

BAB VI

KESIMPULAN DAN REKOMENDASI

6.1 Kesimpulan

Berdasarkan penelitian yang telah dilakukan pada kondisi eksisting maupun optimasi Ruang Perpustakaan Fakultas Teknik Sipil dan Perencanaan Universitas Islam Indonesia, kesimpulan yang didapatkan yaitu sebagai berikut:

- a. Keseluruhan hasil penelitian pada perpustakaan ini menunjukkan bahwa cahaya alami rata-rata hanya dapat menerangi sebanyak 20% pada area yang terhalang, dan maksimal 40% pada area yang tidak terhalang, sesuai standar pencahayaan. Untuk mendapatkan pencahayaan alami yang lebih optimal, dapat dicapai dengan cara memaksimalkan cahaya alami yang masuk ke dalam ruang perpustakaan tergantung dari perubahan yang dilakukan. Optimasi ringan yang dilakukan dengan memperbesar tingkat transparansi pada bukaan bagian atas sebanyak 90% terbukti tidak memiliki pengaruh yang cukup banyak terhadap intensitas cahaya yang masuk ke dalam ruangan. Penambahan intensitas yang didapatkan rata-rata hanya sekitar 20-50 Lux saja. Usaha yang dilakukan untuk memantulkan cahaya langit dengan menambahkan bidang pemantul di dekat bukaan juga kurang efektif.
- b. Pada kasus ruang perpustakaan, penempatan rak buku yang tinggi menjadi pertimbangan tersendiri bagi pemanfaatan cahaya alami. Penempatan yang kurang tepat dapat menyebabkan pencahayaan alami menjadi kurang optimal. Rak buku yang ditempatkan di dekat sumber cahaya alami dapat

menjadi penghalang cahaya alami, yang seharusnya dapat menjangkau area yang lebih jauh.

- c. Efisiensi energi hanya dapat dilakukan pada penggunaan pencahayaan buatan, namun juga dipengaruhi oleh pencahayaan alami. Efisiensi energi yang dapat dilakukan antara lain dengan mematikan beberapa lampu pada waktu-waktu tertentu di area yang sudah terang dan memenuhi standar pencahayaan oleh cahaya alami. Sedangkan yang paling mempengaruhi dalam konsumsi energi adalah penggunaan lampu dan armatur yang lebih hemat energi, dengan daya yang tentunya lebih rendah. Meskipun lebih hemat energi, kebutuhan untuk mencapai standar pencahayaan pada perpustakaan juga harus terpenuhi, sehingga tercapai pencahayaan yang optimal. Jenis lampu TL-D, TL5 dan LED yang digunakan beserta armaturnya sudah memenuhi kedua kriteria tersebut. Hal ini dapat dilihat dari kalkulasi kepadatan daya pada masing-masing jenis lampu yaitu lampu TL-D sebesar 8 Watt/m², TL5 sebesar 5,8 Watt/m², dan LED sebesar 5,4 Watt/m², yang tidak melebihi standar penggunaan daya listrik maksimum yang direkomendasikan yaitu sebesar 15 Watt/m².

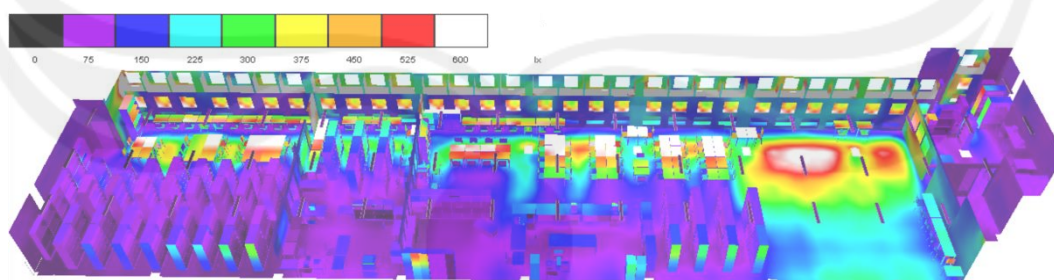
6.2 Rekomendasi

Berikut ini merupakan beberapa hal yang dapat direkomendasikan berdasarkan kesimpulan di atas, antara lain yaitu:

- a. Penggantian bukaan *glassblock* dengan kaca bening tidak perlu dilakukan apabila biaya yang dikeluarkan dan hasil yang didapatkan tidak seimbang,

karena penggantian bahan tersebut hanya berpengaruh sedikit terhadap intensitas cahaya yang didapatkan, sehingga pengeluaran dapat lebih difokuskan pada pencahayaan buatan.

- b. Menyusun ulang perletakan furnitur yang ada pada perpustakaan dapat dilakukan agar pemanfaatan cahaya alami lebih optimal, terutama pada susunan rak tinggi yang ada di sekitar bukaan untuk ditempatkan pada area lain sehingga tidak menghalangi masuknya cahaya alami. Penyusunan ulang tersebut juga diselaraskan dengan mengatur saklar lampu dengan baik yaitu sesuai deret lampu pada arah Barat-Timur, sehingga memudahkan untuk menghidup-matikan lampu sesuai kebutuhan. Pengaturan kembali jarak titik-titik lampu tidak diperlukan karena jarak yang ada sudah menunjukkan hasil yang optimal. Berikut ini merupakan contoh rekomendasi penataan ulang furnitur dan perabot yang memungkinkan cahaya alami untuk dapat masuk lebih jauh dan merata.



Gambar 6.1 Visualisasi Contoh Rekomendasi Penataan Perabot dengan Rentang Warna

Dengan meletakkan furnitur khususnya rak buku tinggi pada area yang jauh dari sumber cahaya alami dan menggantinya dengan perabot yang lebih rendah misalnya meja dan kursi baca, pencahayaan alami dapat

melakukan penetrasi ke dalam ruangan sebanyak 30-40% hampir merata.

Untuk nilai intensitas cahayanya dapat dilihat pada tabel berikut ini.

Tabel 6.1 Nilai Intensitas Cahaya pada Contoh Rekomendasi Penataan Perabot

| No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
|----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|----|-----|-----|-----|
| A | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | 136 | 140 |
| B | / | 950 | 829 | 943 | 1078 | 687 | 966 | 1017 | 745 | 406 | 1009 | 871 | 946 | 1033 | 871 | 973 | 1041 | 846 | 970 | 1039 | 792 | 858 | / | 69 | 138 | |
| C | 201 | 449 | 293 | 442 | 503 | 292 | 278 | 310 | 261 | 512 | 519 | 366 | 539 | 540 | 390 | 546 | 529 | 372 | 579 | 570 | 388 | 449 | / | 118 | 97 | |
| D | 71 | 110 | 171 | 100 | 78 | 182 | 88 | 80 | 93 | 204 | 219 | 230 | 222 | 238 | 225 | 254 | 244 | 263 | 272 | 283 | 249 | 220 | / | / | / | |
| E | 35 | 67 | 55 | 64 | / | 90 | / | 62 | 99 | 51 | 55 | 79 | 84 | / | 159 | 168 | 130 | 132 | 222 | 222 | 229 | 213 | / | / | / | |
| F | 30 | 38 | 36 | 32 | 21 | 60 | 108 | 107 | 80 | 77 | 100 | / | 151 | 146 | 86 | 67 | 61 | 94 | 171 | 188 | 193 | 214 | / | / | / | |

- c. Penggunaan lampu LED lebih direkomendasikan apabila biaya awal mencukupi. Lampu LED ini dapat menjadi pilihan utama jika dibutuhkan lampu dengan usia yang panjang, sehingga tidak perlu melakukan penggantian dalam jangka waktu lama. Apabila lampu TL5 yang akan digunakan, dapat menggunakan lampu TL5 dengan tipe *High Efficiency Eco*, karena lampu tersebut memiliki performa yang sama namun daya yang dikonsumsi lebih rendah hingga 10% dibandingkan lampu TL5 standar.

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<http://www.ecat.lighting.philips.com/l/indoor-luminaires/suspended/smartform-tps460-462-464/21761/cat/>

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<http://www.ecat.lighting.philips.com/l/lamps/fluorescent-lamps/tl5/master-tl5-high-efficiency/21345/cat/>

<http://www.ecat.lighting.philips.com/l/lamps/fluorescent-lamps/tl5/master-tl5-high-efficiency-eco/21346/cat/>

<http://www.uii.ac.id/maps.html>



LAMPIRAN 1

Surat Keterangan Alat



DEPARTEMEN PENDIDIKAN NASIONAL
UNIVERSITAS GADJAH MADA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIT LAYANAN FISIKA DASAR
Sekip Utara Kotak Pos : BLS 21, Yogyakarta 55281
Telp. (0274) 6492380

SURAT KETERANGAN ALAT

No. 58 / LFD / IX / 2011

Yang bertanda tangan dibawah ini :

Nama : Drs. Sunarta, MS
NIM : 196108021987031001
Jabatan : Kepala Unit Layanan Fisika Dasar FMIPA UGM

Menerangkan bahwa alat laboratorium :

Nama alat : Luxmeter
Tipe : SANWA LX2

Telah terkalibrasi dengan baik, dan sampai surat ini dibuat alat tersebut masih dalam kondisi stabil (terkalibrasi).

Demikian surat ini dibuat agar dapat dimanfaatkan bagi pengguna.

Yogyakarta, 20 September 2011

Unit Layanan Fisika Dasar

Kepala,

Drs. Sunarta, M.S.

NIP. 196108021987031001



LAMPIRAN 2
DIALux Project

Project 1

Eksisting
Pencahayaan Alami
Pagi Hari
09.40



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



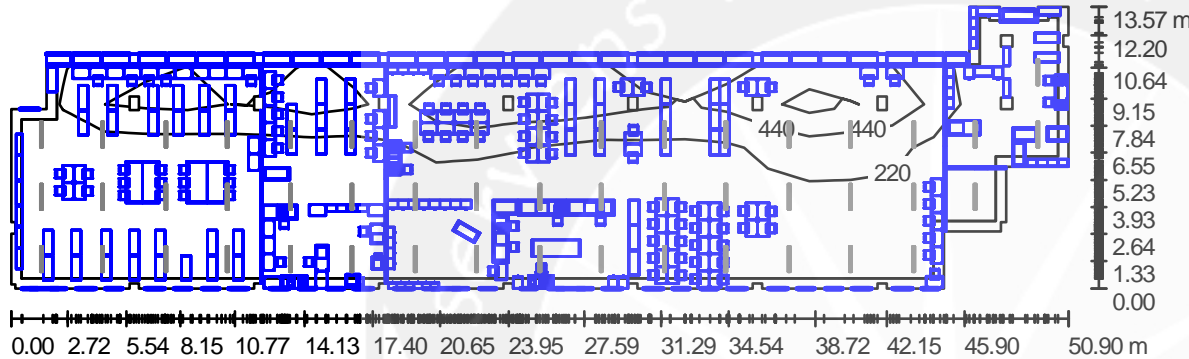
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:09:40:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 263 | 27 | 1116 | 0.104 |
| Floor | 50 | 132 | 21 | 1218 | 0.161 |
| Ceilings (302) | 88 | 129 | 19 | 894 | / |
| Walls (25) | 85 | 195 | 31 | 8892 | / |

Workplane:

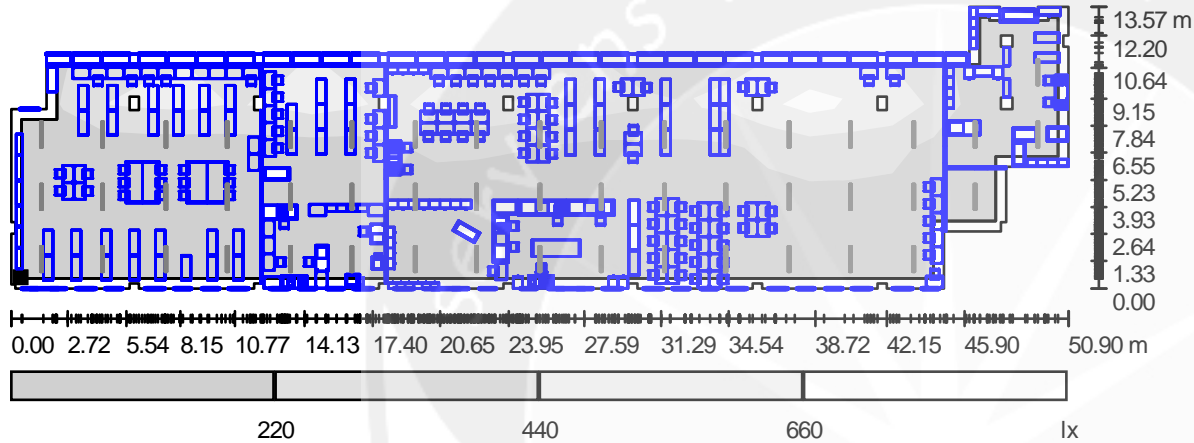
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

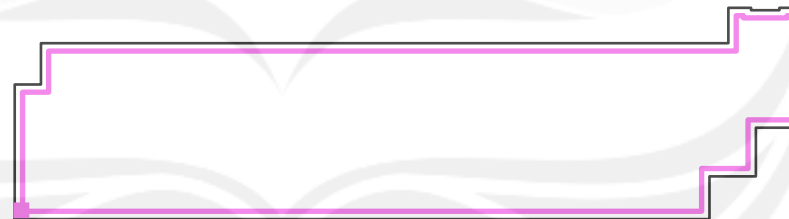
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 263 | 27 | 1116 | 0.104 | 0.024 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 546 | 763 | 855 | 1026 | 710 | 962 | 956 | 706 | 386 |
| 7.333 | 130 | 61 | 130 | 119 | 115 | 168 | 157 | 174 | 165 | 401 |
| 5.238 | 59 | 72 | 63 | 72 | 85 | 93 | 66 | 78 | 76 | 144 |
| 3.143 | 44 | 56 | 57 | 57 | 76 | 67 | / | 59 | 74 | 51 |
| 1.048 | 31 | 34 | 37 | 36 | <u>27</u> | 55 | 92 | 93 | 66 | 64 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
263

E_{min} [lx]
27

E_{max} [lx]
1116

u0
0.104

E_{min} / E_{max}
0.024

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | <u>1116</u> | 898 | 948 | 913 | 823 | 480 | 792 | 807 | 984 | 1114 |
| 7.333 | 412 | 289 | 321 | 192 | 193 | 242 | 183 | 232 | 446 | 459 |
| 5.238 | 159 | 151 | 116 | 86 | 114 | 93 | 116 | 160 | 198 | 212 |
| 3.143 | 48 | 61 | 58 | / | 89 | 103 | 120 | 134 | 155 | 164 |
| 1.048 | 76 | / | 105 | 99 | 69 | 102 | 119 | 129 | 144 | 153 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
263

E_{min} [lx]
27

E_{max} [lx]
1116

u0
0.104

E_{min} / E_{max}
0.024

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 122 | 137 |
| 9.428 | 851 | 900 | 391 | 59 | 117 |
| 7.333 | 322 | 366 | / | 99 | 78 |
| 5.238 | 193 | 179 | 78 | / | / |
| 3.143 | 176 | 168 | 47 | / | / |
| 1.048 | 162 | 198 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
263

E_{min} [lx]
27

E_{max} [lx]
1116

u0
0.104

E_{min} / E_{max}
0.024

Project 2

Eksisting
Pencahaya-an Alami
Siang Hari
13.15



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



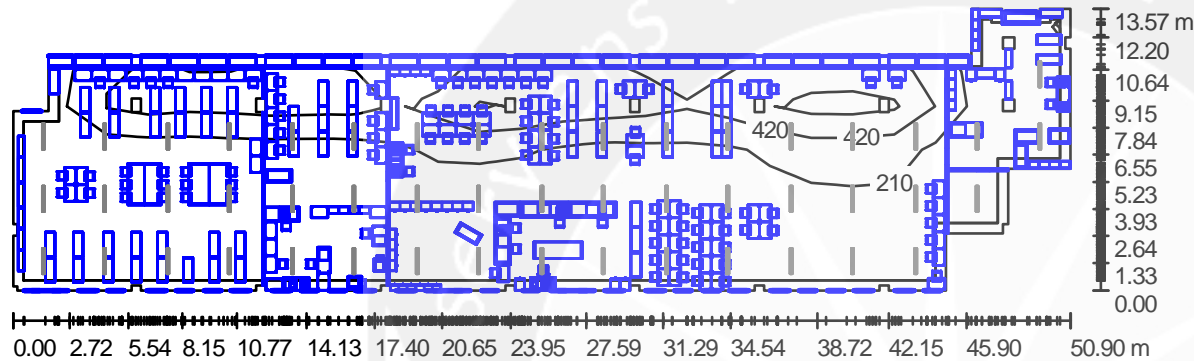
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:13:15:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 262 | 26 | 1039 | 0.101 |
| Floor | 50 | 128 | 20 | 1140 | 0.155 |
| Ceilings (302) | 88 | 125 | 19 | 856 | / |
| Walls (25) | 85 | 184 | 33 | 4532 | / |

Workplane:

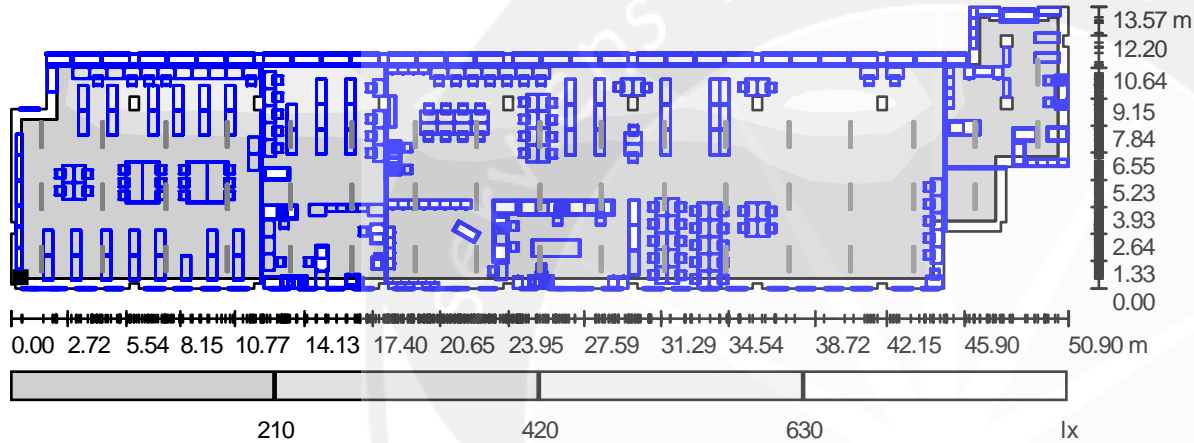
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

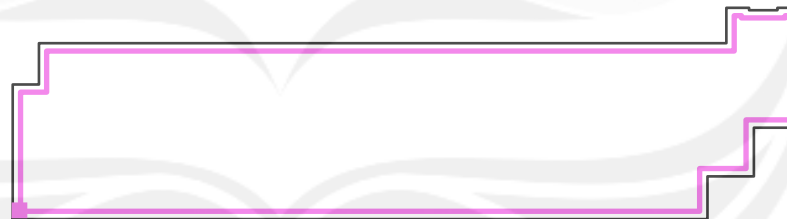
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
262

E_{min} [lx]
26

E_{max} [lx]
1039

u_0
0.101

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 482 | 861 | 815 | 919 | 961 | 871 | 854 | 868 | 349 |
| 7.333 | 89 | 63 | 128 | 108 | 111 | 178 | 150 | 166 | 171 | 343 |
| 5.238 | 50 | 70 | 59 | 68 | 79 | 82 | 61 | 73 | 72 | 125 |
| 3.143 | 39 | 51 | 54 | 54 | 72 | 63 | / | 52 | 64 | 47 |
| 1.048 | 29 | 32 | 36 | 33 | <u>26</u> | 51 | 84 | 83 | 62 | 61 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
262

E_{min} [lx]
26

E_{max} [lx]
1039

u0
0.101

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 996 | <u>1039</u> | 909 | 842 | 911 | 464 | 772 | 885 | 947 | 1019 |
| 7.333 | 396 | 329 | 327 | 184 | 194 | 231 | 205 | 232 | 399 | 449 |
| 5.238 | 152 | 153 | 117 | 85 | 107 | 89 | 118 | 142 | 173 | 211 |
| 3.143 | 46 | 58 | 56 | / | 87 | 99 | 115 | 121 | 143 | 164 |
| 1.048 | 68 | / | 105 | 100 | 69 | 97 | 116 | 123 | 138 | 146 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
262

E_{min} [lx]
26

E_{max} [lx]
1039

u0
0.101

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 86 | 173 |
| 9.428 | 1036 | 906 | 414 | 68 | 132 |
| 7.333 | 369 | 391 | / | 128 | 79 |
| 5.238 | 200 | 191 | 80 | / | / |
| 3.143 | 172 | 173 | 48 | / | / |
| 1.048 | 157 | 188 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
262

E_{min} [lx]
26

E_{max} [lx]
1039

u0
0.101

E_{min} / E_{max}
0.025

Project 3

Eksisting
Pencahayaan Alami
Sore Hari
15.55



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



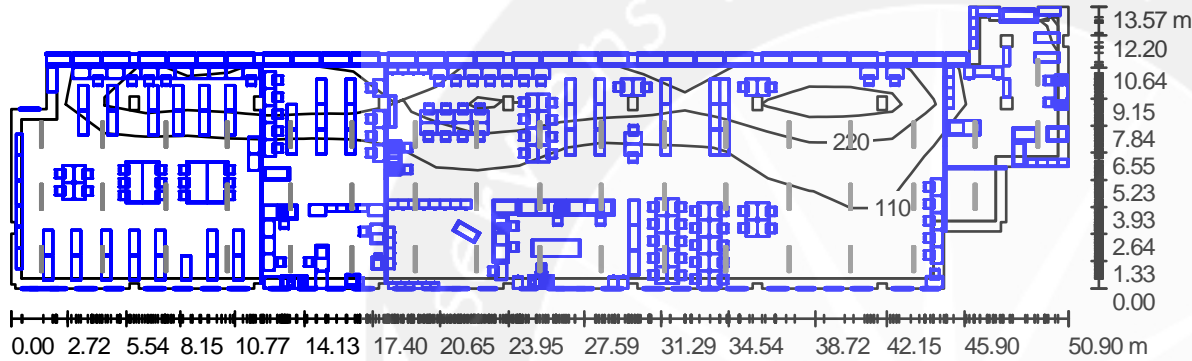
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:15:55:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 148 | 14 | 558 | 0.094 |
| Floor | 50 | 72 | 10 | 639 | 0.139 |
| Ceilings (302) | 88 | 67 | 11 | 380 | / |
| Walls (25) | 85 | 104 | 19 | 2453 | / |

Workplane:

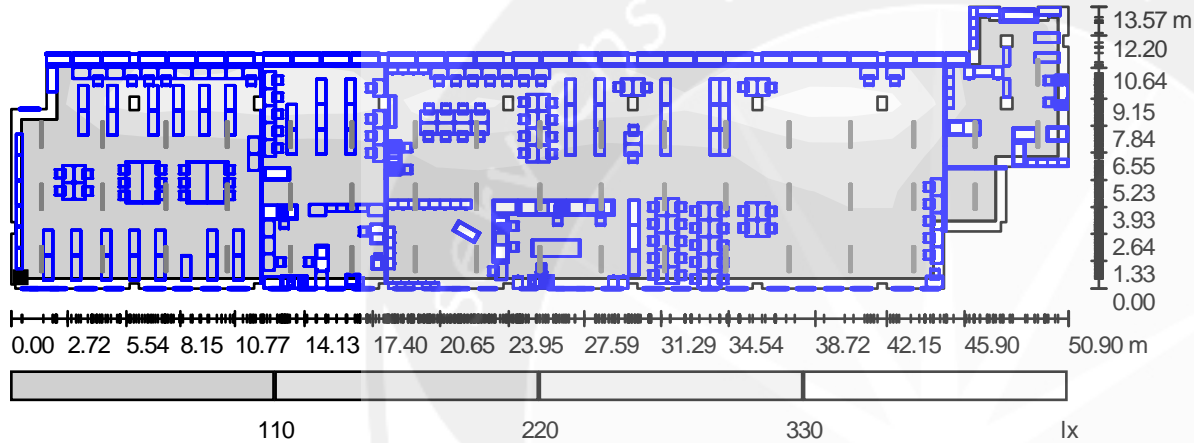
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 148 | 14 | 558 | 0.094 | 0.025 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 238 | 476 | 438 | 479 | 512 | 491 | 447 | 477 | 188 |
| 7.333 | 51 | 36 | 78 | 65 | 68 | 111 | 94 | 102 | 104 | 205 |
| 5.238 | 28 | 42 | 34 | 39 | 48 | 50 | 36 | 43 | 44 | 74 |
| 3.143 | 22 | 30 | 32 | 31 | 44 | 38 | / | 31 | 40 | 28 |
| 1.048 | 16 | 18 | 20 | 18 | 14 | 30 | 47 | 44 | 34 | 32 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
148

E_{min} [lx]
14

E_{max} [lx]
558

u0
0.094

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 512 | 545 | 490 | 444 | 506 | 261 | 416 | 496 | 524 | <u>558</u> |
| 7.333 | 243 | 206 | 206 | 115 | 120 | 144 | 128 | 141 | 246 | 279 |
| 5.238 | 92 | 93 | 72 | 50 | 62 | 52 | 76 | 86 | 106 | 131 |
| 3.143 | 30 | 33 | 32 | / | 52 | 60 | 72 | 73 | 88 | 101 |
| 1.048 | 37 | / | 62 | 59 | 38 | 60 | 70 | 73 | 82 | 87 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
148

E_{min} [lx]
14

E_{max} [lx]
558

u0
0.094

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 49 | 95 |
| 9.428 | 531 | 510 | 207 | 37 | 81 |
| 7.333 | 231 | 249 | / | 81 | 49 |
| 5.238 | 126 | 118 | 34 | / | / |
| 3.143 | 106 | 108 | 25 | / | / |
| 1.048 | 93 | 109 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
148

E_{min} [lx]
14

E_{max} [lx]
558

$u0$
0.094

E_{min} / E_{max}
0.025

Project 4

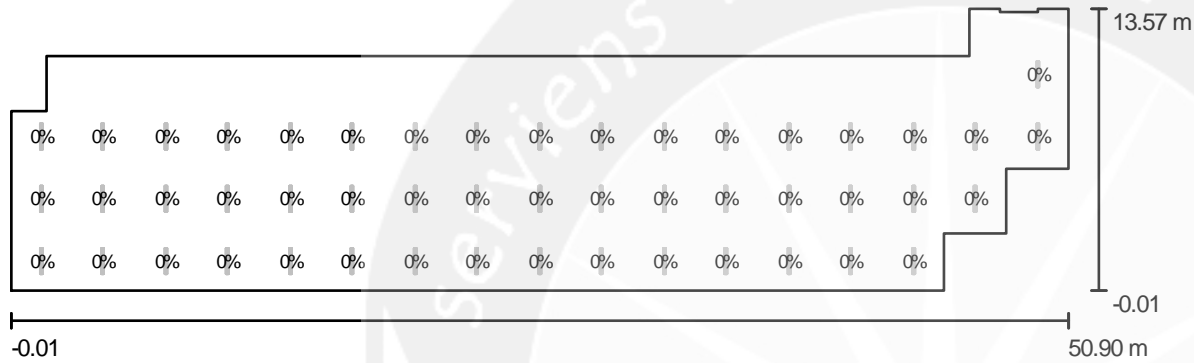
Eksisting
Pencahayaan Alami
Pagi Hari
08.00



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



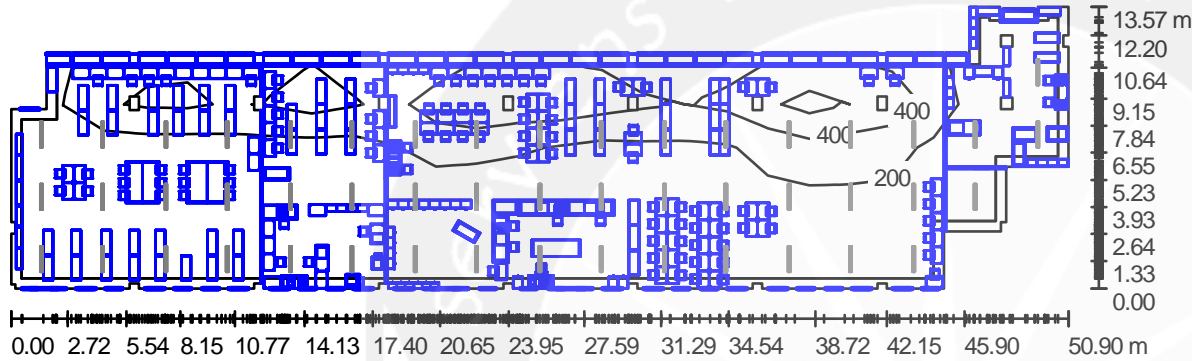
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
 Date: 18.09.2011, Time:08:00:00 (+7 hours difference to GMT)
 Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 242 | 25 | 982 | 0.102 |
| Floor | 50 | 121 | 17 | 1109 | 0.144 |
| Ceilings (302) | 88 | 114 | 19 | 709 | / |
| Walls (25) | 85 | 180 | 28 | 9035 | / |

Workplane:

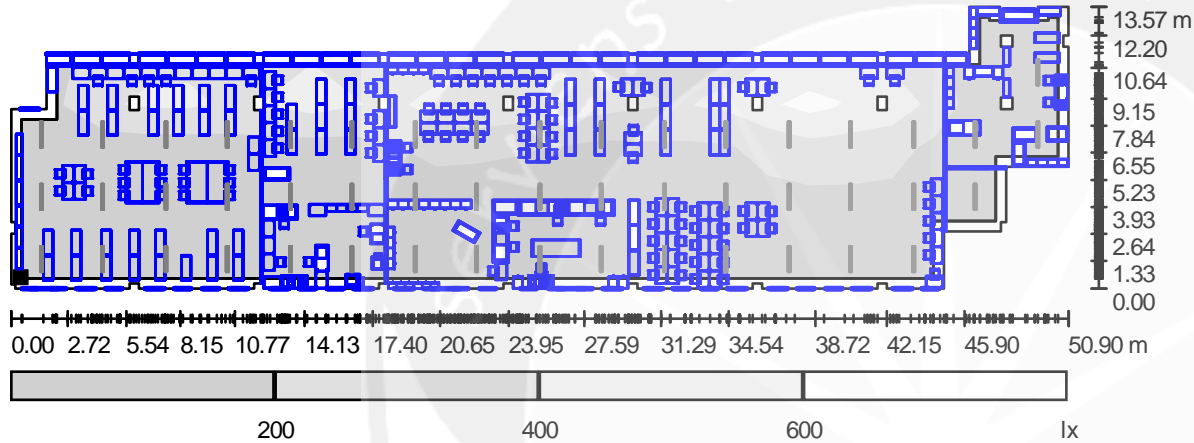
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

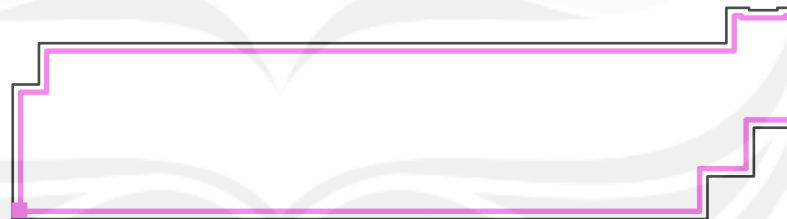
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
242

E_{min} [lx]
25

E_{max} [lx]
982

u_0
0.102

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 460 | 712 | 777 | 880 | 615 | 896 | 844 | 632 | 352 |
| 7.333 | 134 | 53 | 125 | 117 | 112 | 165 | 157 | 167 | 156 | 401 |
| 5.238 | 58 | 70 | 60 | 67 | 83 | 91 | 65 | 73 | 74 | 142 |
| 3.143 | 42 | 54 | 55 | 55 | 75 | 66 | / | 57 | 73 | 49 |
| 1.048 | 27 | 31 | 35 | 32 | <u>25</u> | 52 | 86 | 83 | 62 | 56 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
242

E_{min} [lx]
25

E_{max} [lx]
982

u0
0.102

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 955 | 793 | 850 | 808 | 767 | 447 | 691 | 762 | 913 | <u>982</u> |
| 7.333 | 403 | 274 | 313 | 188 | 186 | 247 | 175 | 220 | 444 | 449 |
| 5.238 | 154 | 144 | 110 | 81 | 106 | 88 | 112 | 156 | 195 | 205 |
| 3.143 | 51 | 56 | 54 | / | 84 | 99 | 116 | 128 | 152 | 158 |
| 1.048 | 68 | / | 96 | 90 | 60 | 96 | 113 | 124 | 136 | 141 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
242

E_{min} [lx]
25

E_{max} [lx]
982

u0
0.102

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 124 | 123 |
| 9.428 | 729 | 807 | 314 | 54 | 107 |
| 7.333 | 302 | 350 | / | 90 | 72 |
| 5.238 | 186 | 173 | 69 | / | / |
| 3.143 | 167 | 162 | 38 | / | / |
| 1.048 | 149 | 183 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
242

E_{min} [lx]
25

E_{max} [lx]
982

u0
0.102

E_{min} / E_{max}
0.025

Project 5

Eksisting
Pencapaian Alami
Siang Hari
12.00



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



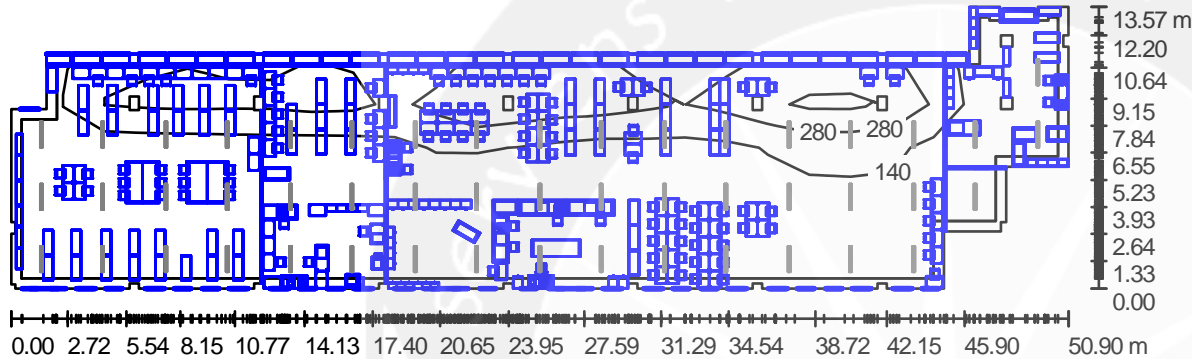
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:12:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 162 | 20 | 692 | 0.124 |
| Floor | 50 | 83 | 14 | 751 | 0.174 |
| Ceilings (302) | 88 | 89 | 12 | 749 | / |
| Walls (25) | 85 | 124 | 22 | 3559 | / |

