Portfolio

DESCRIPTION

A low brightness non-ferrous 4-inch diameter downlight for use with A19, PAR16 and PAR20 LED lamps. The precisely formed non-imaging reflector ensures 55° cutoff to lamp and lamp image with A lamps and 45° cutoff with PAR lamps. The modular housing system supports various downlight and wallwash reflectors.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Reflector
Positive reflector mounting pulls trim tight to ceiling. 0.050″ spun aluminum reflector.

Trim Ring
Self flanged reflector.

Socket Cap
One piece heat dissipating die-cast aluminum with non-ferrous reflector attachment.

Housing
Precision die-cast aluminum 1-1/2″ (38mm) deep collar. Optical assembly adjusts within the housing to accommodate ceilings up to 3-1/2″ (89mm) thick.

Universal Mounting Bracket
Accepts various Non-Ferrous hanger bars by others. Provides 5″ total adjustment.

Conduit Fittings
Die-cast screw tight connectors with aluminum lock nut and stainless steel screw.

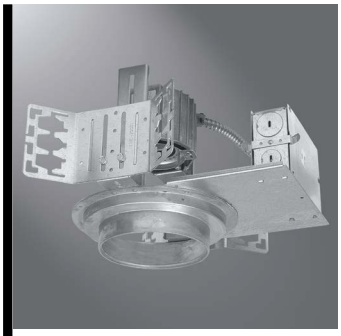
Junction Box
Made entirely of non-ferrous material. U.L. listed for four in, four out #12 at 90°C pull through branch wiring. Pry-outs for four 1/2″ and two 3/4″ conduits. Access to junction box by removing reflector.

Socket
Medium base porcelain socket with nickel plated screw shell and non-ferrous fasteners.

Socket Cap Support
Non-ferrous brackets with stainless steel hardware to allow socket cap adjustment.

Insulation Detector
Self-resetting insulation detector opens circuit if insulation is improperly installed.

Labels
cULus Listed, damp location. AC operation.



HD4MRI

4501
Medium Beam A19 (100W max)

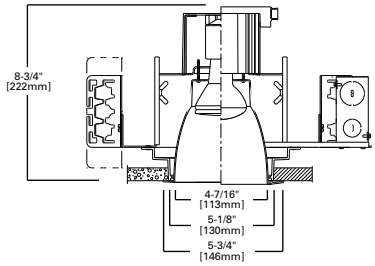
4551
Wide Beam A19 (100W max)

4201
PAR16/PAR20 (60W max)

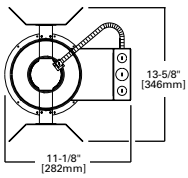
4-Inch Downlight

DIMENSIONS

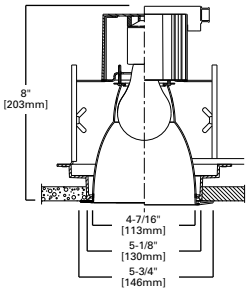
4201 PAR16/PAR20



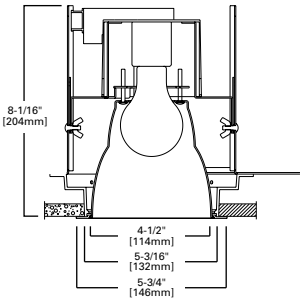
Top View



4501 Medium Beam A19



4551 Wide Beam A19



NOTES:
Accessories should be ordered separately. For additional options, please consult your Cooper Lighting Solutions Representative.
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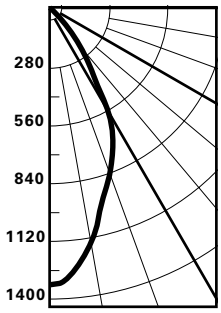
ORDERING INFORMATION

Housing	Options	Reflector	Finish	Option	MRI (required field)
HD4MRI=4" Non-Ferrous Incandescent	**CP**=Chicago Plenum	**4501**=A19 Self Flanged Medium Beam **4551**=A19 Self Flanged Wide Beam **4201**=PAR16/PAR20 Self Flanged	**BMRI**=Specular Black **HMRI**=Semi-Specular Clear **LIMRI**=Specular Clear	**Blank**=Same finish as reflector **WF**=White Painted Flanged	**MRI**=MRI

