



PHOTOMETRIC TEST REPORT No. 230907PH

Date: 8th September 2023

Client: Signify Australia Limited
Address: 65 Epping Road, North Ryde, NSW 2113
Contact: Jonas Olander

Luminaire: 184W Highlight

Catalogue No.: TC HB B 330S/840 PSU WH401LC-CTC AU
(sample tested), TC HB BS 330S/840 PSU WH401LC-CTC AU
(sample with sensor)

Description: 184W 4000K LED Highbay with 435mm diameter,
180mm deep, open clear plastic prismatic reflector

Optical System: LED module (marked RD-D193-UHBah-200W-
27C22B-2835-A0) with 5x concentric rings of 594x 4000K LEDs

Control Gear: LiFud LED Driver model number LF-
FHB200YAIV 5

Test Specification:

The luminaire was tested in accordance with the procedures given in IES LM79-19, "Optical and electrical measurements of Solid-State Lighting Products" using the **absolute** method.

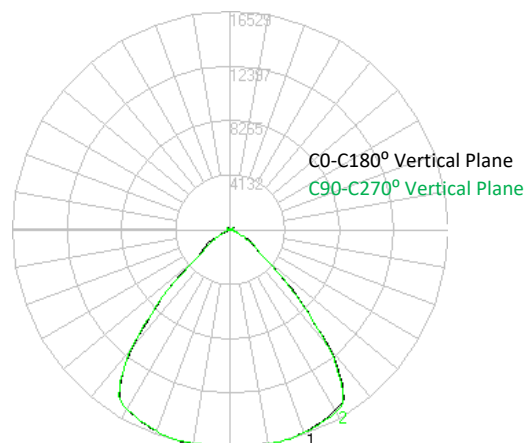
Results:

When tested at an ambient of 25°C at a supply voltage of 240.2V, 50Hz, the luminaire consumed 0.775 A and 179.1W at a Power factor of 0.966. That is, Lamp Circuit Power (LCP), which includes power supply losses, is 179.1W.

The Total Luminous Flux was measured as 32046 Lumens.

The Correlated Colour Temperature was measured as 3910K average.

Luminous Intensity Distribution (I-TABLE) is given on Page 6.



Tested by: J. King/D. Orwin on 5th September 2023

Authorised Signatory: _____
A. Yetendje



Test Configuration

The luminaire was photometered in IESNA Horizontal – Vertical Reference angles such that:

- The luminaire was mounted with photometric centre aligned with photometric zero (in the direction of nadir), centred on the light emitting area.
- In accordance with CIE S 025/E:2015 Clause 5.3.2 the centre of the prismatic reflector was co-incident with centre of the goniophotometer.
- The photometric test distance of 10.03m, is referenced to the photometric centre of the luminaire and the photocell.

Due to the Type B mounting arrangement, a primary correction factor to achieve correct orientation was determined but not applied as it was less than 0.5% and accounted for in the Uncertainty Budget. Should these Uncertainties be required contact LEDLab. Secondary corrections to the horizontal were applied.

Test Procedures and Equipment

| | |
|--|---|
| Calibration report: | 220855CAL using N.M.I. report RN 181690 on standard lamp 13478 |
| Technical Procedure: | P113 & P118 |
| Angular Resolution: | Test Configuration and issued .ies file C Plane Interval 15 Deg Gamma Angle Interval 1.0 Deg Abbreviated Test Report File (I-Table) C Plane Interval 15 Deg Gamma Angle Interval 5.0 Deg |
| Software: | Lisun LSG-1800B |
| Obstructions: | None |
| Lab. Book Page: | PH6/1928 |
| Primary Orientation Correction: | 1.0 |
| Colour correction: | 1.028 |
| Goniophotometer: | Lisun Electronics Model LSG-1800B, Serial No. GSGHF070010. |
| Photocell: | Lisun Electronics Detector Serial No. 330220-1 |
| Lux meter: | Lisun Electronics Model PM 400, Serial No. GSRXK090021 |
| Lux meter integration time (PLC): | 5 |
| Power meter: | Lisun Electronics Model RT-200, Serial No. GSXY0100021 |
| Power meter integration time (s): | 0.5 |
| Luminaire thermometer: | AMA 1362983 0.1°C Serial No 526,10942 |
| Temperature Data Logger: | Lisun TMP-8 Multiplex Serial No GSJWM010028 |
| Auxiliary Photocell: | Delta Ohm HD 2102.1 & LP471PHOT |
| Spectroradiometer: | Lisun LMS 9000A spectroradiometer Serial No GSXYE090207 |