Workplane:

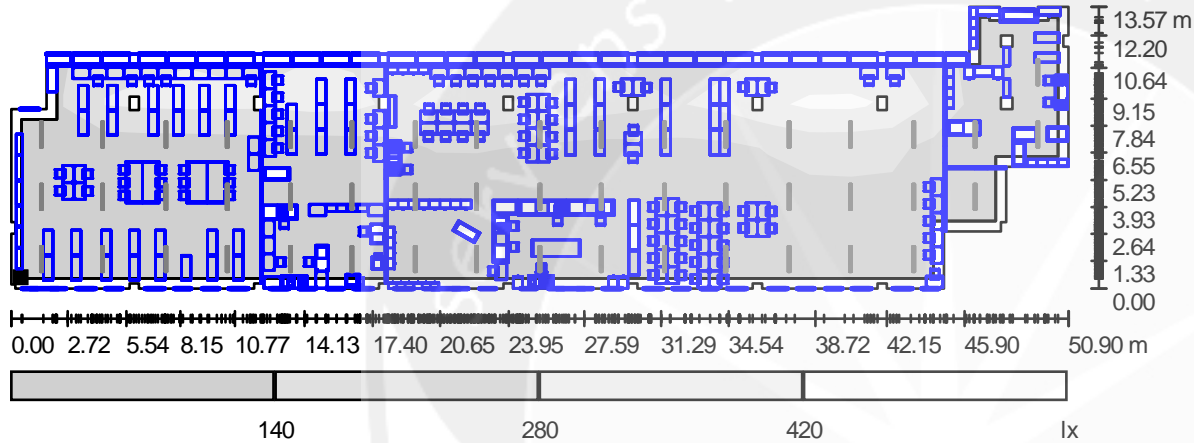
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

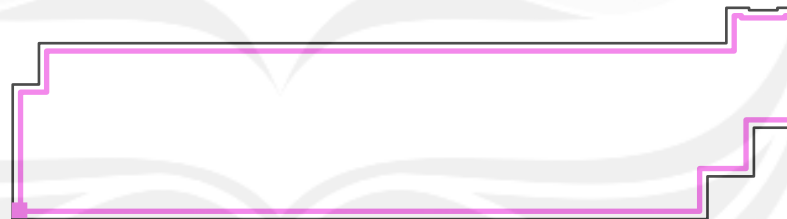
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
162

E_{min} [lx]
20

E_{max} [lx]
692

u_0
0.124

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 344 | 484 | 483 | 630 | 558 | 523 | 571 | 499 | 229 |
| 7.333 | 58 | 39 | 73 | 65 | 66 | 101 | 85 | 96 | 99 | 206 |
| 5.238 | 34 | 45 | 39 | 45 | 51 | 53 | 41 | 47 | 47 | 79 |
| 3.143 | 28 | 33 | 35 | 36 | 47 | 41 | / | 36 | 42 | 29 |
| 1.048 | 23 | 23 | 26 | 25 | <u>20</u> | 36 | 61 | 61 | 46 | 46 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
162

E_{min} [lx]
20

E_{max} [lx]
692

u_0
0.124

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | <u>692</u> | 635 | 546 | 555 | 506 | 280 | 486 | 530 | 567 | 656 |
| 7.333 | 229 | 182 | 180 | 105 | 114 | 134 | 113 | 139 | 236 | 259 |
| 5.238 | 92 | 92 | 72 | 55 | 68 | 58 | 73 | 92 | 111 | 130 |
| 3.143 | 27 | 39 | 38 | / | 56 | 62 | 72 | 78 | 90 | 100 |
| 1.048 | 51 | / | 72 | 69 | 49 | 66 | 79 | 83 | 93 | 100 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
162

E_{min} [lx]
20

E_{max} [lx]
692

u0
0.124

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 54 | 99 |
| 9.428 | 646 | 539 | 284 | 42 | 78 |
| 7.333 | 206 | 224 | / | 69 | 48 |
| 5.238 | 125 | 117 | 53 | / | / |
| 3.143 | 108 | 107 | 31 | / | / |
| 1.048 | 103 | 131 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
162

E_{min} [lx]
20

E_{max} [lx]
692

u0
0.124

E_{min} / E_{max}
0.029

Project 6

Eksisting
Pencahayaaaan Alami
Sore Hari
16.00



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



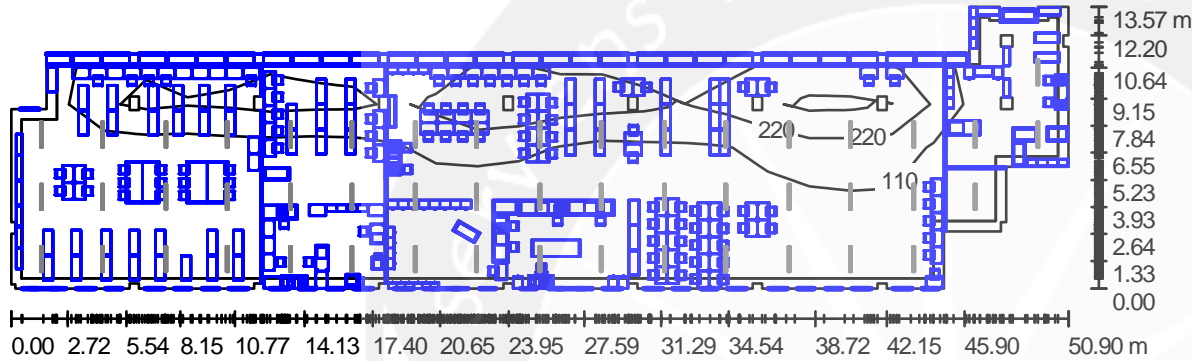
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:16:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 137 | 13 | 515 | 0.094 |
| Floor | 50 | 67 | 9.27 | 590 | 0.139 |
| Ceilings (302) | 88 | 62 | 9.82 | 350 | / |
| Walls (25) | 85 | 96 | 18 | 2272 | / |

Workplane:

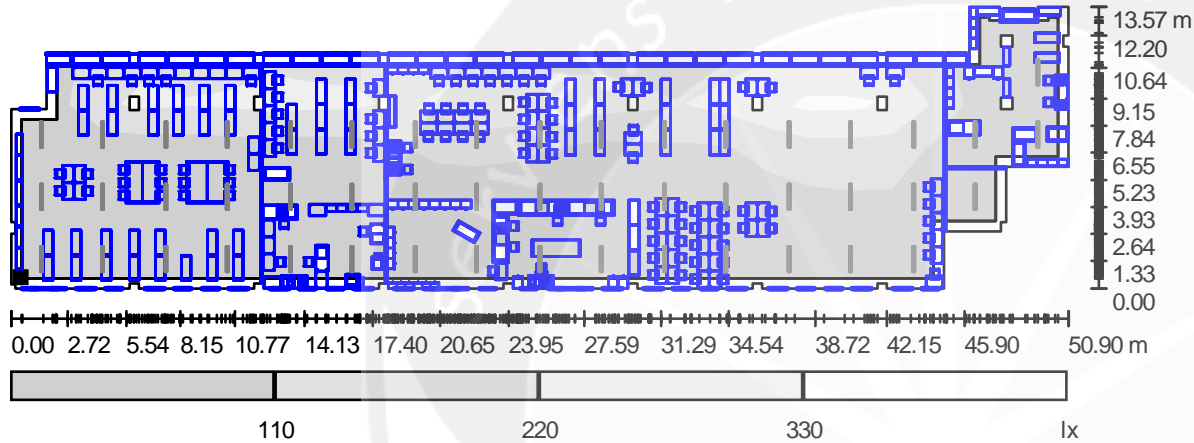
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

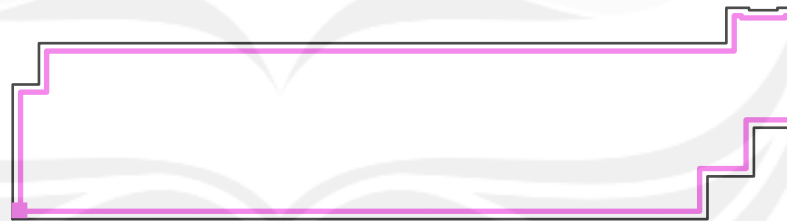
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
137

E_{min} [lx]
13

E_{max} [lx]
515

u_0
0.094

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 219 | 438 | 403 | 442 | 471 | 453 | 413 | 439 | 174 |
| 7.333 | 47 | 33 | 72 | 60 | 62 | 103 | 87 | 95 | 96 | 190 |
| 5.238 | 26 | 39 | 32 | 36 | 44 | 46 | 33 | 40 | 41 | 68 |
| 3.143 | 21 | 28 | 29 | 29 | 40 | 35 | / | 29 | 37 | 26 |
| 1.048 | 14 | 17 | 19 | 16 | <u>13</u> | 27 | 44 | 41 | 32 | 30 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
137

E_{min} [lx]
13

E_{max} [lx]
515

u0
0.094

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 473 | 502 | 451 | 410 | 466 | 240 | 385 | 457 | 484 | <u>515</u> |
| 7.333 | 225 | 190 | 190 | 106 | 111 | 133 | 119 | 130 | 227 | 258 |
| 5.238 | 85 | 86 | 66 | 47 | 57 | 48 | 70 | 80 | 98 | 121 |
| 3.143 | 28 | 31 | 29 | / | 48 | 55 | 66 | 68 | 82 | 94 |
| 1.048 | 34 | / | 57 | 54 | 35 | 55 | 64 | 68 | 75 | 80 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
137

E_{min} [lx]
13

E_{max} [lx]
515

u0
0.094

E_{min} / E_{max}
0.025

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 45 | 87 |
| 9.428 | 489 | 470 | 191 | 34 | 75 |
| 7.333 | 213 | 230 | / | 74 | 46 |
| 5.238 | 116 | 109 | 32 | / | / |
| 3.143 | 98 | 100 | 23 | / | / |
| 1.048 | 86 | 101 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
137

E_{min} [lx]
13

E_{max} [lx]
515

$u0$
0.094

E_{min} / E_{max}
0.025

Project 7

Eksisting
Pencahayaannya Buatan
Malam Hari



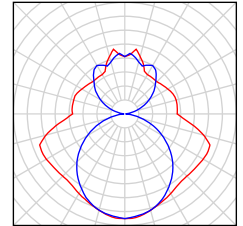
Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Project 7 / Luminaire parts list

49 Pieces

Philips TMS022 2xTL-D36W
Article No.:
Luminaire Luminous Flux: 5000 lm
Luminaire Wattage: 85.0 W
Luminaire classification according to CIE: 63
CIE flux code: 34 61 84 63 94
Fitting: 2 x TL-D36W/54-765 (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Philips TMS022 2xTL-D36W / Luminaire Data Sheet

Luminous emittance 1:



| Glare Evaluation According to UGR | | | | | | | | | | | |
|--|-----|---|------|------|------|------|--|------|------|------|------|
| ρ Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| ρ Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| ρ Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room Size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 18.9 | 20.0 | 19.7 | 20.7 | 21.7 | 16.6 | 17.7 | 17.4 | 18.4 | 19.4 |
| | 3H | 21.8 | 22.7 | 22.6 | 23.5 | 24.5 | 18.0 | 18.9 | 18.8 | 19.7 | 20.7 |
| | 4H | 23.1 | 24.0 | 23.9 | 24.8 | 25.8 | 18.6 | 19.4 | 19.4 | 20.2 | 21.2 |
| | 6H | 24.2 | 25.0 | 25.0 | 25.8 | 26.9 | 19.0 | 19.8 | 19.8 | 20.6 | 21.6 |
| | 12H | 25.1 | 25.9 | 26.0 | 26.7 | 27.8 | 19.2 | 19.9 | 20.0 | 20.8 | 21.8 |
| 4H | 2H | 19.5 | 20.4 | 20.3 | 21.2 | 22.2 | 17.8 | 18.7 | 18.6 | 19.5 | 20.5 |
| | 3H | 22.6 | 23.3 | 23.4 | 24.2 | 25.2 | 19.5 | 20.2 | 20.3 | 21.1 | 22.1 |
| | 4H | 24.1 | 24.7 | 24.9 | 25.6 | 26.7 | 20.2 | 20.9 | 21.1 | 21.7 | 22.8 |
| | 6H | 25.4 | 25.9 | 26.2 | 26.8 | 27.9 | 20.8 | 21.4 | 21.6 | 22.2 | 23.3 |
| | 12H | 26.5 | 27.0 | 27.4 | 27.9 | 29.0 | 21.1 | 21.6 | 22.0 | 22.5 | 23.6 |
| 8H | 4H | 24.4 | 24.9 | 25.3 | 25.8 | 26.9 | 21.3 | 21.9 | 22.2 | 22.8 | 23.9 |
| | 6H | 25.9 | 26.3 | 26.8 | 27.3 | 28.4 | 22.3 | 22.7 | 23.2 | 23.6 | 24.8 |
| | 8H | 26.6 | 27.0 | 27.5 | 27.9 | 29.1 | 22.6 | 23.0 | 23.5 | 24.0 | 25.1 |
| | 12H | 27.3 | 27.7 | 28.2 | 28.6 | 29.8 | 22.9 | 23.3 | 23.8 | 24.2 | 25.4 |
| 12H | 4H | 24.4 | 24.9 | 25.3 | 25.8 | 26.9 | 21.6 | 22.1 | 22.5 | 23.0 | 24.1 |
| | 6H | 26.0 | 26.4 | 26.9 | 27.3 | 28.4 | 22.7 | 23.1 | 23.6 | 24.0 | 25.1 |
| | 8H | 26.8 | 27.1 | 27.7 | 28.0 | 29.2 | 23.2 | 23.5 | 24.1 | 24.5 | 25.6 |
| Variation of the observer position for the luminaire distances S | | | | | | | | | | | |
| S = 1.0H | | +0.1 / -0.1 | | | | | +0.1 / -0.1 | | | | |
| S = 1.5H | | +0.2 / -0.2 | | | | | +0.1 / -0.2 | | | | |
| S = 2.0H | | +0.3 / -0.3 | | | | | +0.3 / -0.4 | | | | |
| Standard table | | BK11 | | | | | BK13 | | | | |
| Correction Summand | | 11.8 | | | | | 6.9 | | | | |
| Corrected Glare Indices referring to 5000lm Total Luminous Flux | | | | | | | | | | | |

Luminaire classification according to CIE: 63
 CIE flux code: 34 61 84 63 94

Lineco TMS022 – an economical choice

Lineco TMS022 is a functional and economical surface-mounted batten for 1 or 2 TL-D fluorescent lamps. It offers a choice of two optics, for symmetrical and asymmetrical lighting. Installation is quick and tool-less and can be carried out single-handedly. The repositionable contact block enables flexible connection (with cable entry centrally or via the end caps). A wide range of snap-on attachments is available.