PHOTOMETRICS

Candlepower Distribution



Test No. H21084

HD4-4500C
Lamp=100W A19IF Inside Frosted
Lumens=1720

Spacing Criteria=0.8
Efficiency=53.0%

Candlepower

Deg.	CD
0	1296
5	1240
15	934
25	688
35	276
45	51
55	2
65	1
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	7027
55	340
65	231
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
4'6"	64	3'6"
5'6"	43	4'6"
6'6"	31	5'6"
8'0"	20	6'6"
10'0"	13	8'6"
12'0"	9	10'0"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Reflector Multiplier

Haze = 0.95 Straw = 0.90
Wheat = 0.90

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	687	40.0	75.4
0-40	867	50.4	95.1
0-60	911	53.0	99.9
0-90	911	53.0	100.0
90-180	0	0.0	0.0
0-180	911	53.0	100.0

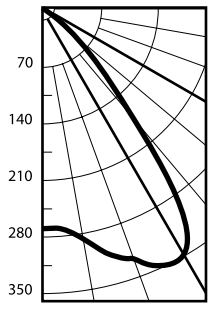
Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	63	63	63	63	62	62	62	59	59	56	56	54	54	53
1	61	59	58	57	58	57	56	56	55	54	53	52	52	51
2	58	56	55	53	56	54	53	54	52	52	50	51	49	49
3	56	54	52	50	53	51	50	52	49	50	48	49	47	47
4	54	51	49	47	51	48	47	49	46	48	46	48	45	45
5	52	49	46	44	48	46	44	47	44	46	43	46	43	42
6	50	46	44	42	46	44	42	45	42	45	41	44	41	41
7	48	44	42	40	44	41	40	43	39	43	39	42	39	38
8	46	42	39	38	42	39	38	41	37	41	37	40	37	37
9	44	40	37	36	40	37	36	39	35	39	35	38	35	35
10	42	38	36	34	38	35	34	37	34	37	34	37	33	33

rc= Ceiling reflectance, rw= Wall reflectance, RCR= Room cavity ratio

CU Data Based on 20% Effective Floor Cavity Reflectance.

Candlepower Distribution



Test No. H21082

HD4-4550C
Lamp=75W A19IF Inside Frosted
Lumens=885

Spacing Criteria=1.2
Efficiency=61.3%

Candlepower

Deg.	CD
0	270
5	272
15	312
25	348
35	283
45	97
55	23
65	1
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	13337
55	3839
65	184
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
4'6"	13	6'6"
5'6"	9	8'0"
6'6"	6	9'6"
8'0"	4	11'6"
10'0"	3	14'6"
12'0"	2	17'6"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Reflector Multiplier

Haze = 0.95 Straw = 0.90
Wheat = 0.90

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	275	31.0	50.6
0-40	445	50.3	82.1
0-60	541	61.2	99.8
0-90	542	61.3	100.0
90-180	0	0.0	0.0
0-180	542	61.3	100.0

Coefficient of Utilization

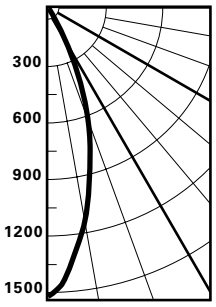
rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	73	73	73	73	71	71	71	68	68	65	65	62	62	61
1	69	68	66	65	66	65	64	64	62	62	60	60	58	57
2	66	63	61	59	62	60	58	60	57	58	55	57	54	53
3	63	59	56	53	58	55	53	56	52	55	51	53	50	49
4	59	55	51	49	54	51	48	53	48	51	47	50	47	46
5	56	51	47	44	50	47	44	49	44	48	43	47	43	42
6	53	47	43	41	47	43	40	46	40	45	40	44	40	39
7	50	43	40	37	43	39	37	42	37	42	36	41	36	35
8	46	40	36	34	40	36	33	39	33	38	33	38	33	32
9	43	37	33	30	37	33	30	36	30	35	30	35	30	29
10	41	34	30	27	34	30	27	33	27	33	27	32	27	26

rc=Ceiling reflectance, rw=Wall reflectance, RCR=Room cavity ratio

CU Data Based on 20% Effective Floor Cavity Reflectance.