TEST REPORT and IES file archive

The data files for this report are contained in the *archive file: 230906PH.zip*

IES file : 230906PH.IES

Document file : 230906PH.pdf

Uncertainties

At a Confidence Level of 95% with a Coverage Factor of 2

As per NATA electrotechnical ruling and LEDLab terms and Conditions as agreed by the client, LEDLab Uncertainties in measurement will be considered but will not be applied when assessing the Pass / Fail conclusion. In borderline cases, the measured value, its uncertainty and the limit are reported.

Angular direction: $\pm 0.4^\circ$

Luminous Intensity: $\pm 4\% + 0.5\text{cd}$

Total Luminous Flux: $\pm 4.1\% + 0.05\text{lm}$

Supply Voltage (AC): $\pm 0.15\%$

Supply Current (AC): $\pm 0.2\%$

Supply Power (AC): $\pm 0.25\%$

Ambient Temperature: $\pm 1^\circ\text{C}$

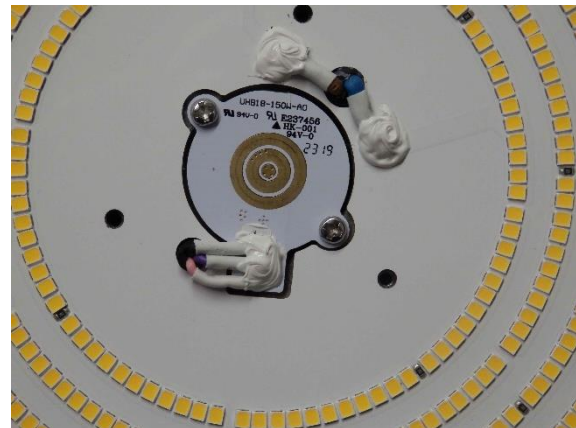
Luminous Opening: $\pm 3\text{mm}$

CCT: $\pm 100\text{K}$

Duv: ± 0.001

CRI: ± 4

Photos



Highlight (HB Series)
PHILIPS
 TC HB B 330S/840 PSU WH401LC-CTC AU
 ~220...240V 50/60Hz 184W PF: 0.9 IP65 IK02 Ta40°C
 912500108456 2023090620
 Made in Australia