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

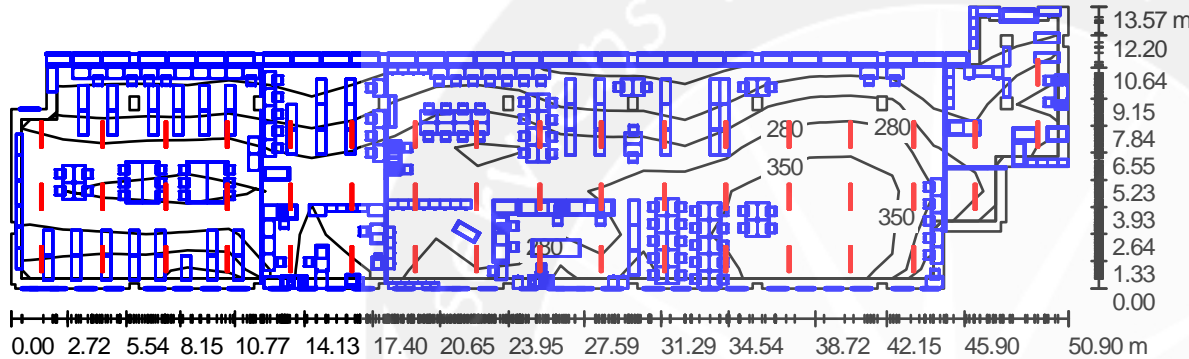
Room 1 / Light scene / Planning data



Scale 1 : 364

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | $u0$ |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 233 | 50 | 394 | 0.215 |
| Floor | 50 | 151 | 11 | 368 | 0.070 |
| Ceilings (302) | 88 | 199 | 12 | 6079 | / |
| Walls (25) | 85 | 104 | 12 | 379 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

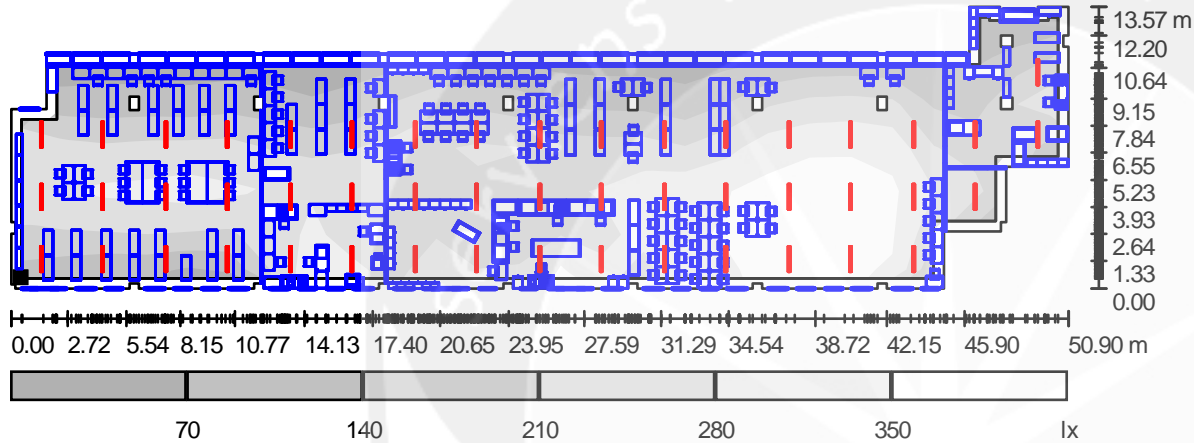
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|----------------------------------|-------------|--------|
| 1 | 49 | Philips TMS022 2xTL-D36W (1.000) | 5000 | 85.0 |
| Total: | | | 245000 | 4165.0 |

Specific connected load: $7.50 \text{ W/m}^2 = 3.21 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

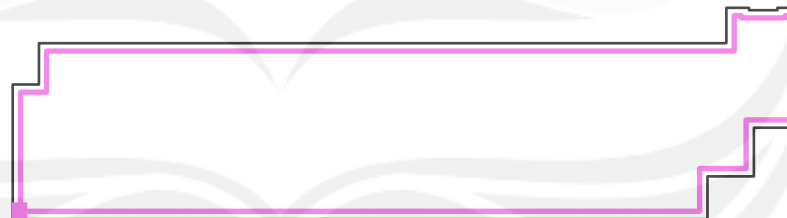
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
233

E_{min} [lx]
50

E_{max} [lx]
394

u_0
0.215

E_{min} / E_{max}
0.127

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 88 | 60 | 72 | 74 | 91 | 56 | 71 | 81 | 151 |
| 7.333 | 234 | 110 | 138 | 153 | 150 | 202 | 68 | 123 | 156 | 251 |
| 5.238 | 282 | 321 | 303 | 319 | 342 | 281 | 254 | 298 | 255 | 282 |
| 3.143 | 274 | 314 | 314 | 318 | 337 | 272 | / | 165 | 221 | 207 |
| 1.048 | 152 | 128 | 142 | 112 | 90 | 167 | 297 | 330 | 228 | 301 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
233

E_{min} [lx]
50

E_{max} [lx]
394

u_0
0.215

E_{min} / E_{max}
0.127

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 162 | 145 | 105 | 87 | 96 | 83 | 80 | 136 | 180 | 217 |
| 7.333 | 261 | 267 | 194 | 140 | 198 | 120 | 113 | 248 | 290 | 308 |
| 5.238 | 311 | 322 | 316 | 306 | 320 | 305 | 302 | 358 | 382 | 388 |
| 3.143 | 214 | 246 | 159 | / | 282 | 357 | 360 | 362 | 389 | <u>394</u> |
| 1.048 | 320 | / | 341 | 332 | 213 | 314 | 340 | 356 | 373 | 373 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
233

E_{min} [lx]
50

E_{max} [lx]
394

u0
0.215

E_{min} / E_{max}
0.127

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | <u>50</u> | 56 |
| 9.428 | 180 | 188 | 118 | 150 | 244 |
| 7.333 | 311 | 284 | / | 264 | 277 |
| 5.238 | 374 | 353 | 232 | / | / |
| 3.143 | 377 | 358 | 227 | / | / |
| 1.048 | 354 | 344 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
233

E_{min} [lx]
50

E_{max} [lx]
394

u0
0.215

E_{min} / E_{max}
0.127

Project 8

Eksisting
Pencahayaannya Alami dan Buatan
Pagi Hari
08.00



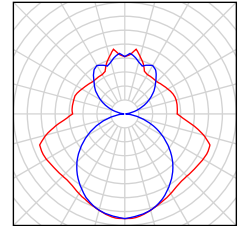
Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Luminaire parts list

49 Pieces

Philips TMS022 2xTL-D36W
Article No.:
Luminaire Luminous Flux: 5000 lm
Luminaire Wattage: 85.0 W
Luminaire classification according to CIE: 63
CIE flux code: 34 61 84 63 94
Fitting: 2 x TL-D36W/54-765 (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



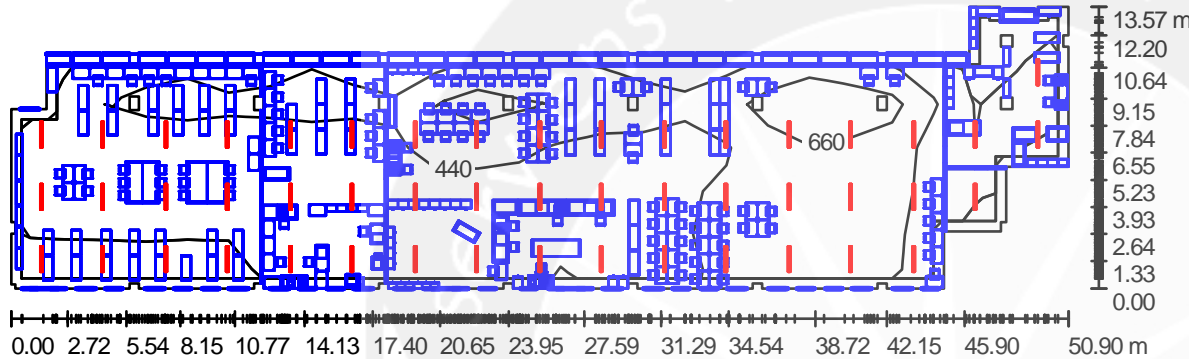
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:08:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 459 | 120 | 1179 | 0.261 |
| Floor | 50 | 256 | 70 | 1177 | 0.273 |
| Ceilings (302) | 88 | 294 | 80 | 6135 | / |
| Walls (25) | 85 | 273 | 53 | 9045 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

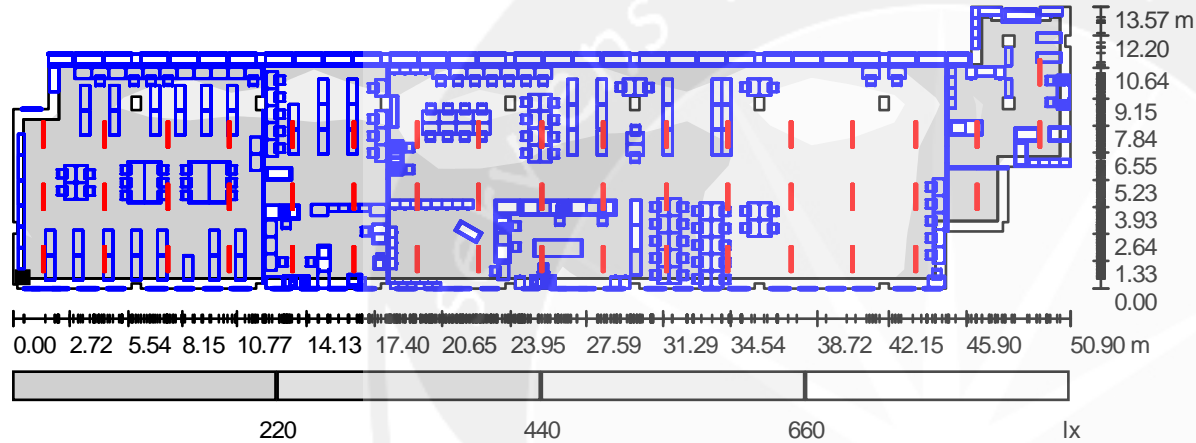
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|----------------------------------|-------------|--------|
| 1 | 49 | Philips TMS022 2xTL-D36W (1.000) | 5000 | 85.0 |
| Total: | | | 245000 | 4165.0 |

Specific connected load: $7.50 \text{ W/m}^2 = 1.63 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

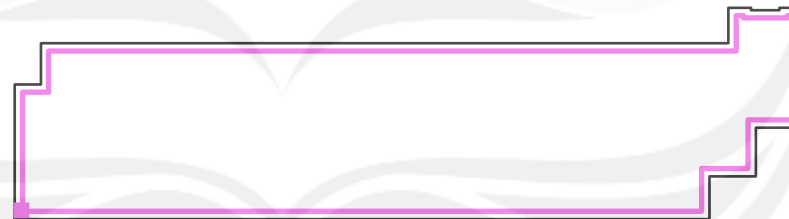
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
|---------------|----------------|----------------|-------|---------------------|
| 459 | 120 | 1179 | 0.261 | 0.102 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 530 | 672 | 821 | 930 | 678 | 923 | 895 | 693 | 483 |
| 7.333 | 348 | 158 | 245 | 260 | 252 | 355 | 216 | 283 | 301 | 630 |
| 5.238 | 332 | 365 | 346 | 368 | 406 | 359 | 299 | 352 | 307 | 395 |
| 3.143 | 314 | 351 | 352 | 359 | 399 | 320 | / | 217 | 284 | 267 |
| 1.048 | 181 | 162 | 176 | 142 | 120 | 216 | 377 | 405 | 288 | 346 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
459

E_{min} [lx]
120

E_{max} [lx]
1179

u0
0.261

E_{min} / E_{max}
0.102

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 1110 | 922 | 937 | 872 | 806 | 521 | 752 | 859 | 1066 | <u>1179</u> |
| 7.333 | 640 | 521 | 478 | 319 | 369 | 355 | 282 | 458 | 703 | 734 |
| 5.238 | 431 | 443 | 410 | 375 | 409 | 380 | 409 | 500 | 561 | 574 |
| 3.143 | 245 | 302 | 222 | / | 356 | 439 | 456 | 485 | 528 | 532 |
| 1.048 | 377 | / | 429 | 413 | 271 | 402 | 444 | 474 | 495 | 503 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
459

E_{min} [lx]
120

E_{max} [lx]
1179

u0
0.261

E_{min} / E_{max}
0.102

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 184 | 187 |
| 9.428 | 879 | 958 | 433 | 200 | 341 |
| 7.333 | 585 | 619 | / | 338 | 341 |
| 5.238 | 532 | 499 | 271 | / | / |
| 3.143 | 521 | 490 | 225 | / | / |
| 1.048 | 491 | 511 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 459 | 120 | 1179 | 0.261 | 0.102 |

Project 9

Eksisting
Pencahayaannya Alami dan Buatan
Siang Hari
12.00

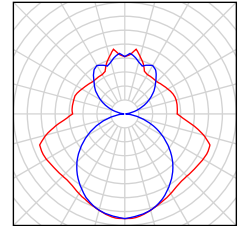


Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Luminaire parts list

49 Pieces

Philips TMS022 2xTL-D36W
Article No.:
Luminaire Luminous Flux: 5000 lm
Luminaire Wattage: 85.0 W
Luminaire classification according to CIE: 63
CIE flux code: 34 61 84 63 94
Fitting: 2 x TL-D36W/54-765 (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



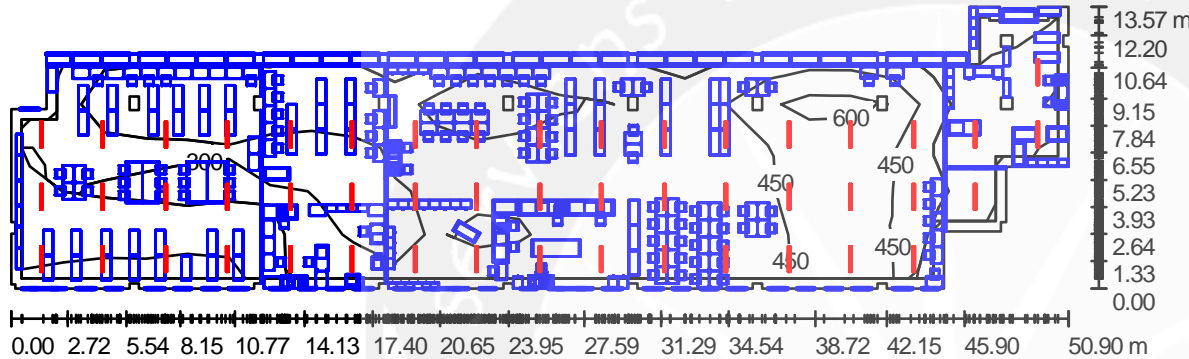
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:12:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | $u0$ |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 381 | 114 | 843 | 0.300 |
| Floor | 50 | 218 | 68 | 809 | 0.310 |
| Ceilings (302) | 88 | 271 | 71 | 6120 | / |
| Walls (25) | 85 | 216 | 42 | 3584 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

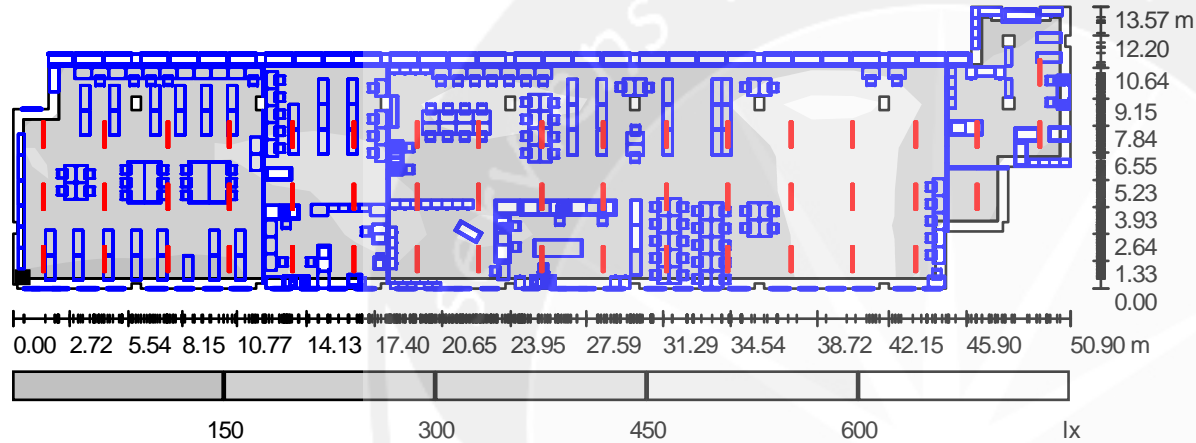
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|----------------------------------|-------------|--------|
| 1 | 49 | Philips TMS022 2xTL-D36W (1.000) | 5000 | 85.0 |
| Total: | | | 245000 | 4165.0 |

Specific connected load: $7.50 \text{ W/m}^2 = 1.97 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

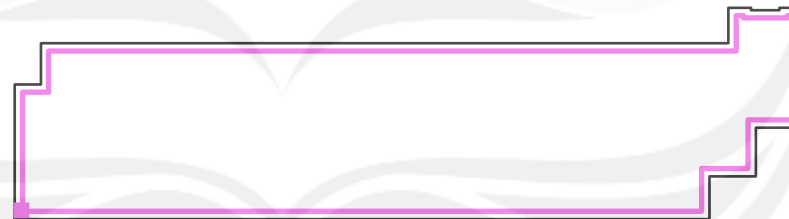
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 381 | 114 | 843 | 0.300 | 0.135 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 432 | 526 | 538 | 685 | 635 | 562 | 632 | 561 | 370 |
| 7.333 | 276 | 142 | 194 | 207 | 206 | 288 | 142 | 207 | 243 | 434 |
| 5.238 | 308 | 342 | 326 | 346 | 374 | 320 | 274 | 328 | 283 | 337 |
| 3.143 | 299 | 330 | 332 | 342 | 368 | 296 | / | 195 | 255 | 249 |
| 1.048 | 177 | 154 | 165 | 133 | 114 | 198 | 348 | 365 | 268 | 334 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
381

E_{min} [lx]
114

E_{max} [lx]
843

u0
0.300

E_{min} / E_{max}
0.135

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 839 | 760 | 635 | 622 | 579 | 352 | 554 | 641 | 724 | <u>843</u> |
| 7.333 | 465 | 430 | 352 | 241 | 301 | 246 | 215 | 370 | 492 | 539 |
| 5.238 | 374 | 393 | 374 | 349 | 367 | 349 | 368 | 430 | 468 | 494 |
| 3.143 | 234 | 302 | 210 | / | 329 | 402 | 413 | 427 | 459 | 472 |
| 1.048 | 358 | / | 407 | 393 | 257 | 376 | 407 | 429 | 450 | 457 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
381