PHOTOMETRICS

Candlepower Distribution



Test No. H21048
HD4-4200C
Lamp=50W PAR20
Narrow
Flood
Halogen
Lumens=560
Spacing Criteria=0.5
Efficiency=95.0%

Candlepower

Deg.	CD
0	1506
5	1338
15	842
25	302
35	37
45	3
55	0
65	0
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	413
55	0
65	0
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
5'6"	50	3'0"
6'6"	36	3'6"
8'0"	24	4'6"
10'0"	15	5'6"
12'0"	10	6'6"
14'0"	8	7'6"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary

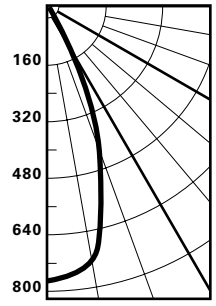
Zone	Lumens	%Lamp	%Luminaire
0-30	500	89.3	94.0
0-40	527	94.1	99.1
0-60	532	95.0	100.0
0-90	532	95.0	100.0
90-180	0	0.0	0.0
0-180	532	95.0	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	113	113	113	113	111	111	111	106	106	101	101	97	97	95
1	110	108	106	105	106	105	103	102	100	99	97	96	94	93
2	107	104	101	99	102	100	98	99	96	97	94	94	92	91
3	104	100	97	95	99	96	94	97	93	95	91	93	90	89
4	101	97	94	91	96	93	91	94	90	92	89	91	88	87
5	99	94	90	88	93	90	87	91	87	90	86	89	85	84
6	96	91	88	85	91	87	85	89	85	88	84	87	84	83
7	94	88	85	82	88	85	82	87	82	86	82	85	81	80
8	92	86	82	80	85	82	80	85	80	84	79	83	79	78
9	89	83	80	78	83	80	78	82	77	82	77	81	77	76
10	87	81	78	76	81	78	76	80	75	80	75	79	75	74

rc= Ceiling reflectance, rw= Wall reflectance, RCR= Room cavity ratio
CU Data Based on 20% Effective Floor Cavity Reflectance.

Candlepower Distribution



Test No. H21049
HD4-4200C
Lamp=50W R20
Flood
Lumens=410
Spacing Criteria=0.6
Efficiency=83.7%

Candlepower

Deg.	CD
0	783
5	725
15	541
25	208
35	32
45	2
55	0
65	0
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	262
55	0
65	0
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
5'6"	26	3'6"
6'6"	19	4'0"
8'0"	12	5'0"
10'0"	8	6'6"
12'0"	5	7'6"
14'0"	4	9'0"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Cone Color Multiplier **Lamp Wattage Multiplier**

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	315	76.9	92.0
0-40	338	82.3	98.4
0-60	343	83.7	100.0
0-90	343	83.7	100.0
90-180	0	0.0	0.0
0-180	343	83.7	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	99	99	99	99	97	97	97	93	93	89	89	85	85	83
1	96	95	93	92	93	91	90	89	88	86	85	84	83	81
2	93	91	88	86	89	87	86	87	84	84	82	82	80	79
3	91	88	85	83	86	84	82	84	81	83	80	81	78	77
4	89	85	82	79	84	81	79	82	78	81	77	79	76	75
5	86	82	78	76	81	78	76	80	75	78	75	77	74	73
6	84	79	76	74	79	76	74	78	73	77	73	76	72	72
7	82	77	74	71	76	73	71	75	71	75	70	74	70	69
8	79	74	71	69	74	71	69	73	69	73	68	72	68	67
9	77	72	69	67	72	69	67	71	67	71	66	70	66	65
10	75	70	67	65	70	67	65	69	65	69	65	68	64	64

rc= Ceiling reflectance, rw= Wall reflectance, RCR= Room cavity ratio
CU Data Based on 20% Effective Floor Cavity Reflectance.