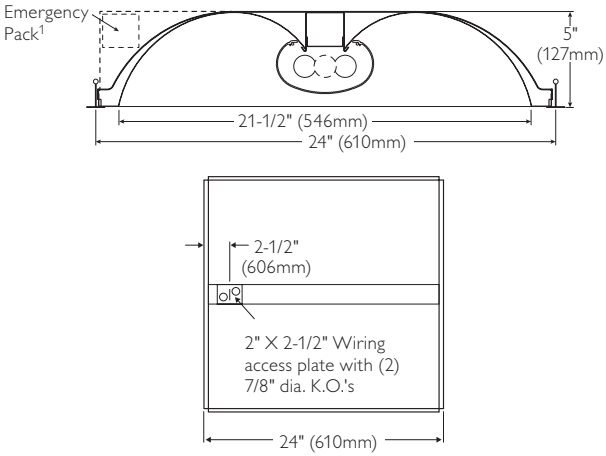
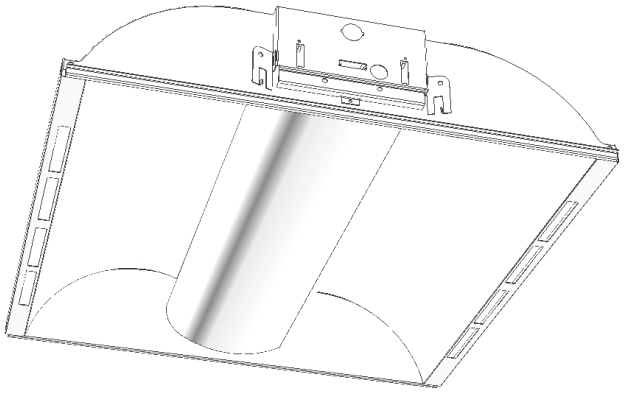
HP90 Air

Recessed 2'X2' Fluorescent; T8, T5, T5HO or TT5





Ordering Information

HP90	Body Style	Fixture Width	Ceiling Type	Lens Type	Reflector	Lamp Qty.	Lamps	Voltage	Ballast Type		Options
H9	**A**	**2**		**L**	**R**					–	
Direct/Indirect Recessed Fluorescent	**A** = Air supply or Return	**2** = 24" (Nominal Size)	**G** = 15/16" Standard grid **N** = 9/16" Narrow grid	**L** = Acrylic high light transmission linear prismatic lens	**R** = Specular aluminum	**1** = 1 Lamp **2** = 2 Lamps Note: TT5 available in 1 Lamp only	(by others) **FT** = TT5 (Nominal 22-1/5") **14** = 14W T5 **17** = 17W T8 **24** = 24W T5HO (Nominal 24")	**120** = 120v **277** = 277v **UNV** = 120-277v			Add appropriate suffix to catalog no., i.e.: (**C**)

<10THD	
1 or 2 Lamp Elec. T5/T5HO Program Start	**PG**
1 or 2 Lamp Elec. T5 Program Start Step-Dim (14 watt only)	**VY**
1 or 2 Lamp Elec. T5/T5HO LOL Dimming	**PF**
1 Lamp Elec. TT5 Instant Start (40 watt)	**IB**
1 Lamp Elec. TT5 Program Start (40 watt)	**PR**
1 Lamp Elec. TT5 Program Start (50 watt)	**BP**
1 Lamp Elec. TT5 Program Start (55 watt)	**BF**
1 Lamp Elec. TT5 Program Start Dimming	**PB**
1 or 2 Lamp Elec. T8 Instant Start	**HI**
1 or 2 Lamp Elec. T8 Program Start	**P2**
1 or 2 Lamp Elec. T8 Program Step-Dim	**V2**
1 or 2 Lamp Elec. T8 Program Start Dimming	**PS**

[1] If emergency pack or 2nd ballast are used access is gained through the adjacent ceiling tile.

Features

- Direct/indirect appearance with soft contoured interior.
- Translucent DR acrylic high light transmission linear prismatic lens.
- 95% reflective specular aluminum reflector.
- Air supply or return.
- Air return models meet UL 1598, Paragraph 9.2.2.5 requirements.
- Lens encloses lamp compartment.
- Lamp shield opens from either side.
- Ballast accessible from room side.[1]
- 80.3% efficient 2 lamp, 17W T8.
- 83.2% efficient 2 lamp, 14W T5.
- 72.9% efficient 1 lamp, 40W TT5.
- 80.3% efficient 1 lamp, 54W T5HO.
- Tension screws secure ends to body.
- Fixture fits flush to the face of standard grid ceiling types.
- Built-in earthquake clips.
- Can be continuous row mounted.
- Wiring access plate standard.
- Optional DALI ballast iGEN TECHNOLOGY accepts digital dimming controllers, scene controllers and automatic control devices.