Signify, I.B.R.S. 10461, 5600 VB, NL

TEST.2023090620.0000 09/2023



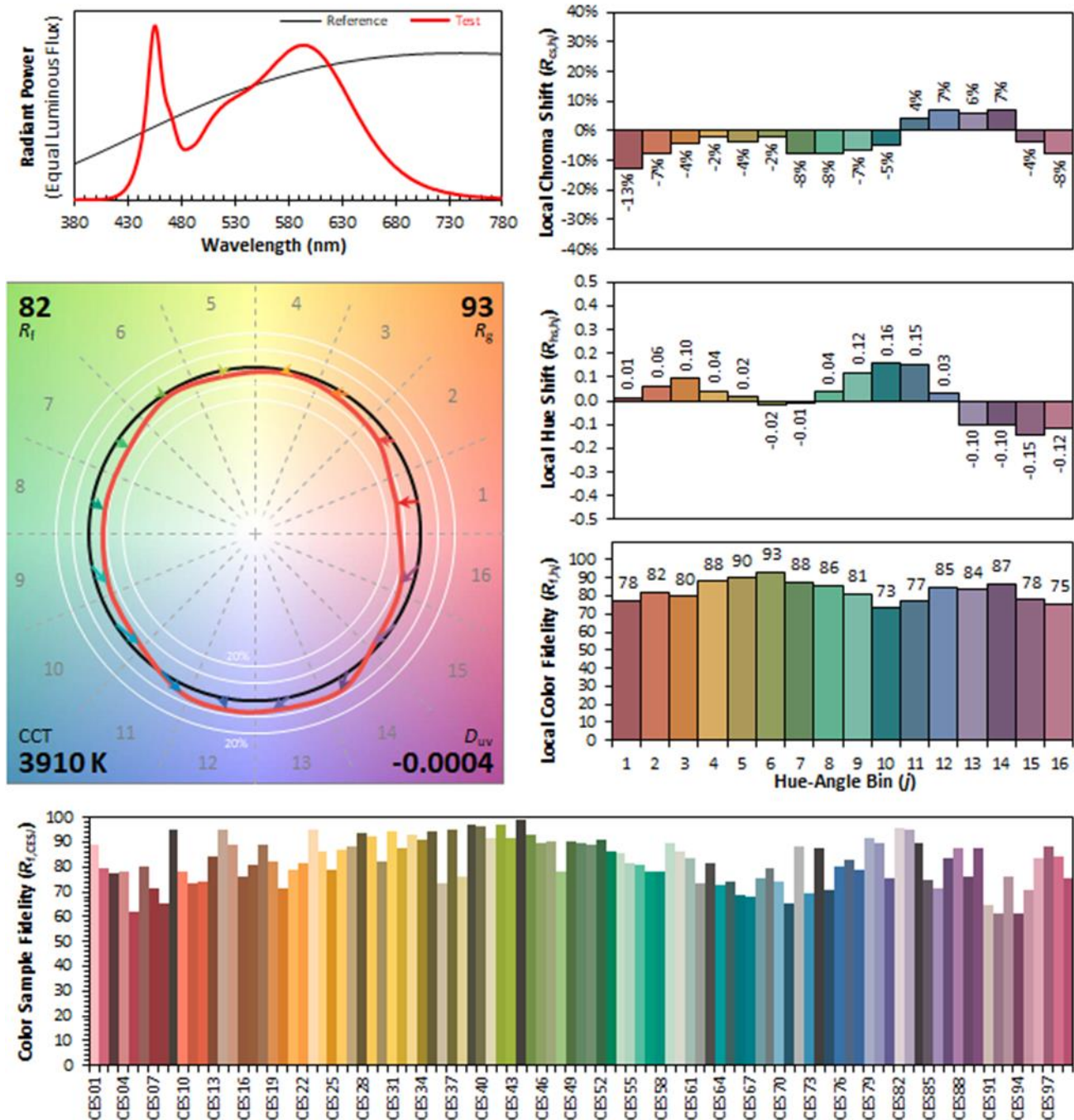
Highlight (HB Series)
PHILIPS
 TC HB BS 330S/840 PSU WH401LC-CTC AU
 ~220...240V 50/60Hz 184W PF: 0.9 IP65 IK02 Ta40°C
 912500108459 2023090624
 Made in Australia

Signify, I.B.R.S. 10461, 5600 VB, NL

TEST.2023090624.0000 09/2023



ANSI/IES TM-30-18 COLOR RENDITION REPORT



Notes:

x 0.3842
 y 0.3781
 u' 0.2270
 v' 0.5027

CIE 13.3-1995
 (CRI)
 R_a 83



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| LUMINOUS INTENSITY DISTRIBUTION (I-Table) - cd | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vertical Angle (V) Degrees | Horizontal Angle (H Plane) - Degrees | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | 255 | 270 | 285 | 300 | 315 | 330 | 345 | 360 |
| 0 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 | 16418 |
| 5 | 16424 | 16432 | 16423 | 16427 | 16421 | 16428 | 16426 | 16419 | 16419 | 16421 | 16425 | 16420 | 16417 | 16427 | 16405 | 16410 | 16416 | 16420 | 16410 | 16407 | 16403 | 16418 | 16425 | 16423 | 16424 |
| 10 | 16481 | 16495 | 16494 | 16496 | 16494 | 16488 | 16487 | 16482 | 16486 | 16480 | 16487 | 16472 | 16467 | 16477 | 16455 | 16453 | 16460 | 16454 | 16434 | 16454 | 16454 | 16460 | 16477 | 16486 | 16481 |
| 15 | 16507 | 16512 | 16512 | 16523 | 16521 | 16509 | 16512 | 16505 | 16514 | 16497 | 16495 | 16486 | 16470 | 16486 | 16463 | 16464 | 16477 | 16470 | 16456 | 16483 | 16481 | 16486 | 16497 | 16506 | 16507 |
| 20 | 16356 | 16385 | 16384 | 16390 | 16394 | 16383 | 16388 | 16378 | 16355 | 16348 | 16321 | 16303 | 16304 | 16313 | 16291 | 16292 | 16298 | 16305 | 16291 | 16313 | 16327 | 16342 | 16375 | 16377 | 16356 |
| 25 | 16137 | 16186 | 16181 | 16188 | 16193 | 16203 | 16201 | 16170 | 16138 | 16115 | 16080 | 16038 | 16037 | 16046 | 16017 | 16013 | 16008 | 16031 | 16016 | 16040 | 16052 | 16096 | 16120 | 16135 | 16137 |
| 30 | 15853 | 15893 | 15912 | 15926 | 15953 | 15962 | 15979 | 15929 | 15864 | 15812 | 15775 | 15712 | 15696 | 15665 | 15632 | 15654 | 15662 | 15679 | 15684 | 15710 | 15736 | 15762 | 15794 | 15832 | 15853 |
| 35 | 14918 | 14925 | 14940 | 14973 | 14962 | 14962 | 14949 | 14817 | 14787 | 14733 | 14646 | 14676 | 14660 | 14625 | 14649 | 14664 | 14663 | 14660 | 14696 | 14788 | 14835 | 14826 | 14869 | 14923 | 14918 |
| 40 | 11569 | 11544 | 11546 | 11556 | 11502 | 11553 | 11490 | 11400 | 11372 | 11393 | 11357 | 11376 | 11416 | 11416 | 11445 | 11508 | 11500 | 11479 | 11510 | 11517 | 11552 | 11618 | 11626 | 11646 | 11569 |
| 45 | 7154 | 7189 | 7177 | 7193 | 7139 | 7090 | 6995 | 6976 | 7058 | 7177 | 7144 | 7111 | 7216 | 7238 | 7242 | 7261 | 7188 | 7228 | 7214 | 7100 | 7121 | 7234 | 7328 | 7333 | 7154 |
| 50 | 3554 | 3515 | 3521 | 3526 | 3541 | 3416 | 3401 | 3308 | 3332 | 3331 | 3399 | 3352 | 3494 | 3537 | 3445 | 3451 | 3332 | 3374 | 3357 | 3377 | 3480 | 3567 | 3641 | 3725 | 3554 |
| 55 | 2273 | 2346 | 2443 | 2480 | 2490 | 2394 | 2388 | 2230 | 2327 | 2280 | 2399 | 2401 | 2442 | 2330 | 2246 | 2185 | 2123 | 2132 | 2093 | 2157 | 2293 | 2224 | 2308 | 2273 | |
| 60 | 1433 | 1542 | 1658 | 1654 | 1638 | 1500 | 1466 | 1361 | 1436 | 1378 | 1548 | 1532 | 1565 | 1421 | 1345 | 1304 | 1260 | 1248 | 1251 | 1306 | 1332 | 1399 | 1376 | 1471 | 1433 |
| 65 | 685 | 777 | 794 | 757 | 740 | 666 | 670 | 631 | 640 | 648 | 686 | 676 | 665 | 607 | 582 | 564 | 550 | 549 | 567 | 581 | 602 | 608 | 615 | 655 | 685 |
| 70 | 341 | 375 | 376 | 351 | 350 | 329 | 330 | 315 | 317 | 316 | 320 | 311 | 310 | 298 | 306 | 291 | 289 | 290 | 295 | 301 | 304 | 315 | 310 | 327 | 341 |
