



INBOX 2 X 2 NB1-22

Specification Data



Luminaire	INBOX 2 X 2 4-Sided Optics (NB1-22)	Type
Project		
Product		
Notes		

Performance Summary	Inbox 2 x 2 4 - Sided			
	A	B	C	D
Light (lm)	2700	3300	4300	5100
Energy (W)	23	29	38	47
Efficacy (lm/W)	119	117	115	111
Color Rendering (CRI)	80+	80+	80+	80+
Color Accuracy (SDCM)	< 2	< 2	< 2	< 2
L70 Estimate (h)	200,000	200,000	200,000	200,000
Lumen Maintenance per TM21 (@ 60,000 h)	L90	L90	L90	L90

DLC qualified for each lumen output (A, B, C, D) in 3000K, 3500K & 4000K. Summary values are nominal and based on 4000K CCT.



SPECIFICATION

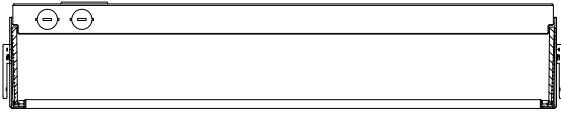
NB1		22										OPTIONS		CONTROLS	
1	2	3	4	5	6										
1. FAMILY	2. SIZE	3. ENERGY ¹	4. CCT	5. DRIVER	6. VOLTAGE	OPTIONS				CONTROLS					
NB1 Inbox	22 2 x 2 (4-sided optics)	A 23 W B 29 W	30 3000 K 35 3500 K	E1 eldoLED ECO 0-10V Dim 1% E2 eldoLED SOLO 0-10V Dim 0.1%	M 120 - 277 V 3 347 V ⁴	B Battery Pack ⁵ C Chicago Plenum F 6' Flex Whip K Drywall Flange Kit									
NB2 Inbox	12 1 x 2 (2-sided) 14 1 x 4 (2-sided) 22 2 x 2 (2-sided) 24 2 x 4 (2-sided)	C 38 W D 47 W ²	40 4000 K W2 2700-6500 K	E3 eldoLED ECO DALI 1% E4 eldoLED SOLO DALI Dim 0.1% F1 Factory Non- Dim F2 Factory 0-10V Dim 3% L1 Lutron Hi-Lume 1%-H EcoSystem W1 eldoLED DUAL DALI Dynamic White 0.1% ^{3,6}											

DYNAMIC WHITE CONTROLS^{3,6}

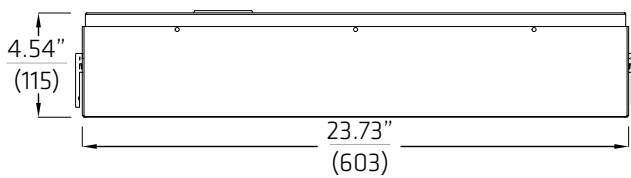
- WF1** Fluxwerx Wall Control
- WN1** Acuity nLight
- WC1** 0-10V Linear Dim
- WC2** 0-10V Log Dim
- WD1** DALI Linear Dim
- WD2** DALI Inverse Log Dim

NOTES					
¹ Add 4W to above for 347V with E1-4/L1	² 1 x 4 2 x 4 2 x 2 (4 sided) only	³ Available in 2x2 (4-sided) only	⁴ 347 V Driver for F1/F2 347 V Transformer & Driver for E1-4/L1/W1	⁵ Available for 120 - 277V	⁶ Refer to Dynamic White control options on page 2.

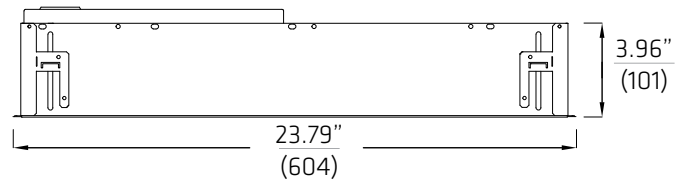
CROSS SECTION



DIMENSIONS inches (mm)