Job Information **Type:**

Job Name:

Cat. No.:

Notes:

PHILIPS Day-Brite PHILIPS CFI

Recessed 2'X2' Fluorescent; T8, T5, T5HO or TT5

Specifications

Materials: Chassis Parts–Die-formed code gauge cold rolled steel.

Finish: Chassis exterior–white baked polyester enamel. **Cavity**—white baked polyester enamel. Rust preventative undercoating.

Lens: L–Linear prismatic translucent DR acrylic lens.

Reflector: R–Low iridescence specular aluminum with 95% reflectance.

Electrical: Thermally protected class "P' ballast C.B.M. approved, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.

Labels: I.B.E.W. and cULus. cULus Listed for damp locations.

This product may have a mercury containing lamp. Manage in accord with Disposal Laws. See: www.lamprecycle.org

Options & Accessories

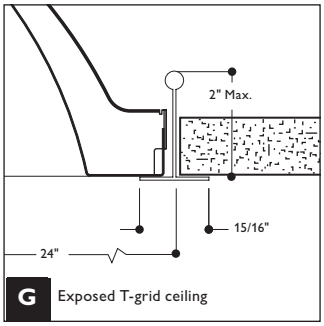
Electrical Wiring Options: Consult factory.

Low profile integral emergency pack: Suffix: **L5** or **L6.** Note: Emergency pack compartment on side of fixture will cover air slots.

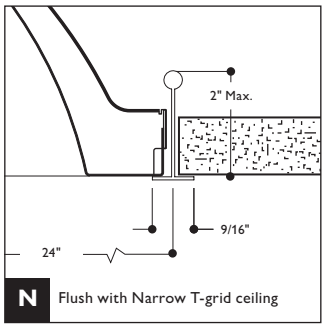
Fusing: Internal fast blow fusing: Suffix: **A**.
Internal slow blow fusing: Suffix: **C**.

Drywall Kit: Order Catalog Number: **FK92X2**.

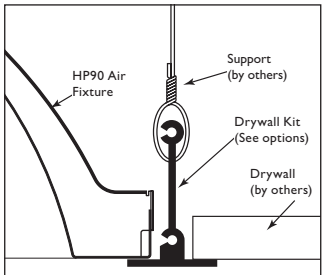
Mounting Methods



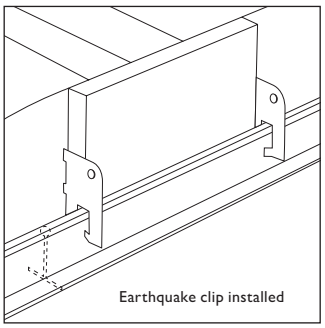
G Exposed T-grid ceiling



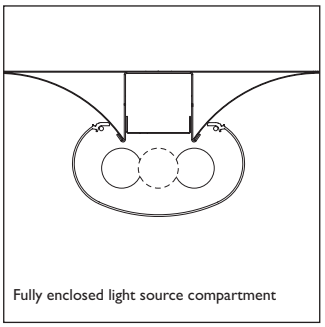
N Flush with Narrow T-grid ceiling



Drywall Kit for use with "G" type fixture.
Catalog number: **FK92X2**



Earthquake clip installed



Fully enclosed light source compartment

Job Information **Type:**

www.philips.com/luminaires

HP90 Air

Recessed 2'X2' Fluorescent; T8, T5, T5HO or TT5

Performance

In an installation of 2 lamp 14W luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .86. To reduce glare the average brightness at 65° shall not exceed 2540 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 75.3%.

Photometry

Model No. H9A2GLR214UNVPG

LER = 68.1 IW = 31.1 BF = 1.06

Comparative yearly lighting energy cost per 1000 lumens = $3.53

Report Number: G2010021

Catalog Number: H9A2GLR214UNVPG

Lamps: (2) F14T5

Luminaire: HP90 Air 2' x 2' with linear prismatic lens.

Ballast: ICN-2S28

Report is based on 1200 lumens per lamp.