| 75 | 218 | 230 | 231 | 214 | 210 | 204 | 210 | 201 | 202 | 201 | 197 | 196 | 197 | 195 | 207 | 198 | 197 | 197 | 201 | 205 | 200 | 212 | 205 | 212 | 218 |
| 80 | 170 | 176 | 174 | 159 | 158 | 157 | 165 | 160 | 159 | 157 | 158 | 153 | 159 | 158 | 167 | 161 | 164 | 162 | 164 | 164 | 162 | 170 | 163 | 173 | 170 |
| 85 | 144 | 142 | 138 | 127 | 127 | 130 | 136 | 131 | 130 | 129 | 125 | 130 | 136 | 134 | 139 | 137 | 137 | 132 | 135 | 134 | 133 | 141 | 136 | 141 | 144 |
| 90 | 112 | 108 | 108 | 101 | 101 | 104 | 104 | 103 | 106 | 106 | 102 | 102 | 104 | 110 | 114 | 106 | 107 | 108 | 107 | 109 | 105 | 116 | 107 | 109 | 112 |
| 95 | 108 | 103 | 106 | 95 | 99 | 102 | 102 | 100 | 102 | 102 | 102 | 101 | 106 | 111 | 113 | 107 | 105 | 104 | 104 | 108 | 103 | 115 | 107 | 109 | 108 |
| 100 | 114 | 112 | 110 | 101 | 104 | 109 | 110 | 110 | 111 | 114 | 111 | 110 | 114 | 118 | 123 | 116 | 117 | 115 | 116 | 114 | 110 | 122 | 117 | 117 | 114 |
| 105 | 123 | 119 | 121 | 111 | 113 | 116 | 122 | 117 | 118 | 121 | 119 | 123 | 126 | 128 | 133 | 126 | 127 | 125 | 126 | 121 | 119 | 130 | 126 | 124 | 123 |
| 110 | 151 | 140 | 150 | 141 | 135 | 135 | 148 | 148 | 144 | 147 | 146 | 153 | 152 | 151 | 172 | 173 | 170 | 166 | 167 | 161 | 161 | 159 | 153 | 162 | 151 |
| 115 | 255 | 227 | 229 | 219 | 221 | 220 | 223 | 235 | 231 | 234 | 217 | 232 | 254 | 253 | 278 | 274 | 268 | 263 | 264 | 253 | 259 | 267 | 246 | 258 | 255 |
| 120 | 211 | 221 | 235 | 223 | 224 | 227 | 219 | 211 | 212 | 215 | 218 | 220 | 223 | 223 | 230 | 207 | 202 | 201 | 198 | 191 | 197 | 197 | 203 | 214 | 211 |
| 125 | 125 | 132 | 144 | 134 | 137 | 139 | 137 | 137 | 128 | 137 | 133 | 136 | 137 | 137 | 138 | 130 | 128 | 123 | 123 | 120 | 121 | 125 | 123 | 128 | 125 |
| 130 | 80 | 85 | 90 | 88 | 88 | 89 | 85 | 84 | 81 | 84 | 82 | 84 | 91 | 89 | 97 | 89 | 87 | 84 | 82 | 78 | 82 | 82 | 82 | 85 | 80 |
| 135 | 57 | 57 | 64 | 55 | 58 | 59 | 58 | 57 | 49 | 56 | 55 | 57 | 62 | 63 | 69 | 61 | 58 | 59 | 59 | 58 | 58 | 58 | 59 | 60 | 57 |
| 140 | 46 | 43 | 52 | 42 | 41 | 42 | 42 | 40 | 37 | 44 | 41 | 43 | 47 | 46 | 52 | 46 | 45 | 48 | 50 | 47 | 46 | 53 | 46 | 44 | 46 |
| 145 | 47 | 45 | 52 | 42 | 41 | 41 | 41 | 41 | 39 | 40 | 40 | 42 | 44 | 42 | 48 | 43 | 45 | 47 | 50 | 48 | 49 | 51 | 45 | 47 | 47 |
| 150 | 49 | 46 | 51 | 45 | 45 | 41 | 45 | 44 | 39 | 45 | 44 | 44 | 43 | 41 | 49 | 43 | 46 | 50 | 51 | 50 | 49 | 54 | 50 | 50 | 49 |
| 155 | 44 | 47 | 54 | 45 | 45 | 44 | 46 | 45 | 45 | 47 | 44 | 44 | 43 | 40 | 49 | 42 | 45 | 43 | 47 | 47 | 47 | 53 | 47 | 49 | 44 |
| 160 | 42 | 40 | 49 | 41 | 45 | 46 | 46 | 44 | 41 | 44 | 42 | 42 | 42 | 40 | 43 | 41 | 41 | 45 | 44 | 43 | 42 | 42 | 43 | 43 | 42 |
| 165 | 31 | 34 | 41 | 37 | 39 | 43 | 42 | 40 | 33 | 39 | 33 | 36 | 37 | 34 | 41 | 34 | 33 | 37 | 42 | 37 | 36 | 38 | 34 | 35 | 31 |
| 170 | 26 | 24 | 33 | 28 | 31 | 35 | 33 | 33 | 29 | 32 | 28 | 28 | 29 | 28 | 34 | 26 | 31 | 32 | 33 | 29 | 27 | 30 | 28 | 28 | 26 |
| 175 | 0 | 0 | 25 | 0 | 0 | 0 | 27 | 25 | 22 | 28 | 0 | 23 | 23 | 0 | 27 | 0 | 25 | 25 | 25 | 0 | 0 | 23 | 0 | 0 | 0 |
| 180 | 0 | 0 | 26 | 0 | 23 | 0 | 0 | 0 | 0 | 27 | 23 | 23 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 |