E_{min} [lx]
114

E_{max} [lx]
843

u0
0.300

E_{min} / E_{max}
0.135

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 117 | 159 |
| 9.428 | 775 | 691 | 391 | 188 | 306 |
| 7.333 | 478 | 477 | / | 315 | 315 |
| 5.238 | 468 | 441 | 246 | / | / |
| 3.143 | 458 | 437 | 210 | / | / |
| 1.048 | 445 | 461 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
381

E_{min} [lx]
114

E_{max} [lx]
843

u0
0.300

E_{min} / E_{max}
0.135

Project 10

Eksisting
Pencahaya-an Alami dan Buatan
Sore Hari
16.00

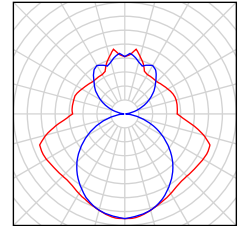


Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Luminaire parts list

49 Pieces

Philips TMS022 2xTL-D36W
Article No.:
Luminaire Luminous Flux: 5000 lm
Luminaire Wattage: 85.0 W
Luminaire classification according to CIE: 63
CIE flux code: 34 61 84 63 94
Fitting: 2 x TL-D36W/54-765 (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



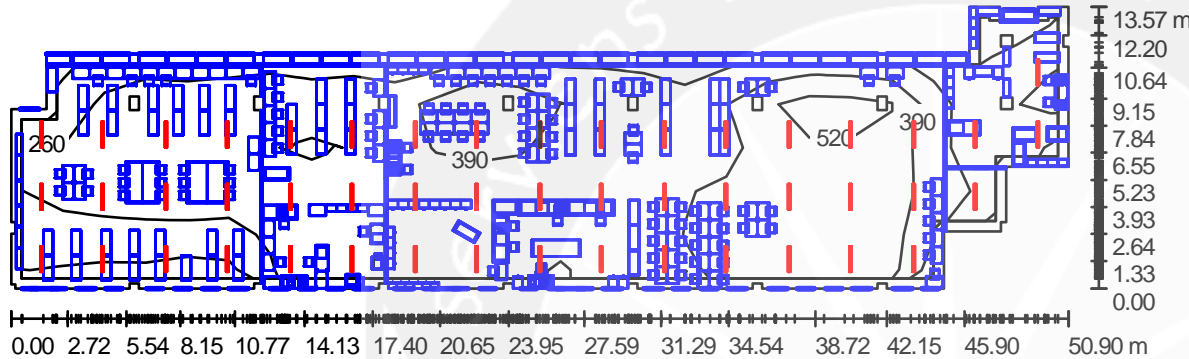
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:16:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | $u0$ |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 358 | 104 | 708 | 0.290 |
| Floor | 50 | 208 | 52 | 647 | 0.251 |
| Ceilings (302) | 88 | 249 | 53 | 6086 | / |
| Walls (25) | 85 | 193 | 35 | 2292 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

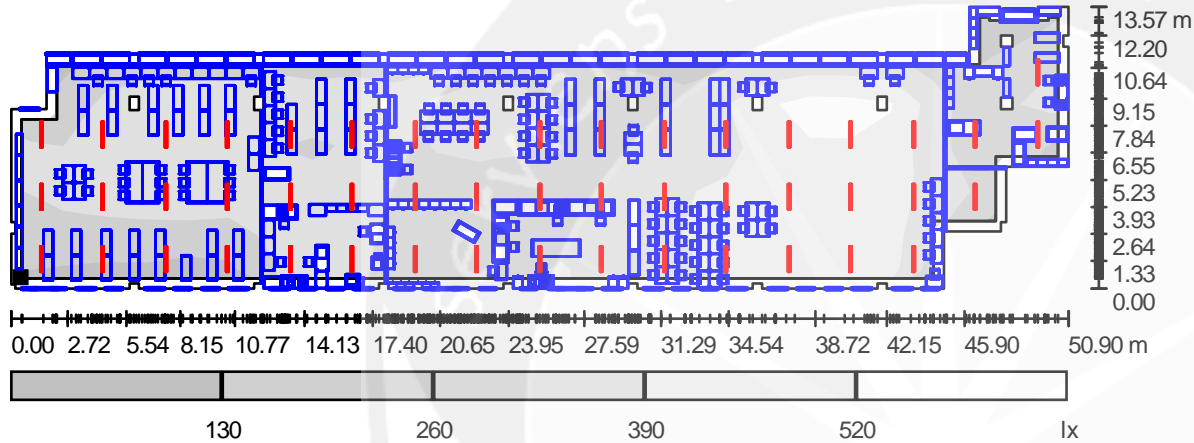
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|----------------------------------|-------------|--------|
| 1 | 49 | Philips TMS022 2xTL-D36W (1.000) | 5000 | 85.0 |
| Total: | | | 245000 | 4165.0 |

Specific connected load: $7.50 \text{ W/m}^2 = 2.09 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

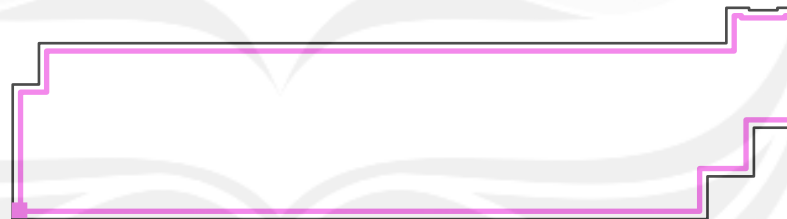
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
358

E_{min} [lx]
104

E_{max} [lx]
708

u_0
0.290

E_{min} / E_{max}
0.147

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 304 | 432 | 456 | 492 | 532 | 483 | 468 | 507 | 310 |
| 7.333 | 266 | 138 | 200 | 205 | 206 | 296 | 148 | 209 | 248 | 426 |
| 5.238 | 300 | 345 | 328 | 345 | 374 | 317 | 279 | 330 | 278 | 336 |
| 3.143 | 288 | 329 | 331 | 338 | 368 | 300 | / | 191 | 253 | 243 |
| 1.048 | 165 | 146 | 160 | 127 | 104 | 191 | 338 | 366 | 257 | 326 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
358

E_{min} [lx]
104

E_{max} [lx]
708

u0
0.290

E_{min} / E_{max}
0.147

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 628 | 614 | 534 | 473 | 526 | 313 | 450 | 561 | 640 | <u>708</u> |
| 7.333 | 469 | 446 | 367 | 241 | 301 | 252 | 226 | 374 | 494 | 551 |
| 5.238 | 377 | 398 | 374 | 348 | 369 | 348 | 367 | 429 | 467 | 494 |
| 3.143 | 232 | 279 | 193 | / | 326 | 401 | 414 | 423 | 458 | 471 |
| 1.048 | 347 | / | 395 | 379 | 247 | 363 | 399 | 417 | 439 | 443 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
358

E_{min} [lx]
104

E_{max} [lx]
708

u0
0.290

E_{min} / E_{max}
0.147

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | <u>104</u> | 141 |
| 9.428 | 629 | 619 | 291 | 181 | 308 |
| 7.333 | 504 | 492 | / | 320 | 310 |
| 5.238 | 472 | 444 | 249 | / | / |
| 3.143 | 458 | 440 | 218 | / | / |
| 1.048 | 428 | 436 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 358 | 104 | 708 | 0.290 | 0.147 |

Project 11

Optimasi
Pencahaya-an Alami
Pagi Hari
08.00

- Kaca Bening



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



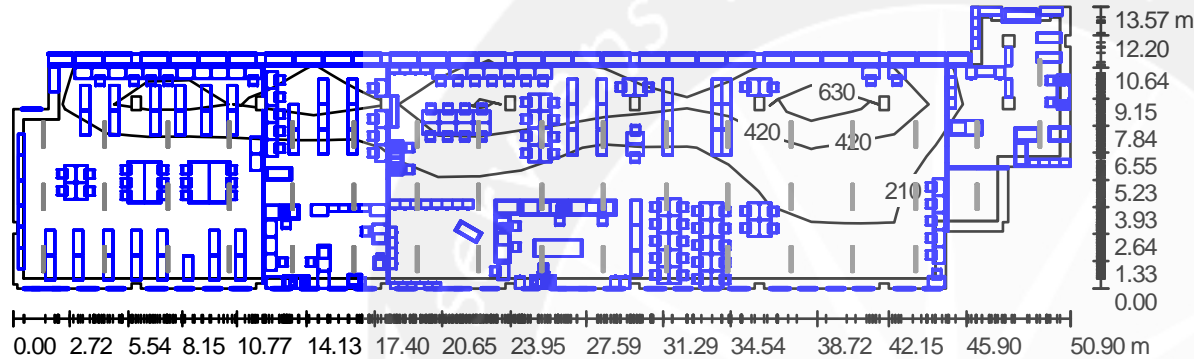
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:08:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 281 | 30 | 1041 | 0.108 |
| Floor | 50 | 144 | 20 | 1133 | 0.141 |
| Ceilings (302) | 88 | 144 | 24 | 974 | / |
| Walls (25) | 85 | 225 | 37 | 9037 | / |

Workplane:

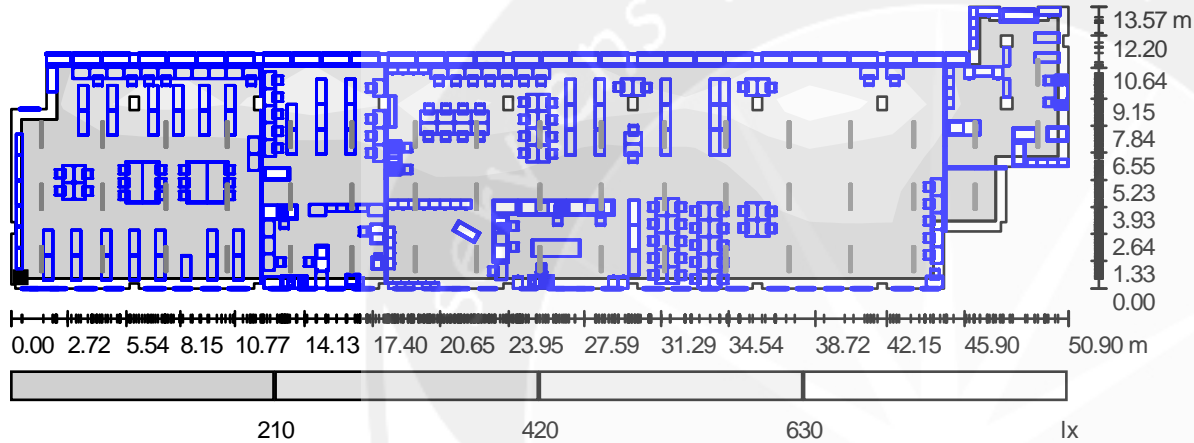
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

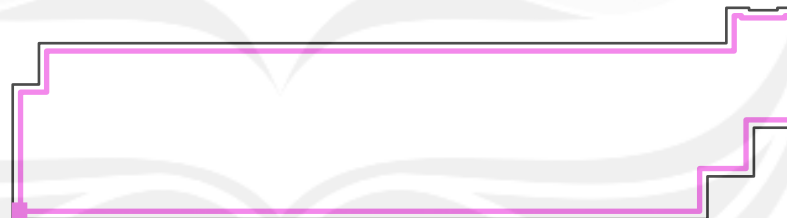
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
281

E_{min} [lx]
30

E_{max} [lx]
1041

u_0
0.108

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 482 | 763 | 800 | 906 | 660 | 946 | 871 | 694 | 404 |
| 7.333 | 173 | 71 | 158 | 149 | 141 | 209 | 190 | 211 | 202 | 509 |
| 5.238 | 83 | 96 | 81 | 92 | 111 | 127 | 81 | 96 | 104 | 201 |
| 3.143 | 64 | 85 | 83 | 83 | 107 | 98 | / | 70 | 104 | 49 |
| 1.048 | 32 | 41 | 48 | 43 | <u>30</u> | 71 | 111 | 108 | 81 | 72 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
281

E_{min} [lx]
30

E_{max} [lx]
1041

u0
0.108

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 1007 | 868 | 900 | 833 | 827 | 482 | 716 | 812 | 970 | <u>1041</u> |
| 7.333 | 516 | 359 | 396 | 230 | 245 | 298 | 227 | 275 | 568 | 569 |
| 5.238 | 216 | 209 | 150 | 105 | 146 | 111 | 146 | 214 | 261 | 279 |
| 3.143 | 52 | 73 | 68 | / | 118 | 139 | 157 | 176 | 211 | 214 |
| 1.048 | 92 | / | 130 | 122 | 77 | 127 | 146 | 159 | 173 | 180 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
281

E_{min} [lx]
30

E_{max} [lx]
1041

u0
0.108

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 136 | 140 |
| 9.428 | 791 | 858 | 324 | 70 | 141 |
| 7.333 | 387 | 446 | / | 120 | 99 |
| 5.238 | 247 | 218 | 67 | / | / |
| 3.143 | 226 | 210 | 52 | / | / |
| 1.048 | 187 | 209 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
281

E_{min} [lx]
30

E_{max} [lx]
1041

u0
0.108

E_{min} / E_{max}
0.029

Project 12

Optimasi
Pencahaya-an Alami
Pagi Hari
08.00

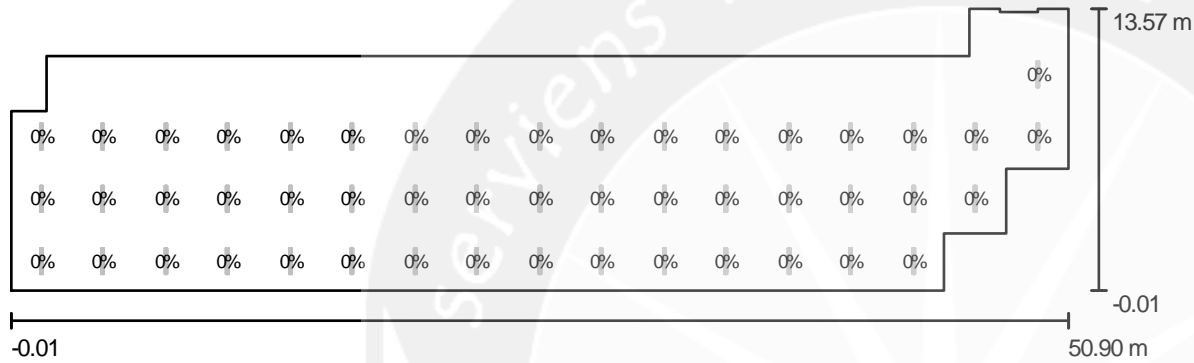
- Kaca Bening
- Bidang Pemantul



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



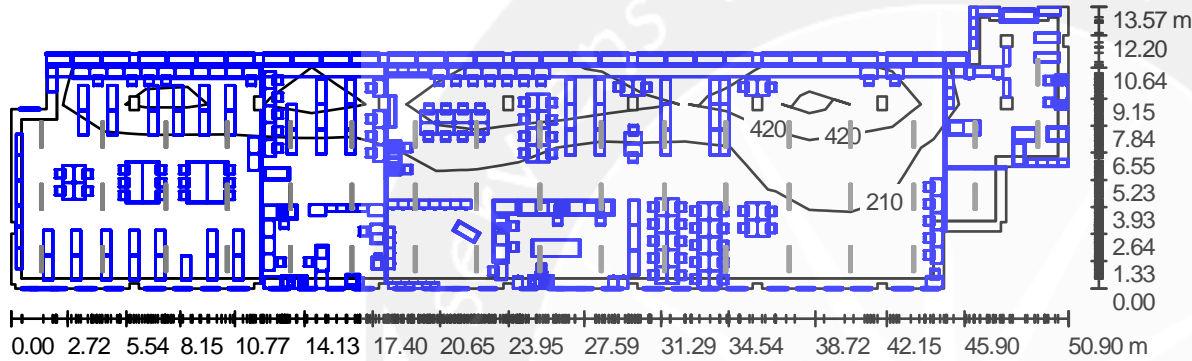
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:08:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 267 | 31 | 1037 | 0.115 |
| Floor | 50 | 133 | 20 | 1132 | 0.150 |
| Ceilings (302) | 88 | 147 | 23 | 974 | / |
| Walls (25) | 85 | 224 | 35 | 9036 | / |

Workplane:

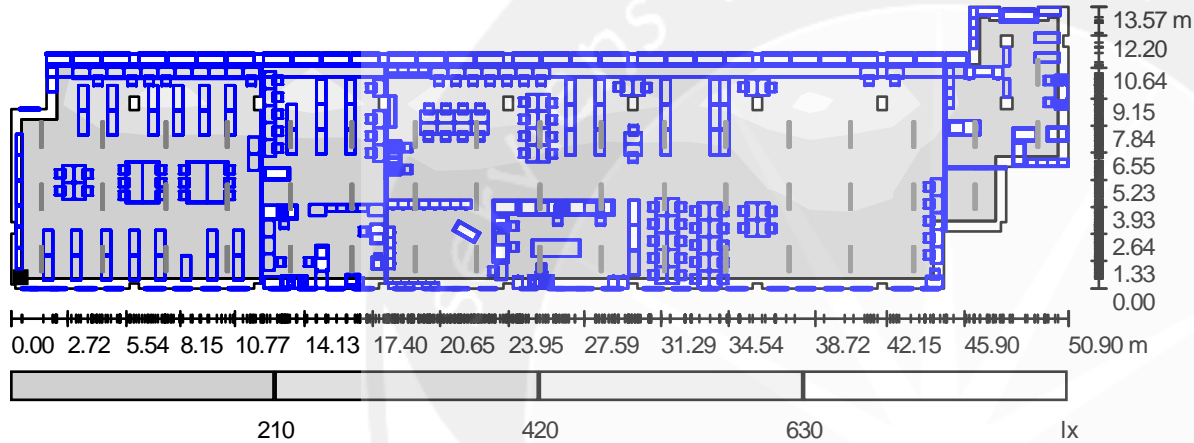
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