Efficiency: 83.2%

CIE Type: Direct - Indirect

Plane:	0-Deg.	90-Deg.
Spacing Criteria:	1.3	1.4
Shielding Angles:	90	90
Plane:	0-Deg.	90-Deg.
Luminous Length:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	622	622	622	
5	620	620	623	59
15	595	605	614	171
25	548	572	593	264
35	481	521	559	326
45	397	456	507	351
55	299	375	440	333
65	198	184	364	280
75	100	180	226	178
85	21	27	20	35
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	494	20.6	24.7
0- 40	820	34.2	41.1
0- 60	1504	62.7	75.3
0- 90	1997	83.2	100.0
90-180	0	0.0	0.0
0-180	1997	83.2	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	90	86	82	80	78	75	77	75	73
2	81	74	68	70	65	61	67	63	59
3	74	65	57	61	55	50	58	54	50
4	67	57	49	54	47	43	52	46	42
5	62	51	43	48	41	36	46	41	36
6	57	45	38	43	37	32	42	36	31
7	53	41	34	39	33	28	38	32	28
8	49	37	30	36	29	25	35	29	25
9	46	34	27	33	27	22	32	26	22
10	43	32	25	30	24	20	29	24	20

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	1656.	1902.	2115.
55	1538.	1928.	2263.
65	1382.	1982.	2540.
75	1140.	2051.	2575.
85	711.	917.	677.

Photometry

Model No. H9A2GLR224UNVPG

LER = 57.2 IW = 49.4 BF = 1.0

Comparative yearly lighting energy cost per 1000 lumens = $4.19

Report Number: G2007082

Catalog Number: H9A2GLR224UNVPG

Lamps: (2) F24T5HO

Luminaire: HP90 Air 2' x 2' with linear prismatic lens.

Ballast: QTP2X39-24T5HO/UNV

Report is based on 1760 lumens per lamp.

Efficiency: 80.3%

CIE Type: Direct - Indirect

Plane:	0-Deg.	90-Deg.
Spacing Criteria:	1.2	1.4
Shielding Angles:	90	90
Plane:	0-Deg.	90-Deg.
Luminous Length:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	894	894	894	
5	889	890	893	85
15	852	867	880	245
25	781	818	848	377
35	687	744	800	465
45	547	651	732	499
55	397	538	642	473
65	246	406	527	393
75	114	253	326	246
85	26	37	29	47
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	706	20.1	25.0
0- 40	1171	33.3	41.4
0- 60	2143	60.9	75.8
0- 90	2828	80.3	100.0
90-180	0	0.0	0.0
0-180	2828	80.3	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	87	83	79	78	75	73	75	72	70
2	79	72	66	67	63	59	65	61	58
3	71	63	56	59	53	49	57	52	48
4	65	55	48	52	46	41	50	45	41
5	60	49	42	46	40	35	45	39	35
6	55	44	37	42	36	31	40	35	31
7	51	40	33	38	32	27	37	31	27
8	47	36	29	35	29	24	34	28	24
9	44	33	26	32	26	22	31	25	22
10	41	31	24	29	24	20	29	23	20

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	2081.	2477.	2785.
55	1862.	2523.	3011.
65	1566.	2584.	3354.
75	1185.	2630.	3388.
85	802.	1142.	895.

Job Information **Type:**

HP90 Air

Recessed 2'X2' Fluorescent; T8, T5, T5HO or TT5

Performance

In an installation of 2 lamp 17W luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .83. To reduce glare the average brightness at 65° shall not exceed 2849 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 75.3%.

Photometry

Model No. H9A2GLR117UNVHI

LER = 60.9 IW = 16.7 BF = 0.88

Comparative yearly lighting energy cost per 1000 lumens = $3.94

Report Number: G2010176

Catalog Number: H9A2GLR117UNVHI

Lamps: (1) F17T8

Luminaire: HP90 Air 2' x 2' with linear prismatic lens..

Ballast: QTP1X32T8UNV ISN-SC

Report is based on 1400 lumens per lamp.

Efficiency: 82.5%

CIE Type: Direct - Indirect

Plane:	0-Deg.	90-Deg.
Spacing Criteria:	1.2	1.4
Shielding Angles:	90	90
Plane:	0-Deg.	90-Deg.
Luminous Length:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	335	335	335	
5	334	335	336	32
15	321	328	334	93
25	297	313	327	144
35	262	289	313	181
45	218	276	291	197
55	167	215	260	192
65	114	169	225	168
75	64	117	152	117
85	22	25	21	30
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	269	19.2	23.3
0- 40	450	32.1	39.0
0- 60	839	59.9	72.7
0- 90	1155	82.5	100.0
90-180	0	0	0
0-180	1155	82.5	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	89	84	80	79	76	73	76	73	71
2	80	72	66	68	63	59	65	61	58
3	72	63	56	59	53	49	57	52	48
4	66	55	48	52	46	41	50	45	40
5	60	49	41	46	40	35	45	39	34
6	56	44	36	42	35	30	40	34	30
7	51	40	32	38	31	27	37	31	26
8	48	36	29	34	28	24	33	28	23
9	45	33	26	32	25	21	31	25	21
10	42	30	24	29	23	19	28	23	19

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	900.	1057.	1201.
55	850.	1094.	1323.
65	787.	1167.	1554.
75	722.	1319.	1714.
85	737.	837.	703.