FRONT VIEW



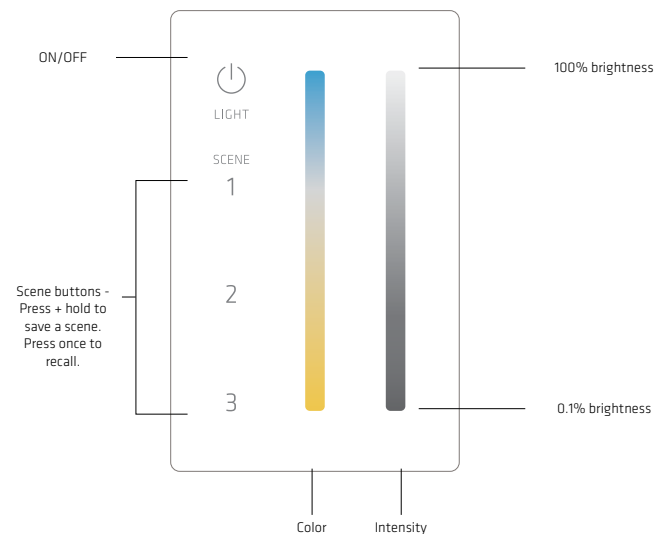
SIDE VIEW

DYNAMIC WHITE CONTROL OPTIONS

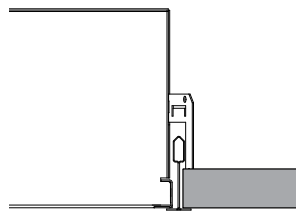
Controls Protocol	Control Curve	Controls Brand	Dynamic White Luminaire Code	Controller Components * (ordered separately)	
DALI	Linear	FLUXWERX e.g. Lutron, Crestron	WF1 WD1	Fluxwerx Wall Controller	
	Inverse Log	e.g. Distech, Helvar	WD2	Controller supplied by others	
nLight	Linear	Acuity	WN1	Controller Supplied by others	Factory installed nLight converter
0-10V	Linear	e.g. Leviton, Watt Stopper, Crestron, Pass & Seymour	WC1		Fluxwerx 0-10V converter per zone
	Log	e.g. Lutron, Cooper Controls	WC2		

* See Dynamic White controller data sheet

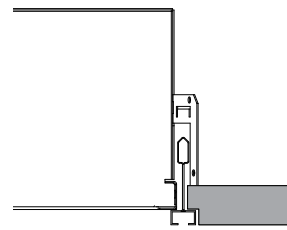
FLUXWERX WALL CONTROLLER



CEILING INTEGRATION GRID

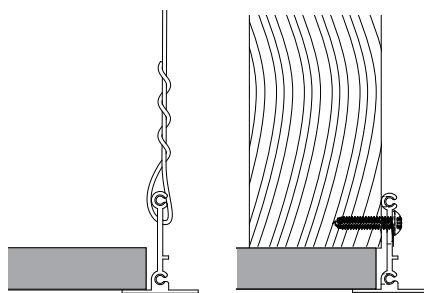


FLAT GRID

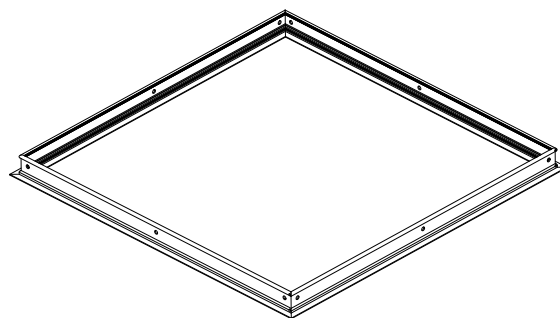


SLOT GRID

CEILING INTEGRATION DRYWALL



DRYWALL FLANGE KIT



Required Aperture: 24.63" x 24.63" (625 x 625)

CONSTRUCTION

- Die formed 22 ga. steel housing
- Quick wire access plate and integral seismic restraint tabs/tie-offs
- Option for (K) drywall flange kit
- High reflectance diffuse white textured powdercoat

OPTICAL

- Anidolic optical structures with linear light extraction elements
- Precision extruded high transmittance clear acrylic lenses
- Long life LED system designed for typical TM21 lumen maintenance \geq L90 @ 60,000 h
- Available in CCTs 3000 K, 3500 K, 4000 K or 2700-6500 K with CRI \geq 80 and R9 \geq 0, all with color accurate binning \leq 2 SDCM

ELECTRICAL

- Integral high efficiency drivers 120 - 277 V or 347 V; 50 - 60 Hz
- Power Factor $>$ 0.90
- Total Harmonic Distortion $<$ 20%
- F2:0 - 10 V Dim Range: 3 - 100%
- Optional Battery Pack
- Optional Lutron: Hi-lume H-Series EcoSystem LED drivers for 100 - 1% (PWM) dim range
- Optional flex whip: 6' prewired
- Surge Protection: Meets ANSI C82.11 spec and ANSI/IEEE C62.41
- Inrush Current: Meets NEMA 410