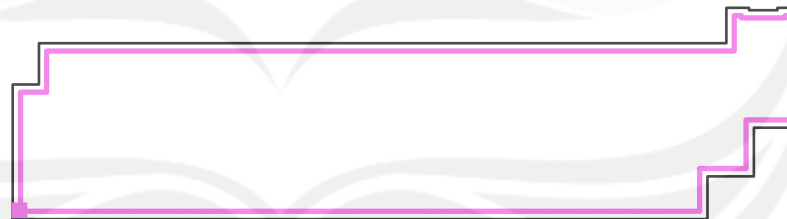
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
267

E_{min} [lx]
31

E_{max} [lx]
1037

u_0
0.115

E_{min} / E_{max}
0.030

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 480 | 753 | 804 | 903 | 640 | 932 | 871 | 679 | 409 |
| 7.333 | 149 | 63 | 138 | 120 | 116 | 170 | 166 | 180 | 170 | 424 |
| 5.238 | 77 | 92 | 79 | 89 | 110 | 116 | 82 | 93 | 95 | 182 |
| 3.143 | 64 | 81 | 80 | 81 | 102 | 95 | / | 69 | 103 | 48 |
| 1.048 | 32 | 41 | 47 | 43 | 31 | 71 | 111 | 108 | 80 | 71 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
267

E_{min} [lx]
31

E_{max} [lx]
1037

u0
0.115

E_{min} / E_{max}
0.030

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 1012 | 844 | 892 | 832 | 812 | 477 | 713 | 804 | 965 | <u>1037</u> |
| 7.333 | 428 | 296 | 332 | 200 | 197 | 251 | 180 | 236 | 466 | 469 |
| 5.238 | 203 | 183 | 141 | 105 | 136 | 111 | 141 | 195 | 237 | 255 |
| 3.143 | 51 | 72 | 68 | / | 115 | 135 | 150 | 169 | 200 | 203 |
| 1.048 | 91 | / | 129 | 122 | 76 | 125 | 144 | 157 | 169 | 175 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
267

E_{min} [lx]
31

E_{max} [lx]
1037

u0
0.115

E_{min} / E_{max}
0.030

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 136 | 140 |
| 9.428 | 783 | 849 | 324 | 68 | 139 |
| 7.333 | 324 | 371 | / | 112 | 97 |
| 5.238 | 228 | 204 | 62 | / | / |
| 3.143 | 214 | 202 | 51 | / | / |
| 1.048 | 183 | 206 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
267

E_{min} [lx]
31

E_{max} [lx]
1037

u0
0.115

E_{min} / E_{max}
0.030

Project 13

Optimasi
Pencahayaannya Alami
Siang Hari
12.00

- Kaca Bening



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



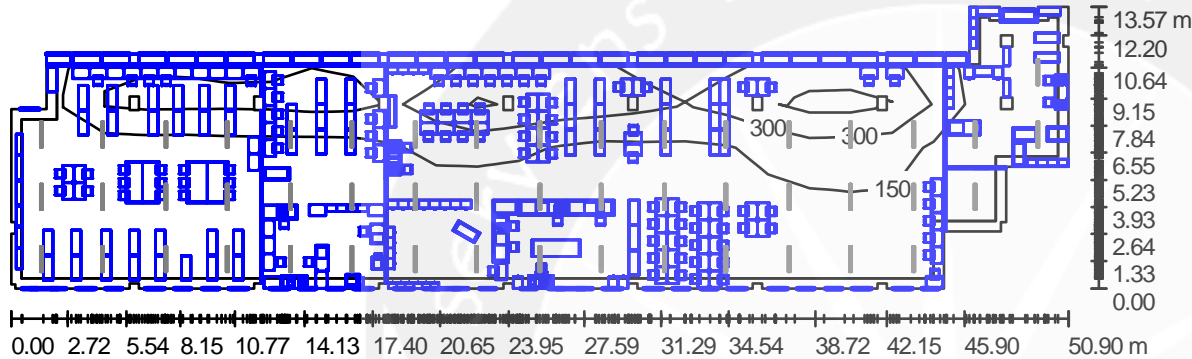
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:12:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 185 | 23 | 723 | 0.122 |
| Floor | 50 | 96 | 17 | 761 | 0.173 |
| Ceilings (302) | 88 | 108 | 15 | 765 | / |
| Walls (25) | 85 | 149 | 26 | 3563 | / |

Workplane:

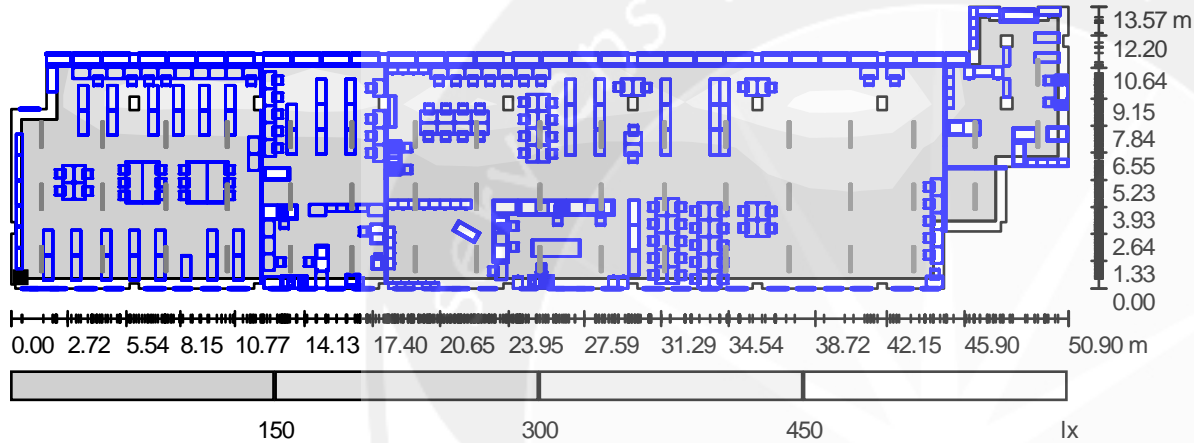
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

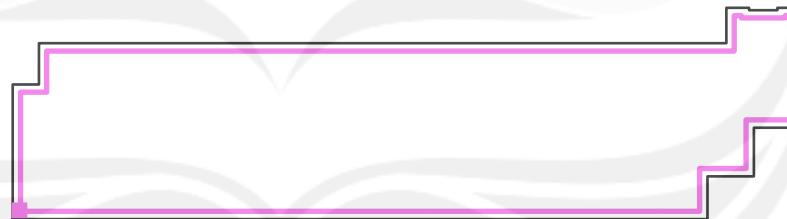
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
185

E_{min} [lx]
23

E_{max} [lx]
723

u_0
0.122

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 355 | 538 | 499 | 643 | 589 | 547 | 585 | 530 | 260 |
| 7.333 | 76 | 49 | 98 | 84 | 81 | 129 | 103 | 122 | 129 | 265 |
| 5.238 | 44 | 59 | 50 | 59 | 65 | 69 | 49 | 59 | 60 | 109 |
| 3.143 | 37 | 48 | 50 | 51 | 63 | 57 | / | 42 | 57 | 39 |
| 1.048 | 26 | 28 | 32 | 31 | <u>23</u> | 44 | 73 | 74 | 53 | 53 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
185

E_{min} [lx]
23

E_{max} [lx]
723

u0
0.122

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | <u>723</u> | 672 | 575 | 573 | 557 | 295 | 497 | 559 | 599 | 692 |
| 7.333 | 300 | 242 | 236 | 134 | 148 | 162 | 151 | 174 | 309 | 333 |
| 5.238 | 125 | 128 | 95 | 67 | 89 | 73 | 92 | 118 | 142 | 169 |
| 3.143 | 34 | 49 | 46 | / | 73 | 83 | 94 | 100 | 121 | 133 |
| 1.048 | 61 | / | 88 | 84 | 59 | 80 | 97 | 102 | 113 | 121 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
185

E_{min} [lx]
23

E_{max} [lx]
723

u0
0.122

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 65 | 108 |
| 9.428 | 687 | 577 | 297 | 56 | 99 |
| 7.333 | 267 | 287 | / | 92 | 65 |
| 5.238 | 159 | 144 | 64 | / | / |
| 3.143 | 138 | 137 | 39 | / | / |
| 1.048 | 126 | 150 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 185 | 23 | 723 | 0.122 | 0.031 |

Project 14

Optimasi
Pencahayaannya Alami
Siang Hari
12.00

- Kaca Bening
- Bidang Pemandul



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



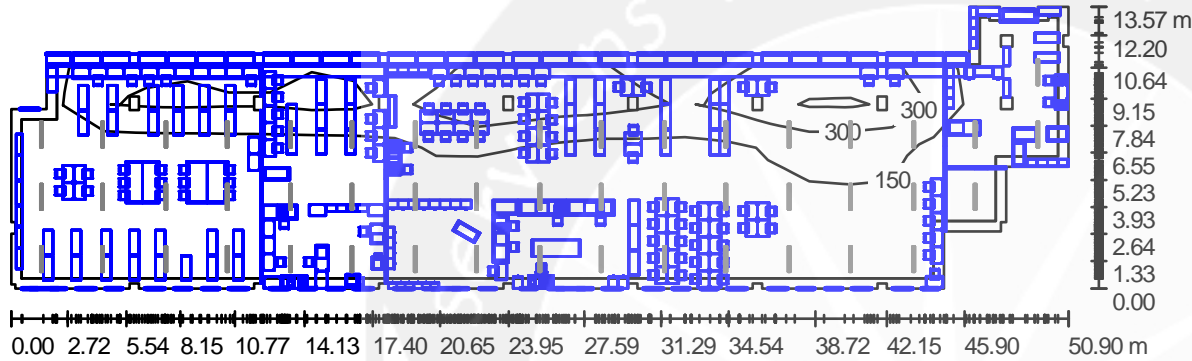
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:12:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 177 | 23 | 732 | 0.128 |
| Floor | 50 | 89 | 16 | 761 | 0.183 |
| Ceilings (302) | 88 | 107 | 15 | 762 | / |
| Walls (25) | 85 | 148 | 25 | 3559 | / |

Workplane:

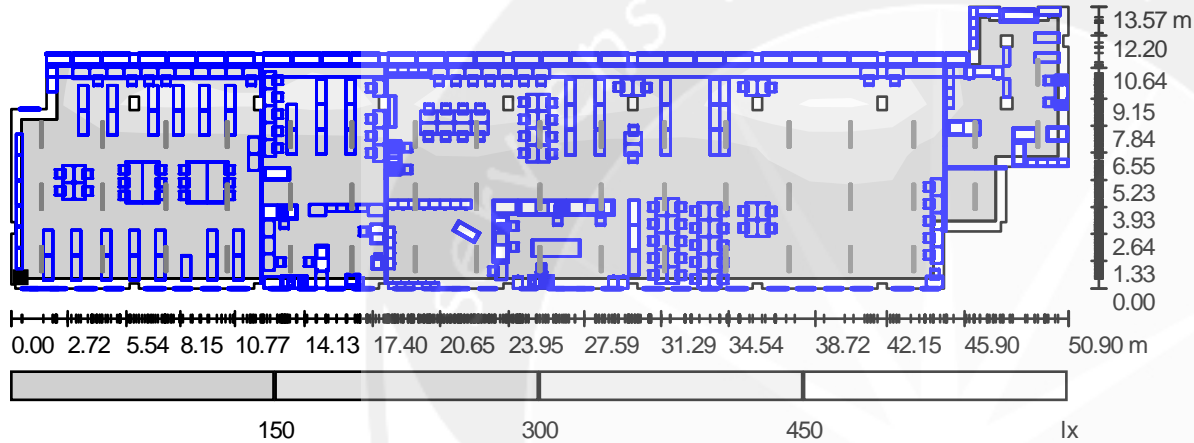
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

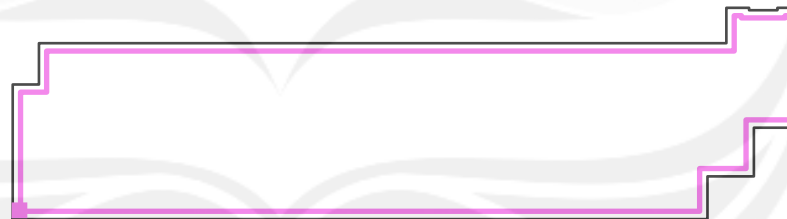
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
177

E_{min} [lx]
23

E_{max} [lx]
732

u_0
0.128

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 359 | 508 | 503 | 646 | 572 | 540 | 587 | 529 | 269 |
| 7.333 | 67 | 43 | 82 | 66 | 67 | 101 | 88 | 103 | 106 | 219 |
| 5.238 | 42 | 57 | 49 | 57 | 65 | 64 | 49 | 57 | 56 | 100 |
| 3.143 | 37 | 45 | 49 | 49 | 60 | 55 | / | 41 | 56 | 37 |
| 1.048 | 26 | 28 | 32 | 31 | <u>23</u> | 44 | 72 | 73 | 53 | 52 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
177

E_{min} [lx]
23

E_{max} [lx]
732

u0
0.128

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | <u>732</u> | 672 | 571 | 575 | 533 | 299 | 498 | 555 | 601 | 691 |
| 7.333 | 243 | 192 | 189 | 114 | 118 | 136 | 114 | 147 | 249 | 269 |
| 5.238 | 118 | 114 | 89 | 66 | 83 | 72 | 89 | 109 | 132 | 156 |
| 3.143 | 33 | 48 | 45 | / | 71 | 81 | 90 | 97 | 115 | 125 |
| 1.048 | 60 | / | 87 | 84 | 58 | 80 | 95 | 100 | 111 | 117 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
177

E_{min} [lx]
23

E_{max} [lx]
732

u0
0.128

E_{min} / E_{max}
0.031

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 63 | 108 |
| 9.428 | 681 | 572 | 296 | 51 | 98 |
| 7.333 | 215 | 235 | / | 84 | 63 |
| 5.238 | 146 | 136 | 60 | / | / |
| 3.143 | 131 | 131 | 37 | / | / |
| 1.048 | 124 | 147 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
177

E_{min} [lx]
23

E_{max} [lx]
732

u0
0.128

E_{min} / E_{max}
0.031

Project 15

Optimasi
Pencahayaannya Alami
Sore Hari
16.00

- Kaca Bening



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



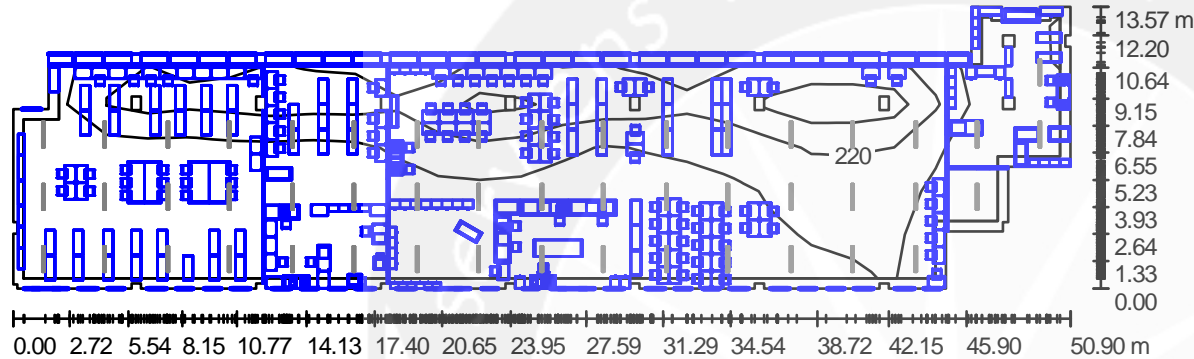
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:16:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 159 | 16 | 547 | 0.100 |
| Floor | 50 | 80 | 10 | 603 | 0.130 |
| Ceilings (302) | 88 | 79 | 12 | 387 | / |
| Walls (25) | 85 | 120 | 21 | 2272 | / |

Workplane:

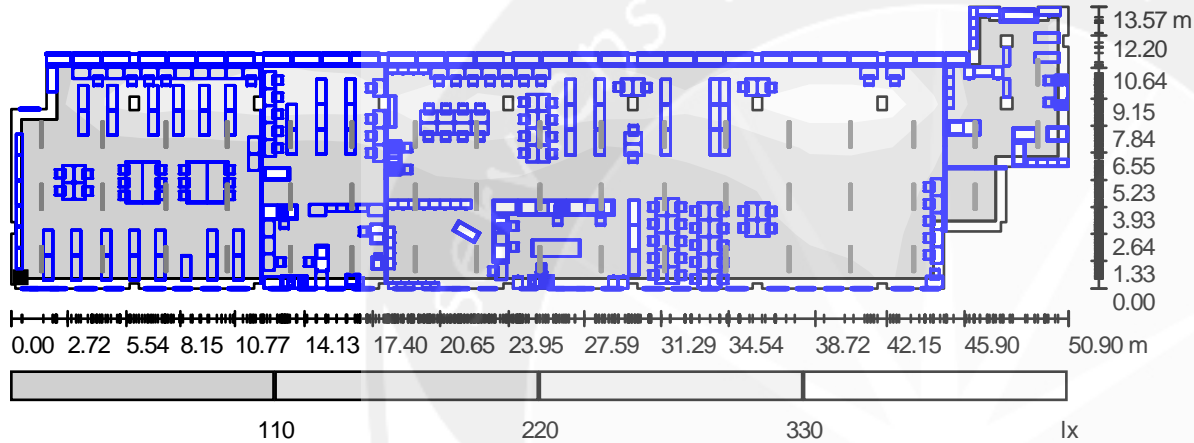
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

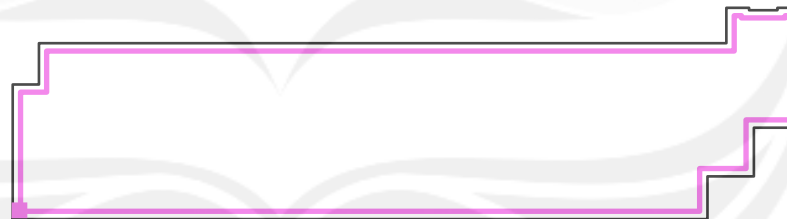
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 159 | 16 | 547 | 0.100 | 0.029 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 230 | 467 | 416 | 456 | 494 | 480 | 429 | 475 | 200 |
| 7.333 | 61 | 44 | 90 | 75 | 75 | 127 | 101 | 115 | 124 | 238 |
| 5.238 | 35 | 52 | 42 | 49 | 58 | 63 | 42 | 52 | 55 | 97 |
| 3.143 | 31 | 43 | 44 | 43 | 59 | 53 | / | 35 | 52 | 26 |
| 1.048 | 17 | 21 | 25 | 22 | <u>16</u> | 37 | 57 | 54 | 42 | 37 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
159

E_{min} [lx]
16

E_{max} [lx]
547

u0
0.100

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 501 | 535 | 473 | 423 | 499 | 259 | 394 | 488 | 519 | <u>547</u> |
| 7.333 | 288 | 250 | 237 | 129 | 144 | 166 | 156 | 161 | 291 | 326 |
| 5.238 | 117 | 127 | 90 | 60 | 78 | 63 | 94 | 105 | 130 | 162 |
| 3.143 | 28 | 40 | 38 | / | 68 | 80 | 91 | 93 | 114 | 132 |
| 1.048 | 46 | / | 77 | 72 | 46 | 72 | 85 | 89 | 99 | 103 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
159

E_{min} [lx]
16

E_{max} [lx]
547

u0
0.100

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 50 | 96 |
| 9.428 | 524 | 502 | 199 | 44 | 98 |
| 7.333 | 274 | 293 | / | 105 | 65 |
| 5.238 | 158 | 139 | 44 | / | / |
| 3.143 | 135 | 135 | 30 | / | / |
| 1.048 | 111 | 122 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 159 | 16 | 547 | 0.100 | 0.029 |

Project 16

Optimasi
Pencahayaannya Alami
Sore Hari
16.00

- Kaca Bening
- Bidang Pemantul



Date: 18.09.2011
Operator: Adeli Rahaman Riandito, ST

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Planning data



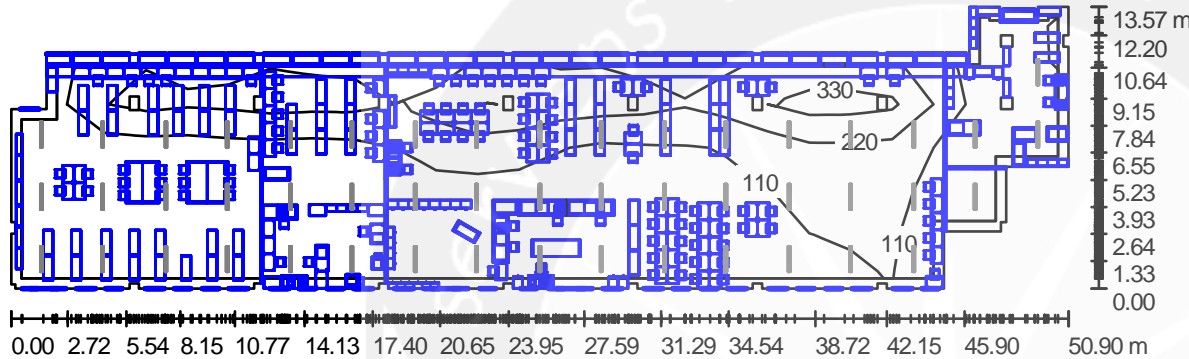
Scale 1 : 364

Daylight parameters:

Location: FTSP UII, Longitude: 110.41°, Latitude: -7.68°
Date: 18.09.2011, Time:16:00:00 (+7 hours difference to GMT)
Reference sky type: Mixed sky

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.630 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u_0 |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 151 | 16 | 545 | 0.106 |
| Floor | 50 | 74 | 10 | 602 | 0.141 |
| Ceilings (302) | 88 | 80 | 12 | 432 | / |
| Walls (25) | 85 | 119 | 21 | 2270 | / |

Workplane:

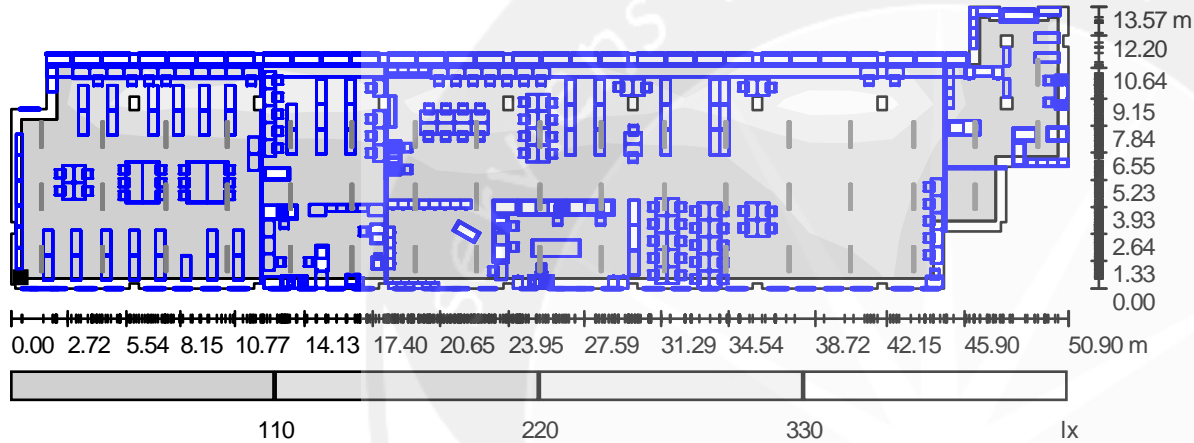
Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

Pure daylight scene, no luminaires involved.

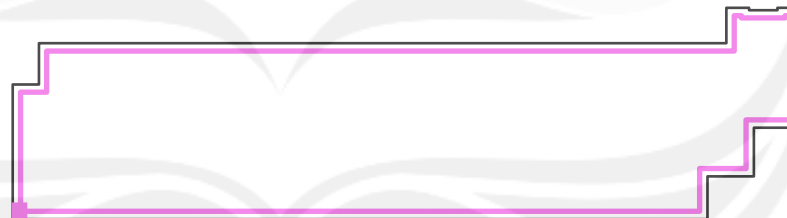
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

E_{av} [lx]
151

E_{min} [lx]
16

E_{max} [lx]
545

u_0
0.106

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 230 | 460 | 418 | 453 | 482 | 472 | 427 | 467 | 203 |
| 7.333 | 55 | 37 | 77 | 60 | 64 | 104 | 92 | 100 | 102 | 201 |
| 5.238 | 33 | 50 | 40 | 47 | 58 | 59 | 42 | 51 | 52 | 88 |
| 3.143 | 30 | 40 | 43 | 42 | 57 | 51 | / | 35 | 52 | 29 |
| 1.048 | 17 | 21 | 25 | 22 | <u>16</u> | 37 | 57 | 54 | 42 | 37 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
151

E_{min} [lx]
16

E_{max} [lx]
545

u0
0.106

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 502 | 529 | 474 | 423 | 491 | 257 | 396 | 482 | 513 | <u>545</u> |
| 7.333 | 237 | 200 | 195 | 112 | 116 | 137 | 118 | 138 | 241 | 270 |
| 5.238 | 109 | 111 | 84 | 60 | 72 | 63 | 89 | 98 | 120 | 148 |
| 3.143 | 28 | 39 | 37 | / | 66 | 77 | 86 | 88 | 108 | 123 |
| 1.048 | 45 | / | 76 | 71 | 45 | 72 | 83 | 88 | 97 | 101 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
151

E_{min} [lx]
16

E_{max} [lx]
545

u0
0.106

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 50 | 96 |
| 9.428 | 519 | 495 | 195 | 43 | 98 |
| 7.333 | 224 | 243 | / | 93 | 64 |
| 5.238 | 142 | 131 | 41 | / | / |
| 3.143 | 128 | 129 | 31 | / | / |
| 1.048 | 109 | 119 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 151 | 16 | 545 | 0.106 | 0.029 |

Project 17

Optimasi
Pencahayaannya Buatan
Malam Hari

- Lampu TL5

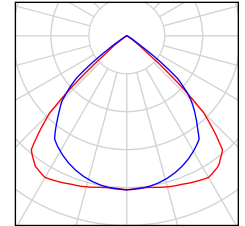


Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Project 17 / Luminaire parts list

49 Pieces

Philips TPS460 2xTL5-28W HFP C8-VH
Article No.:
Luminaire Luminous Flux: 5200 lm
Luminaire Wattage: 62.0 W
Luminaire classification according to CIE: 100
CIE flux code: 73 100 100 100 88
Fitting: 2 x TL5-28W/840 (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Philips TPS460 2xTL5-28W HFP C8-VH / Luminaire Data Sheet

Luminous emittance 1:



| Glare Evaluation According to UGR | | | | | | | | | | | |
|--|------|---|------|------|------|------|--|------|------|------|------|
| ρ Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| ρ Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| ρ Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room Size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 18.7 | 19.7 | 19.0 | 19.9 | 20.1 | 19.1 | 20.0 | 19.3 | 20.2 | 20.4 |
| | 3H | 18.6 | 19.4 | 18.9 | 19.7 | 19.9 | 18.9 | 19.8 | 19.2 | 20.0 | 20.3 |
| | 4H | 18.5 | 19.3 | 18.8 | 19.5 | 19.8 | 18.9 | 19.6 | 19.2 | 19.9 | 20.2 |
| | 6H | 18.4 | 19.2 | 18.8 | 19.4 | 19.7 | 18.8 | 19.5 | 19.1 | 19.8 | 20.1 |
| | 8H | 18.4 | 19.1 | 18.7 | 19.4 | 19.7 | 18.7 | 19.4 | 19.1 | 19.7 | 20.0 |
| 12H | 18.4 | 19.0 | 18.7 | 19.3 | 19.6 | 18.7 | 19.4 | 19.1 | 19.7 | 20.0 | |
| 4H | 2H | 18.6 | 19.4 | 18.9 | 19.6 | 19.9 | 18.9 | 19.7 | 19.2 | 19.9 | 20.2 |
| | 3H | 18.4 | 19.1 | 18.8 | 19.4 | 19.7 | 18.7 | 19.4 | 19.1 | 19.7 | 20.0 |
| | 4H | 18.4 | 18.9 | 18.7 | 19.3 | 19.6 | 18.7 | 19.2 | 19.1 | 19.6 | 19.9 |
| | 6H | 18.3 | 18.8 | 18.7 | 19.1 | 19.5 | 18.6 | 19.1 | 19.0 | 19.4 | 19.8 |
| | 8H | 18.2 | 18.7 | 18.7 | 19.1 | 19.5 | 18.6 | 19.0 | 19.0 | 19.4 | 19.8 |
| 12H | 18.2 | 18.6 | 18.6 | 19.0 | 19.4 | 18.5 | 18.9 | 19.0 | 19.3 | 19.7 | |
| 8H | 4H | 18.2 | 18.7 | 18.7 | 19.1 | 19.5 | 18.6 | 19.0 | 19.0 | 19.4 | 19.8 |
| | 6H | 18.2 | 18.5 | 18.6 | 18.9 | 19.4 | 18.5 | 18.8 | 18.9 | 19.2 | 19.7 |
| | 8H | 18.1 | 18.4 | 18.6 | 18.9 | 19.3 | 18.4 | 18.7 | 18.9 | 19.2 | 19.6 |
| | 12H | 18.1 | 18.3 | 18.6 | 18.8 | 19.3 | 18.4 | 18.6 | 18.9 | 19.1 | 19.6 |
| 12H | 4H | 18.2 | 18.6 | 18.6 | 19.0 | 19.4 | 18.5 | 18.9 | 19.0 | 19.3 | 19.7 |
| | 6H | 18.1 | 18.4 | 18.6 | 18.9 | 19.3 | 18.4 | 18.7 | 18.9 | 19.2 | 19.6 |
| | 8H | 18.1 | 18.3 | 18.6 | 18.8 | 19.3 | 18.4 | 18.6 | 18.9 | 19.1 | 19.6 |
| Variation of the observer position for the luminaire distances S | | | | | | | | | | | |
| S = 1.0H | | +2.8 / -16.1 | | | | | +2.4 / -6.0 | | | | |
| S = 1.5H | | +4.4 / -28.1 | | | | | +3.4 / -19.2 | | | | |
| S = 2.0H | | +6.4 / -32.4 | | | | | +5.4 / -32.0 | | | | |
| Standard table | | BK00 | | | | | BK00 | | | | |
| Correction Summand | | -0.3 | | | | | -0.0 | | | | |
| Corrected Glare Indices referring to 5200lm Total Luminous Flux | | | | | | | | | | | |

Luminaire classification according to CIE: 100
 CIE flux code: 73 100 100 100 88

SmartForm – top-class lighting in a fresh, appealing design

We all feel and perform better in a pleasant, comfortable working environment. Designed for use in offices, shops and schools, the SmartForm family of suspended mounted luminaires combines best-in-class lighting with a clean, distinctive design.

These ultra-flat luminaires are available with a choice of MASTER TL5, TL5 ECO or LED light sources in rectangular and square versions with direct/indirect lighting combinations. They can also be used to form light-lines and structures.

With its wide choice of very efficient and comfortable micro-optics and covers, SmartForm suspended provides the ideal solution for every situation. Lighting controls can be added for further energy saving.

