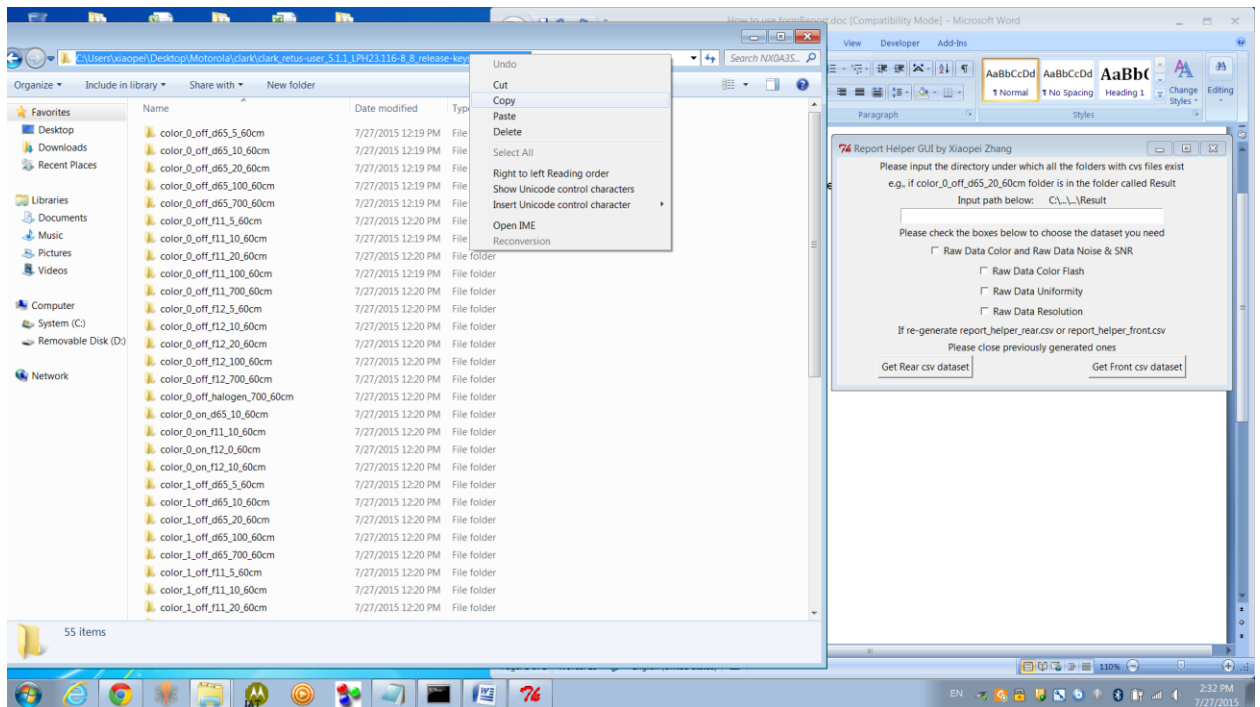


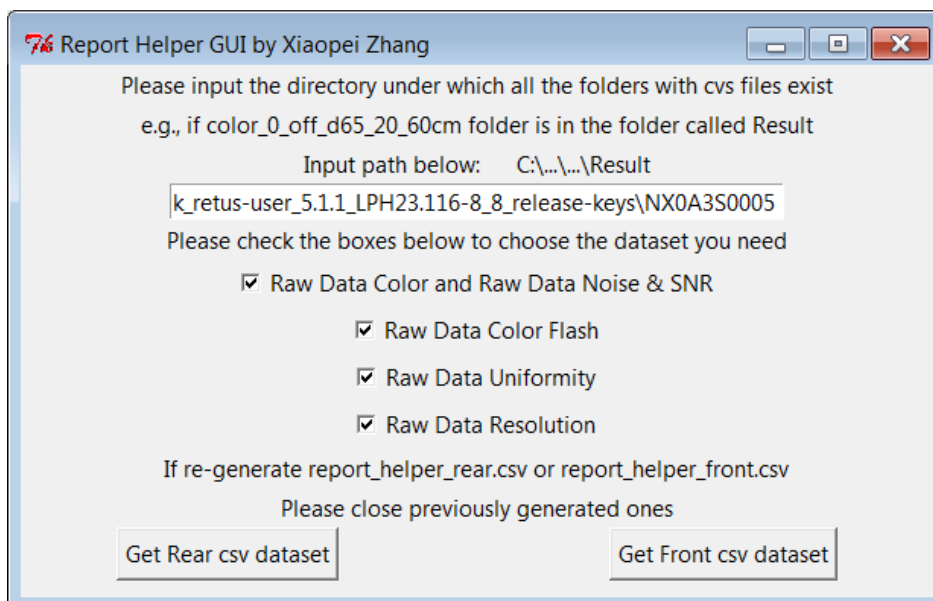
How to use formReport.exe by Xiaopei Zhang:

1. Copy and paste the directory where folders like color_0_off_d65_20_60cm exist



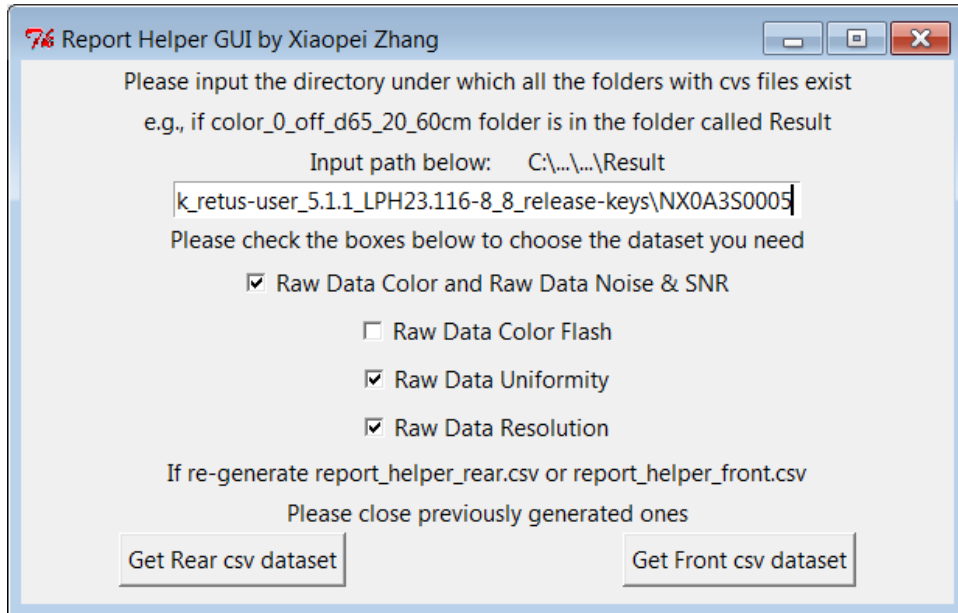
2. Choose datasets you need

For rear report, usually choose:



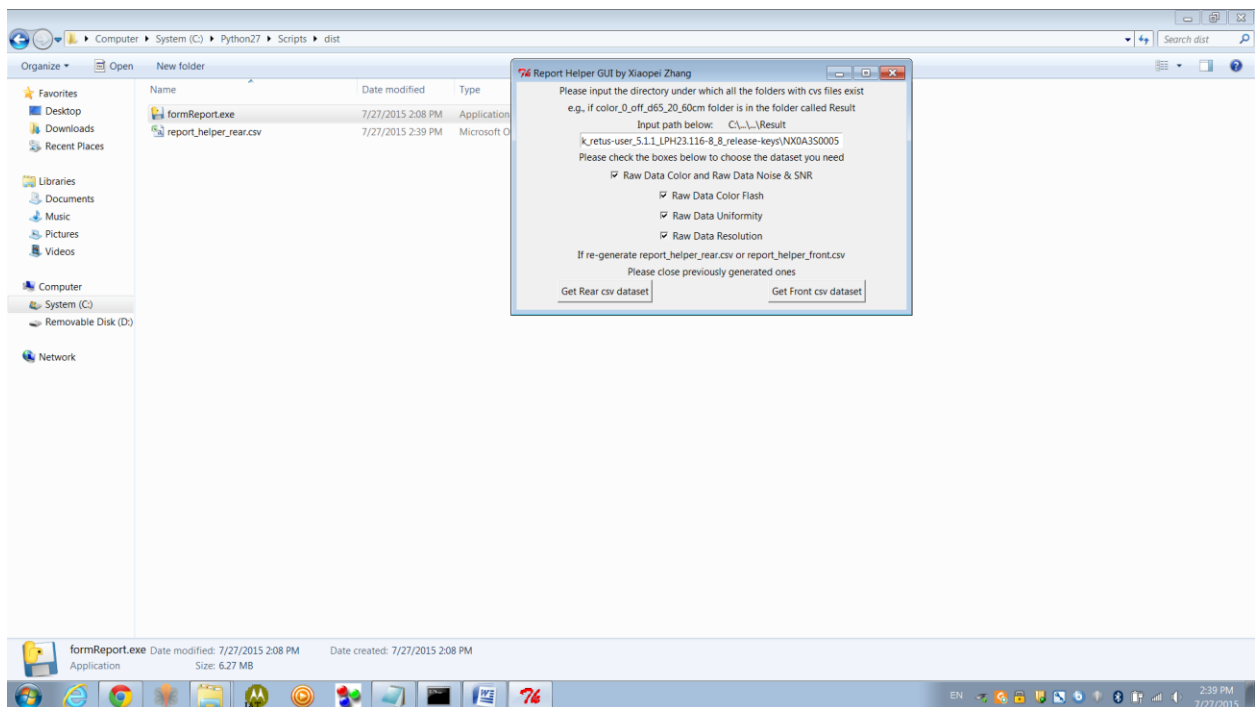
For front report, usually choose:

If front flash data are also needed, choose Raw Data Color Flash as well

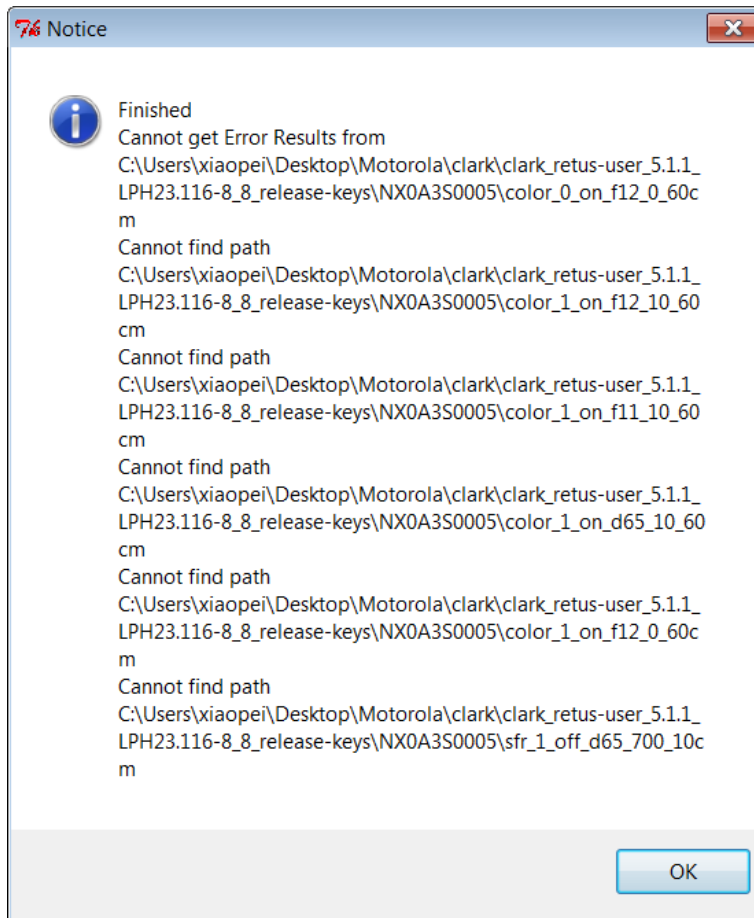


3. If you want rear data, click Get Rear csv dataset; If you want front data, click Get Front csv dataset

You will get 'report_helper_rear.csv' (or 'report_helper_front.csv') in the folder where your 'formReport.exe' file is