WEIGHT

- Maximum 17 lb (7.6 kg)
- Maximum 21 lb (9.5 kg) with battery pack

WARRANTY

- 5 year limited warranty on all components and workmanship

ENVIRONMENTAL

- Designed for use in damp or dry indoor environments with room side operating temperatures of 0 - 30° C (32 - 86° F)

INDEPENDENT TESTING

- IESNA LM79
- IESNA LM80 (LED@ 10,000 h)

APPROVALS

- UL Listed (USA + Canada)
- CCEA Chicago Plenum
- DesignLights Consortium[®]
- Lighting Facts[®]
- IC Rated

Product	Inbox 2x2 4-sided	Description	Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy		
Version	NB1-22A40	2x2 - 4 sided LED A Lumens CCT 4000 K	CCT Color Temperature	4000 K	2745	23	119.2	82	1.8	< 2
Report	11660485.02			3500 K	2655	23	115	83	4.5	< 2
				3000 K	2565	23	113	82	4.3	< 2

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle				Zonal Lumens
	0°	22.5°	45°	67.5°	90°
0°	517	517	517	517	517
5°	528	522	518	527	529
15°	638	644	667	640	631
25°	682	739	782	734	674
35°	637	736	804	736	629
45°	551	673	739	673	546
55°	427	565	610	564	422
65°	290	400	455	400	287
75°	191	266	251	265	188
85°	63	93	78	85	57
90°	3	4	4	5	5
95°					
105°					
115°					
125°					
135°					
145°					
155°					
165°					
175°					
180°					

LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30°	575	N.A.	21
0-60°	2017	N.A.	74
0-90°	2745	N.A.	100
90-180°	0	N.A.	0
Total Luminaire	0-180°	2745	N.A.

LUMINANCE DATA (CD/M²)

Vertical Angle	0°	45°	90°
45°	2411	3229	2386
55°	2303	3286	2273
65°	2122	3329	2097
75°	2276	3000	2246
85°	2224	2771	2026

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling	80				70				20			
	70	50	30	10	70	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	111	111	106	106	102
1	107	102	97	93	105	100	91	95	88	91	86	88
2	97	88	80	74	94	86	73	82	71	79	69	76
3	87	76	67	60	85	74	59	71	58	68	57	66
4	80	67	57	50	77	65	49	63	49	60	48	58
5	73	59	49	42	70	58	42	56	41	53	41	52
6	67	53	43	36	65	52	36	50	36	48	35	46
7	62	47	38	31	60	46	31	45	31	43	31	42
8	57	43	34	28	55	42	28	41	27	39	27	38
9	53	39	30	25	52	38	24	37	24	36	24	35
10	50	36	27	22	48	35	22	34	22	33	22	32

Integrating Sphere and Photometric results at 4000K by an independent accredited testing laboratory per IES LM-79-2008 and ANSI C78.377-2011. Results for 3000K, 3500K scaled based on integrating sphere results at 47W (D). Candlepower Distribution scaled per total lumens of Integrating Sphere results.

Product	Inbox 2x2 4-sided	Description	Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy		
Version	NB1-22B40	2x2 - 4 sided LED B Lumens CCT 4000 K	CCT Color Temperature	4000 K	3334	28.4	117.4	82	2	< 2
Report	11660485.03			3500 K	3281	28	115	83	4.5	< 2
				3000 K	3227	28	114	82	4.3	< 2

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle				Zonal Lumens
	0°	22.5°	45°	67.5°	90°
0°	628	628	628	628	628
5°	641	634	629	640	643
15°	775	782	810	777	766
25°	829	897	949	892	818
35°	774	894	976	894	764
45°	670	817	897	817	663
55°	519	686	741	685	512
65°	352	486	553	486	348
75°	231	323	305	322	228
85°	76	112	95	103	69
90°	3	4	5	6	6
95°					
105°					
115°					
125°					
135°					
145°					
155°					
165°					
175°					
180°					

LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30°	698	N.A.	21
0-60°	2450	N.A.	74
0-90°	3334	N.A.	100
90-180°	0	N.A.	0
Total Luminaire	0-180°	3334	N.A.