Photometry

Model No. H9A2GLR217UNVHI

LER = 64.7 IW = 30.6 BF = 0.88

Comparative yearly lighting energy cost per 1000 lumens = $3.71

Report Number: G2010106

Catalog Number: H9A2GLR217UNVHI

Lamps: (2) F17T8

Luminaire: HP90 Air 2' x 2' with linear prismatic lens..

Ballast: ICN-2P32-SC

Report is based on 1400 lumens per lamp.

Efficiency: 80.3%

CIE Type: Direct - Indirect

Plane:	0-Deg.	90-Deg.
Spacing Criteria:	1.2	1.4
Shielding Angles:	90	90
Plane:	0-Deg.	90-Deg.
Luminous Length:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	700	700	700	
5	697	698	701	67
15	669	681	691	192
25	617	643	668	297
35	540	587	629	367
45	446	512	568	394
55	337	420	492	374
65	224	318	404	314
75	115	204	249	202
85	26	35	26	43
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	556	19.9	24.7
0- 40	923	33.0	41.0
0- 60	1691	60.4	75.2
0- 90	2249	80.3	100.0
90-180	0	0	0
0-180	2249	80.3	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	87	83	79	78	75	72	74	72	70
2	79	72	66	67	63	59	64	61	57
3	71	62	55	59	53	49	56	52	48
4	65	55	48	52	46	41	50	45	40
5	60	49	41	46	40	35	45	39	35
6	55	44	36	42	35	31	40	35	30
7	51	40	32	38	31	27	37	31	27
8	47	36	29	34	28	24	33	28	24
9	44	33	26	32	26	22	31	25	21
10	41	30	24	29	23	19	28	23	19

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	1880.	2158.	2394.
55	1751.	2183.	2557.
65	1580.	2243.	2849.
75	1324.	2349.	2868.
85	889.	1197.	889.

Job Information **Type:**

HP90 Air

Recessed 2'X2' Fluorescent; T8, T5, T5HO or TT5

Performance

In an installation of 1 lamp 40W luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .76. To reduce glare the average brightness at 65° shall not exceed 2065 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 70.5%.

Photometry

Model No. H9A2GLR1FTUNVPR

LER = 61.2 IW = 37.6 BF = 1.0

Comparative yearly lighting energy cost per 1000 lumens = $3.92

Report Number: G2006149

Catalog Number: H9A2GLR1FTUNVPR

Lamps: (1) F40BX/SPX30/IS

Luminaire: HP90 Air 2' x 2' with linear prismatic lens.

Ballast: C240PUNVHP-B/UNV

Report is based on 3150 lumens per lamp.

Efficiency: 72.9%

CIE Type: Direct - Indirect

Plane:	0-Deg.	90-Deg.
Spacing Criteria:	1.2	1.2
Shielding Angles:	90	90
Plane:	0-Deg.	90-Deg.
Luminous Length:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	876	876	876	
5	868	872	876	83
15	836	841	845	238
25	776	776	772	357
35	685	665	646	416
45	560	518	528	410
55	400	373	413	348
65	230	248	318	260
75	97	149	195	155
85	19	24	19	31
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	678	21.5	29.5
0- 40	1093	34.7	47.6
0- 60	1851	58.8	80.6
0- 90	2296	72.9	100.0
90-180	0	0	0
0-180	2296	72.9	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
Room Cavity Ratio 1	80	76	73	71	69	67	69	67	65
2	73	67	62	63	59	56	60	57	54
3	66	59	53	55	51	47	53	49	46
4	61	52	46	49	44	40	48	43	40
5	56	47	40	44	39	35	43	38	40
6	52	42	36	40	35	31	39	34	30
7	48	38	32	37	31	27	36	31	27
8	45	35	29	34	28	24	33	28	24
9	42	32	26	31	26	22	30	25	22
10	39	30	24	29	24	20	28	23	20

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	2174.	2011.	2049.
55	1914.	1789.	1976.
65	1494.	1611.	2065.
75	1029.	1580.	2068.
85	598.	765.	598.

Job Information **Type:**

HP90 Air 2X2 05/13

Philips Lighting Company
200 Franklin Square Drive
Somerset, NJ 08873
Phone: 855-486-2216

www.philips.com/luminaires

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281 Hillmount Road
Markham ON, Canada L6C 2S3
Phone: 905-201-4100