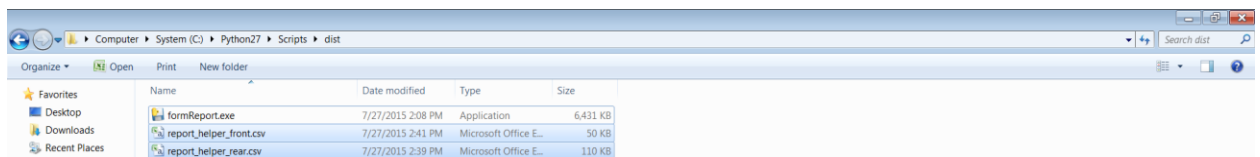
You will also get a message frame



DO NOT PANIC! It is normal. It tells you what folders do not exist or do not contain csv files. YOU STILL HAVE report_helper_rear.csv AND report_helper_front.csv

For example, the above message box tells us that the rear flash-on Olux pictures were not processed, the front flash-on folders do not exist and the front 10cm sfr does not exist.

4. Check whether the csv files exist



5. Open csv files, copy from it and paste each sheet in the excel template we use

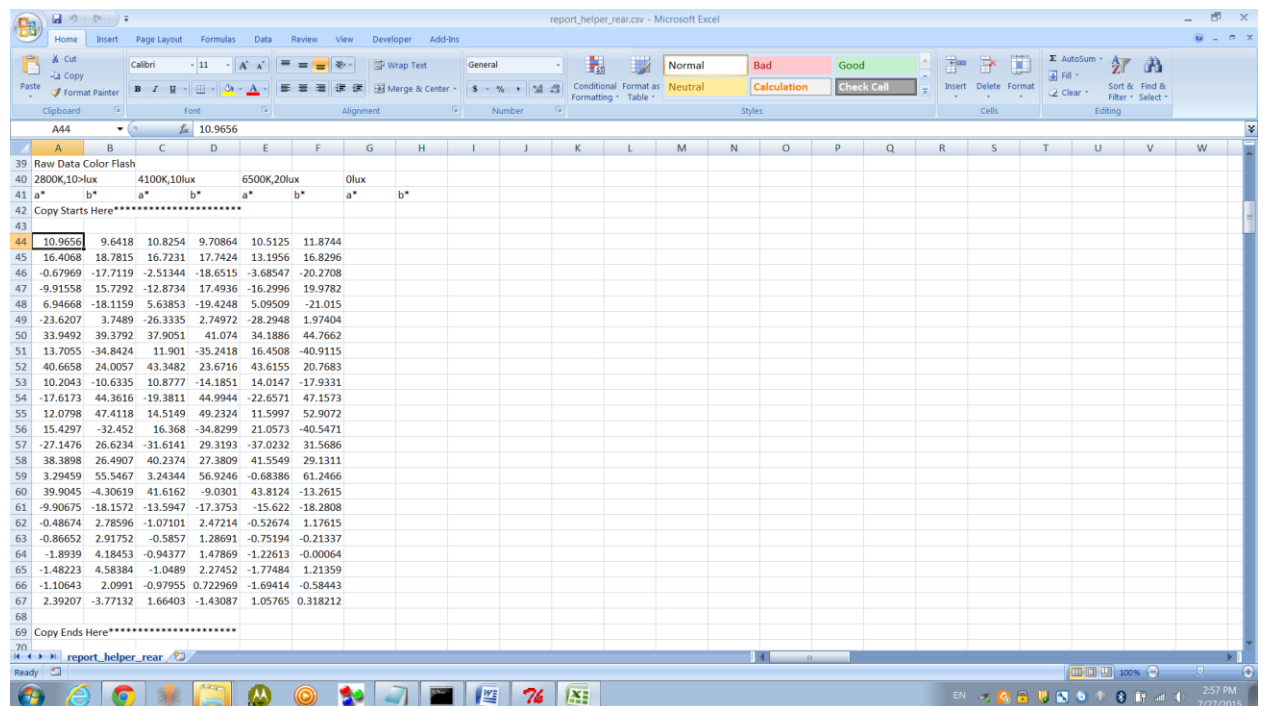
YOU HAVE TO USE Ctrl + Shift + Down + Right to choose data for the respective sheet in the excel and paste there. ONE SHEET, ONE COPY and ONE PASTE.