LUMINANCE DATA (CD/M²)

Vertical Angle	0°	45°	90°
45°	2929	3922	2898
55°	2798	3992	2760
65°	2578	4043	2546
75°	2764	3642	2727
85°	2703	3366	2462

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling	80				70				20			
	70	50	30	10	70	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	111	111	106	106	102
1	107	102	97	93	105	100	91	95	88	91	86	88
2	97	88	80	74	94	86	73	82	71	79	69	76
3	87	76	67	60	85	74	59	71	58	68	57	66
4	80	67	57	50	77	65	49	63	49	60	48	58
5	73	59	49	42	70	58	42	56	41	53	41	52
6	67	53	43	36	65	52	36	50	36	48	35	46
7	62	47	38	31	60	46	31	45	31	43	31	42
8	57	43	34	28	55	42	28	41	27	39	27	38
9	53	39	30	25	52	38	24	37	24	36	24	35
10	50	36	27	22	48	35	22	34	22	33	22	32

Product	Inbox 2x2 4-sided	Description	Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy		
Version	NB2-22C40	2x2 - 4 sided LED C Lumens CCT 4000 K	CCT Color Temperature	4000 K	4290	37.4	114.6	82	2	< 2
Report	11660485.04			3500 K	4221	37	113	83	4.5	< 2
				3000 K	4153	37	111	82	4.3	< 2

100% Dn

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle				Zonal Lumens
	0°	22.5°	45°	67.5°	90°
0°	808	808	808	808	808
5°	825	815	810	823	827
15°	998	1006	1042	1000	986
25°	1066	1154	1222	1147	1053
35°	996	1150	1256	1150	983
45°	862	1051	1154	1051	853
55°	668	883	953	881	659
65°	453	625	711	625	448
75°	298	416	392	414	294
85°	98	145	122	132	89
90°	4	5	7	8	7
95°					
105°					
115°					
125°					
135°					
145°					
155°					
165°					
175°					
180°					

LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30°	898	N.A.	21
0-60°	3153	N.A.	74
0-90°	4290	N.A.	100
90-180°	0	N.A.	0
Total Luminaire	4291	N.A.	100

LUMINANCE DATA (CD/M²)

Vertical Angle	0°	45°	90°
45°	3768	5046	3730
55°	3600	5136	3552
65°	3317	5202	3276
75°	3557	4687	3510
85°	3476	4331	3164

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling Wall	80				70				20				50				30				10				0			
	70	50	30	10	70	50	30	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10
0	119	119	119	119	116	116	116	111	111	106	106	102	102	100														
1	107	102	97	93	105	100	91	95	88	91	86	88	83	81														
2	97	88	80	74	94	86	73	82	71	79	69	76	68	66														
3	87	76	67	60	85	74	59	71	58	68	57	66	56	54														
4	79	67	57	50	77	65	49	63	49	60	48	58	47	45														
5	73	59	49	42	70	58	42	56	41	53	41	52	40	38														
6	67	53	43	36	65	52	36	50	36	48	35	46	35	33														
7	62	47	38	31	60	46	31	45	31	43	31	42	31	28														
8	57	43	34	28	55	42	28	41	27	39	27	38	27	25														
9	53	39	30	25	52	38	24	37	24	36	24	35	24	22														
10	50	36	27	22	48	35	22	34	22	33	22	32	22	20														

Integrating Sphere and Photometric results at 4000K by an independent accredited testing laboratory per IES LM-79-2008 and ANSI C78.377-2011. Results for 3000K, 3500K scaled based on integrating sphere results at 47W (D). Candlepower Distribution scaled per total lumens of Integrating Sphere results.

Product	Inbox 2x2 4-sided	Description	Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy		
Version	NB1-22D40	2x2 - 4 sided LED D Lumens CCT 4000 K	CCT Color Temperature	4000 K	5130	46.3	110.8	82	2	< 2
Report	11660485.07			3500 K	5048	46	109	83	4.5	< 2
				3000 K	4966	46	103	82	4.3	< 2

100% Dn

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle				Zonal Lumens
	0°	22.5°	45°	67.5°	90°
0°	966	966	966	966	966
5°	986	975	968	984	989
15°	1193	1204	1246	1196	1179
25°	1275	1380	1461	1372	1259
35°	1191	1375	1502	1375	1176
45°	1031	1257	1380	1257	1020
55°	799	1056	1139	1054	788
65°	542	748	850	747	536
75°	356	497	469	495	351
85°	117	173	146	158	107
90°	5	7	8	9	9
95°					
105°					
115°					
125°					
135°					
145°					
155°					
165°					
175°					
180°					

LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30°	1074	N.A.	21
0-60°	3770	N.A.	74
0-90°	5130	N.A.	100
90-180°	0	N.A.	0
Total Luminaire	5131	N.A.	100

LUMINANCE DATA (CD/M²)

Vertical Angle	0°	45°	90°
45°	4506	6034	4460
55°	4304	6142	4247
65°	3967	6221	3918
75°	4254	5605	4197
85°	4158	5179	3785

CO-EFFICIENTS OF UTILIZATION

Floor Ceiling Wall	80				70				20				50				30				10				0			
	70	50	30	10	70	50	30	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10
0	119	119	119	119	116	116	116	111	111	106	106	102	102	100														
1	107	102	97	93	105	100	91	95	88	91	86	88	83	81														
2	97	88	80	74	94	86	73	82	71	79	69	76	68	66														
3	87	76	67	60	85	74	59	71	58	68	57	66	56	54														
4	79	67	57	50	77	65	49	63	49	60	48	58	47	45														
5	73	59	49	42	70	58	42	56	41	53	41	52	40	38														
6	67	53	43	36	65	52	36	50	36	48	35	46	35	33														
7	62	47	38	31	60	46	31	45	31	43	31	42	31	28														
8	57	43	34	28	55	42	28	41	27	39	27	38	27	25														
9	53	39	30	25	52	38	24	37	24	36	24	35	24	22														
10	50	36	27	22	48	35	22	34	22	33	22	32	22	20														

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Product	Inbox 2x2 4-sided	Description
Version	NB1-22AW2	2x2 - 4 sided LED A lumens CCT 2700-6500 K
Report	FLUXWERX	

Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy	
					(CRI)	(R9)
CCT Color Temperature	2700 K	2500	23.75	105	82.4	4.5
	3000 K	2520	22.91	110	83.9	10.7
	3500 K	2580	22.13	117	85.9	19.2
	4000 K	2620	21.76	120	86.7	22.9
	5000 K	2630	21.86	120	86	17.9
	6500 K	2680	23.45	114	83.7	4.7

Product	Inbox 2x2 4-sided	Description
Version	NB1-22BW2	2x2 - 4 sided LED B lumens CCT 2700-6500 K
Report	FLUXWERX	

Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy	
					(CRI)	(R9)
CCT Color Temperature	2700 K	3010	29.79	101	82.4	4.5
	3000 K	3030	28.53	106	83.9	10.7
	3500 K	3120	27.55	113	85.9	19.2
	4000 K	3160	27.09	117	86.7	22.9
	5000 K	3170	27.22	116	86	17.9
	6500 K	3230	29.41	110	83.7	4.7

Integrating Sphere and Photometric results scaled from NB1-22 and PF1-A Dynamic White results from an independent accredited testing laboratory per IES LM-79-2008 and ANSI C78.377-2011. Candlepower Distribution scaled per total lumens of Integrating Sphere results.

Product	Inbox 2x2 4-sided	Description
Version	NB1-22CW2	2x2 - 4 sided LED C lumens CCT 2700-6500 K
Report	FLUXWERX	

Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy	
					(CRI)	(R9)
CCT Color Temperature	2700 K	3900	39.51	99	82.4	4.5
	3000 K	3930	38.19	103	83.9	10.7
	3500 K	4030	36.88	109	85.9	19.2
	4000 K	4090	36.27	113	86.7	22.9
	5000 K	4100	36.44	113	86	17.9
	6500 K	4190	39.01	107	83.7	4.7

Product	Inbox 2x2 4-sided	Description
Version	NB1-22DW2	2x2 - 4 sided LED D lumens CCT 2700-6500 K
Report	FLUXWERX	

Performance Summary		Light (lm)	Energy (W)	Efficacy (lm/W)	Color Accuracy	
					(CRI)	(R9)
CCT Color Temperature	2700 K	4710	49.59	95	82.4	4.5
	3000 K	4740	48.16	98	83.9	10.7
	3500 K	4870	46.51	105	85.9	19.2
	4000 K	4940	45.74	108	86.7	22.9
	5000 K	4960	45.95	108	86	17.9
	6500 K	5060	48.96	103	83.7	4.7