The Specimen



On-going Implications

Limitations

This report details the method of construction, the test conditions and the results obtained when the specific elements of construction described herein were tested following the procedure outlined in BS EN 1363-1: 2020, and where appropriate BS EN 1363-2: 1999. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report. Annex A of BS EN 1363-1: 2020, provides guidance information on the application of fire resistance tests and the interpretation of test data.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

EGOLF

Certain aspects of some fire test specifications are open to different interpretations. EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed

Field of Direct Application

The results are directly applicable to a similar untested floor construction provided the following is true:

a) With respect to the structural building member:

The maximum moments and shear forces, which when calculated on the same basis as the test load, shall not be greater than those tested.

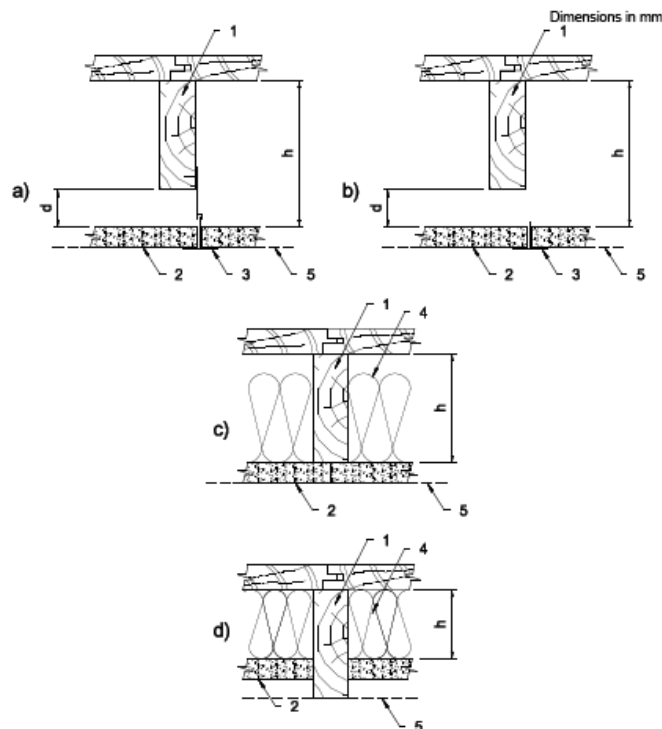
b) With respect to the ceiling system:

The size of panels of the ceiling lining may be increased by a maximum of 5 % but limited to a maximum of 50 mm. The length of the grid members can be increased accordingly.

The total area occupied by fixtures and fittings relative to the area of the ceiling lining is not increased and the maximum tested opening in the lining is not exceeded.

c) With respect to the cavity:

The height of the cavity 'h' and the minimum distance 'd' between the ceiling and the structural members (see Figure below) are equal to or greater than those tested.



KEY

- | | |
|--|---|
| a) suspended ceiling | 4 insulation |
| b) self-supported ceiling | 5 pressure reference line |
| c) and d) direct fixed ceiling with insulation in cavity | d distance between ceiling and structural members |
| 1 supporting construction (joist) | h height of cavity |
| 2 ceiling lining | |
| 3 supporting frame | |