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

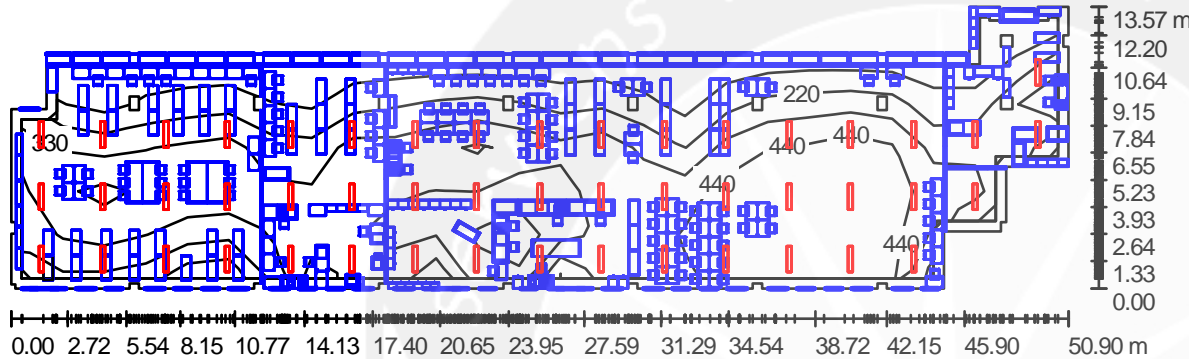
Room 1 / Light scene / Planning data



Scale 1 : 364

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.130 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | $u0$ |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 305 | 16 | 553 | 0.052 |
| Floor | 50 | 213 | 5.41 | 540 | 0.025 |
| Ceilings (302) | 88 | 79 | 10 | 190 | / |
| Walls (25) | 85 | 76 | 9.38 | 318 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

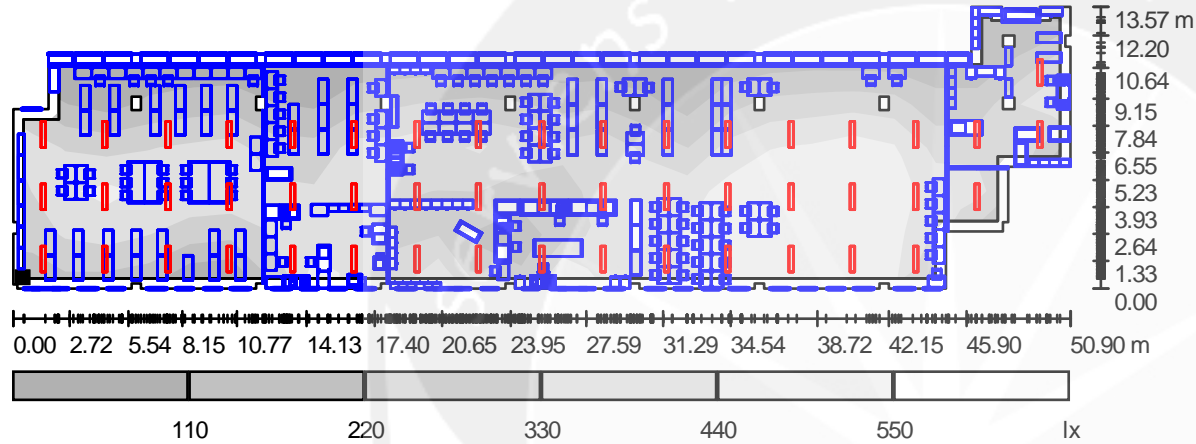
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|--|-------------|--------|
| 1 | 49 | Philips TPS460 2xTL5-28W HFP C8-VH (1.000) | 5200 | 62.0 |
| Total: | | | 254800 | 3038.0 |

Specific connected load: $5.47 \text{ W/m}^2 = 1.79 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

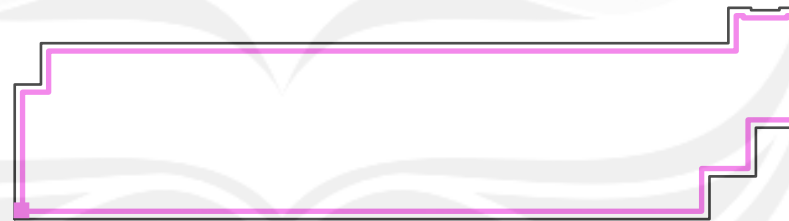
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 305 | 16 | 553 | 0.052 | 0.029 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 24 | <u>16</u> | 51 | 67 | 53 | 17 | 73 | 74 | 100 |
| 7.333 | 346 | 35 | 164 | 311 | 283 | 389 | 21 | 263 | 300 | 351 |
| 5.238 | 376 | 484 | 478 | 370 | 474 | 399 | 262 | 482 | 412 | 381 |
| 3.143 | 370 | 479 | 473 | 381 | 450 | 349 | / | 108 | 349 | 150 |
| 1.048 | 208 | 311 | 292 | 168 | 67 | 175 | 405 | 477 | 223 | 393 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
305

E_{min} [lx]
16

E_{max} [lx]
553

$u0$
0.052

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 86 | 98 | 66 | 77 | 83 | 31 | 47 | 102 | 129 | 158 |
| 7.333 | 423 | 417 | 329 | 279 | 406 | 49 | 168 | 431 | 384 | 469 |
| 5.238 | 495 | 486 | 389 | 471 | 488 | 275 | 402 | 516 | 420 | <u>553</u> |
| 3.143 | 175 | 197 | 52 | / | 449 | 417 | 521 | 514 | 447 | <u>553</u> |
| 1.048 | 472 | / | 405 | 466 | 317 | 391 | 491 | 487 | 440 | 524 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
305

E_{min} [lx]
16

E_{max} [lx]
553

u_0
0.052

E_{min} / E_{max}
0.029

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 18 | 18 |
| 9.428 | 101 | 133 | 98 | 102 | 388 |
| 7.333 | 453 | 392 | / | 428 | 404 |
| 5.238 | 522 | 428 | 349 | / | / |
| 3.143 | 522 | 454 | 366 | / | / |
| 1.048 | 500 | 444 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 305 | 16 | 553 | 0.052 | 0.029 |

Project 18

Optimasi
Pencahayaannya Buatan
Malam Hari

- Lampu LED

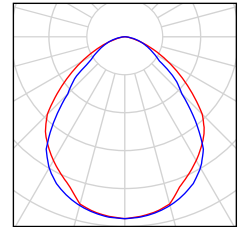


Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

Project 18 / Luminaire parts list

49 Pieces

Philips BPS460 W22L120 1xLED48/840 LIN-PC
Article No.:
Luminaire Luminous Flux: 4290 lm
Luminaire Wattage: 58.0 W
Luminaire classification according to CIE: 100
CIE flux code: 61 89 99 100 100
Fitting: 1 x LED48/840/- (Correction Factor 1.000).



Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Philips BPS460 W22L120 1xLED48/840 LIN-PC / Luminaire Data Sheet

Luminous emittance 1:



| Glare Evaluation According to UGR | | | | | | | | | | | |
|--|-----|---|------|------|------|------|--|------|------|------|------|
| ρ Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| ρ Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| ρ Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room Size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 19.7 | 20.8 | 20.0 | 21.1 | 21.3 | 18.1 | 19.2 | 18.4 | 19.5 | 19.7 |
| | 3H | 20.5 | 21.5 | 20.8 | 21.7 | 22.0 | 18.9 | 19.9 | 19.2 | 20.2 | 20.4 |
| | 4H | 20.6 | 21.6 | 21.0 | 21.9 | 22.1 | 19.3 | 20.2 | 19.6 | 20.5 | 20.8 |
| | 6H | 20.7 | 21.6 | 21.0 | 21.9 | 22.2 | 19.5 | 20.4 | 19.9 | 20.7 | 21.0 |
| | 8H | 20.7 | 21.5 | 21.0 | 21.8 | 22.1 | 19.6 | 20.4 | 19.9 | 20.7 | 21.0 |
| 4H | 12H | 20.7 | 21.5 | 21.0 | 21.8 | 22.1 | 19.6 | 20.4 | 19.9 | 20.7 | 21.0 |
| | 2H | 19.9 | 20.8 | 20.2 | 21.1 | 21.4 | 18.5 | 19.5 | 18.9 | 19.7 | 20.0 |
| | 3H | 20.8 | 21.6 | 21.1 | 21.9 | 22.2 | 19.5 | 20.3 | 19.9 | 20.6 | 20.9 |
| | 4H | 21.0 | 21.7 | 21.4 | 22.1 | 22.4 | 20.0 | 20.7 | 20.4 | 21.0 | 21.4 |
| | 6H | 21.1 | 21.7 | 21.5 | 22.1 | 22.5 | 20.3 | 20.9 | 20.7 | 21.2 | 21.6 |
| 8H | 8H | 21.1 | 21.7 | 21.6 | 22.1 | 22.5 | 20.3 | 20.9 | 20.8 | 21.3 | 21.7 |
| | 12H | 21.1 | 21.6 | 21.6 | 22.0 | 22.5 | 20.4 | 20.9 | 20.8 | 21.3 | 21.7 |
| | 4H | 21.1 | 21.6 | 21.5 | 22.0 | 22.4 | 20.1 | 20.6 | 20.5 | 21.0 | 21.4 |
| | 6H | 21.2 | 21.7 | 21.7 | 22.1 | 22.5 | 20.5 | 20.9 | 20.9 | 21.3 | 21.8 |
| | 8H | 21.3 | 21.6 | 21.7 | 22.1 | 22.6 | 20.6 | 20.9 | 21.0 | 21.4 | 21.9 |
| 12H | 12H | 21.2 | 21.6 | 21.7 | 22.0 | 22.5 | 20.6 | 20.9 | 21.1 | 21.4 | 21.9 |
| | 4H | 21.1 | 21.6 | 21.5 | 22.0 | 22.4 | 20.1 | 20.6 | 20.5 | 21.0 | 21.4 |
| | 6H | 21.2 | 21.6 | 21.7 | 22.1 | 22.5 | 20.4 | 20.8 | 20.9 | 21.3 | 21.7 |
| | 8H | 21.3 | 21.6 | 21.7 | 22.0 | 22.5 | 20.6 | 20.9 | 21.1 | 21.4 | 21.9 |
| Variation of the observer position for the luminaire distances S | | | | | | | | | | | |
| S = 1.0H | | +0.3 / -0.4 | | | | | +0.3 / -0.6 | | | | |
| S = 1.5H | | +0.7 / -1.0 | | | | | +0.8 / -1.0 | | | | |
| S = 2.0H | | +1.8 / -2.0 | | | | | +1.6 / -1.5 | | | | |
| Standard table | | BK03 | | | | | BK03 | | | | |
| Correction Summand | | 3.8 | | | | | 2.6 | | | | |
| Corrected Glare Indices referring to 4290lm Total Luminous Flux | | | | | | | | | | | |

Luminaire classification according to CIE: 100
 CIE flux code: 61 89 99 100 100

SmartForm – top-class lighting in a fresh, appealing design

We all feel and perform better in a pleasant, comfortable working environment. Designed for use in offices, shops and schools, the SmartForm family of suspended mounted luminaires combines best-in-class lighting with a clean, distinctive design.

These ultra-flat luminaires are available with a choice of MASTER TL5, TL5 ECO or LED light sources in rectangular and square versions with direct/indirect lighting combinations. They can also be used to form light-lines and structures.

With its wide choice of very efficient and comfortable micro-optics and covers, SmartForm suspended provides the ideal solution for every situation. Lighting controls can be added for further energy saving.

Operator Adeli Rahaman Riandito, ST
Telephone +628562887178
Fax
e-Mail adel_archi_tech@yahoo.com

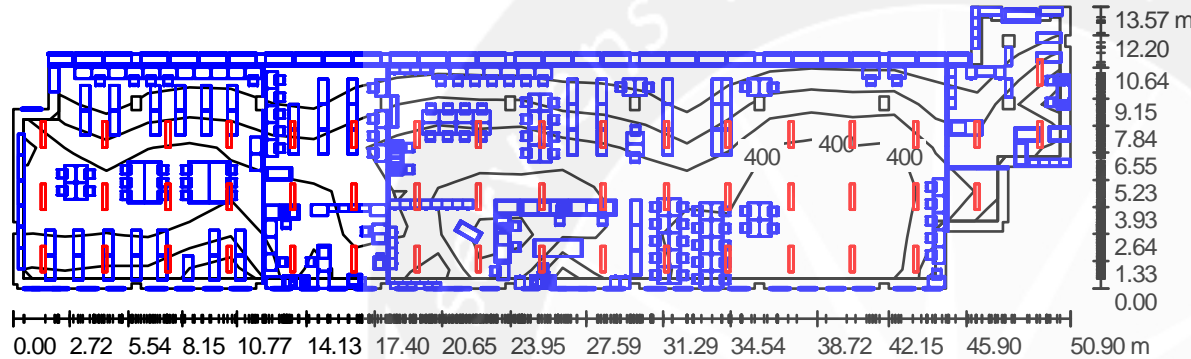
Room 1 / Light scene / Planning data



Scale 1 : 364

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Summary



Height of Room: 3.630 m, Mounting Height: 3.130 m, Light loss factor: 0.80

Values in Lux, Scale 1:364

| Surface | ρ [%] | E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | $u0$ |
|----------------|------------|---------------|----------------|----------------|-------|
| Workplane | / | 274 | 18 | 494 | 0.064 |
| Floor | 50 | 189 | 4.90 | 459 | 0.026 |
| Ceilings (302) | 88 | 74 | 11 | 172 | / |
| Walls (25) | 85 | 83 | 9.15 | 299 | / |

Workplane:

Height: 0.750 m
 Grid: 25 x 6 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: - , Ceiling / Working Plane: - .

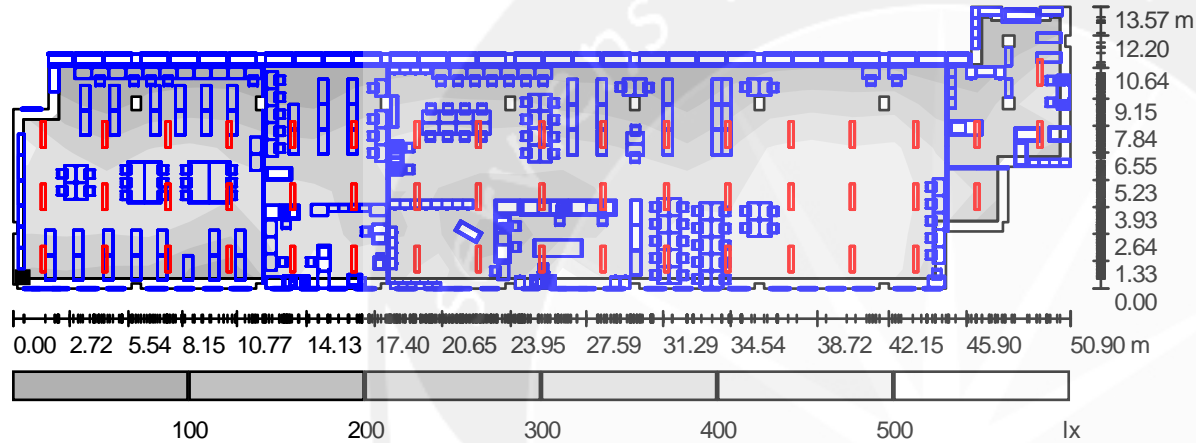
Luminaire Parts List

| No. | Pieces | Designation (Correction Factor) | Φ [lm] | P [W] |
|--------|--------|---|-------------|--------|
| 1 | 49 | Philips BPS460 W22L120 1xLED48/840 LIN-PC (1.000) | 4290 | 58.0 |
| Total: | | | 210210 | 2842.0 |

Specific connected load: $5.12 \text{ W/m}^2 = 1.87 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 555.36 m^2)

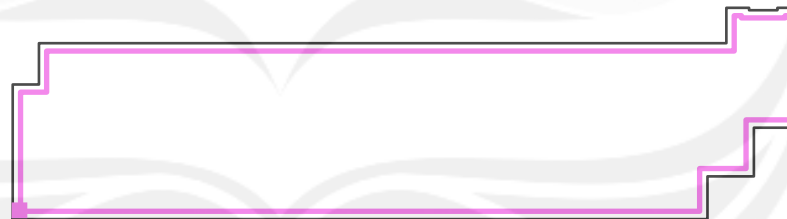
Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Greyscale (E)



Scale 1 : 364

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 274 | 18 | 494 | 0.064 | 0.036 |

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | / | 29 | <u>18</u> | 45 | 50 | 44 | 22 | 53 | 61 | 105 |
| 7.333 | 365 | 38 | 138 | 317 | 242 | 307 | 47 | 214 | 239 | 393 |
| 5.238 | 376 | 374 | 353 | 403 | 361 | 297 | 306 | 340 | 300 | 395 |
| 3.143 | 378 | 390 | 370 | 424 | 371 | 287 | / | 87 | 279 | 165 |
| 1.048 | 205 | 255 | 231 | 202 | 61 | 150 | 449 | 384 | 161 | 435 |
| m | 0.998 | 2.994 | 4.990 | 6.986 | 8.982 | 10.978 | 12.974 | 14.970 | 16.966 | 18.962 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
274

E_{min} [lx]
18

E_{max} [lx]
494

u0
0.064

E_{min} / E_{max}
0.036

Operator Adeli Rahaman Riandito, ST
 Telephone +628562887178
 Fax
 e-Mail adel_archi_tech@yahoo.com

Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections

Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | / | / | / | / | / | / | / |
| 9.428 | 86 | 88 | 66 | 61 | 66 | 42 | 47 | 89 | 135 | 149 |
| 7.333 | 353 | 359 | 354 | 234 | 321 | 94 | 128 | 344 | 435 | 395 |
| 5.238 | 364 | 374 | 411 | 365 | 364 | 335 | 316 | 386 | 464 | 423 |
| 3.143 | 144 | 136 | 53 | / | 354 | 466 | 418 | 412 | <u>494</u> | 452 |
| 1.048 | 390 | / | 457 | 404 | 269 | 443 | 410 | 409 | 490 | 439 |
| m | 20.958 | 22.954 | 24.950 | 26.946 | 28.942 | 30.938 | 32.934 | 34.930 | 36.926 | 38.922 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

E_{av} [lx]
274

E_{min} [lx]
18

E_{max} [lx]
494

u0
0.064

E_{min} / E_{max}
0.036

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Room 1 / Light scene / Workplane / Table (E)

- Current Selection
- Further Selections



Position of surface in room:
 Working plane with 0.500 m Boundary Zone
 Marked point:
 (0.495 m, 0.495 m, 0.750 m)



| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 11.523 | / | / | / | 19 | 20 |
| 9.428 | 100 | 139 | 91 | 84 | 371 |
| 7.333 | 398 | 435 | / | 351 | 417 |
| 5.238 | 416 | 452 | 276 | / | / |
| 3.143 | 440 | 469 | 301 | / | / |
| 1.048 | 435 | 465 | / | / | / |
| m | 40.918 | 42.914 | 44.910 | 46.906 | 48.902 |

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 25 x 6 Points

| | | | | |
|---------------|----------------|----------------|-------|---------------------|
| E_{av} [lx] | E_{min} [lx] | E_{max} [lx] | u0 | E_{min} / E_{max} |
| 274 | 18 | 494 | 0.064 | 0.036 |