PAY ATTENTION to 'Copy Starts*****' and 'Copy Ends*****'

Start from the cell I picked below, then Ctrl + Shift + Down + Right



Start from the cell I picked below, then Ctrl + Shift + Down + Right



Raw Data Noise & SNR

Start from the cell I picked below, then Ctrl + Shift + Down*5 times + Right

report_helper_rear.csv - Microsoft Excel

	Ave	Stdev	SNR	Ave	Stdev	SNR	Ave	Stdev	SNR	Ave	Stdev	SNR	Ave	Stdev	SNR	Ave	Stdev	SNR
72	Raw Data Noise & SNR																	
73	The order below: d65_20lux, d65_100lux and d65_700lux																	
74	Blue																	
75	Green																	
76	Y																	
77	Cb																	
78	Cr																	
79	104.511	2.30565	33.1274	62.7082	2.23342	28.9671	46.4465	1.91786	27.6827	73.3536	2.06315	31.0178	112.817	0.566195	42.2491	150.224	0.783033	39.4328
80	196.545	1.57917	41.9007	153.135	1.18436	42.2319	132.28	1.36787	39.709	163.737	1.1054	43.4125	110.249	0.585698	48.9295	151.4	0.692841	47.4703
81	85.1716	2.92199	29.2923	1.83624	36.8276	160.015	2.09664	37.6527	118.516	2.01306	35.3984	151.418	0.576506	46.2594	104.217	1.00227	41.4558	
82	76.3981	2.52175	29.6276	105.409	1.72723	35.7105	45.8175	1.85987	27.831	89.941	1.76152	34.1614	103.099	0.437632	46.257	118.34	0.9853	39.2078
83	133.059	1.78861	37.4305	141.993	1.39043	40.1823	181.063	1.45079	41.9245	143.775	1.35246	40.5312	149.042	0.381042	51.5342	120.357	0.703574	46.2075
84	115.017	2.28804	34.026	200.46	2.09412	39.6205	181.015	2.41978	37.4788	172.696	1.99738	38.7364	132.692	0.609432	49.0471	86.8593	0.92575	45.3878
85	211.538	1.51983	42.8719	113.47	1.52691	37.4213	30.6336	1.9615	23.8722	133.349	1.31805	40.1011	70.0377	0.862657	43.783	183.769	0.672619	45.9444
86	59.9497	2.95002	26.1592	97.6217	1.7146	35.1077	171.6	1.90211	39.1056	94.7914	1.89379	33.9887	171.345	0.573412	44.366	103.15	1.10407	38.6755
87	196.29	1.82648	40.6257	71.0004	2.13946	30.4191	88.6007	1.94516	33.1696	110.468	1.83357	35.9888	115.664	0.604112	45.2424	189.214	0.793911	42.8693
88	69.6785	2.40223	29.2497	47.7972	1.66493	29.1601	99.3046	1.77189	34.9707	60.2116	1.68975	31.0371	150.062	0.48216	41.9298	134.753	0.950598	36.0304
89	160.23	1.53942	43.4445	186.406	1.13276	44.3264	66.2517	2.08113	30.058	164.882	1.10797	43.4529	72.3389	0.911131	45.1518	124.681	0.699683	47.4454
90	216.351	1.45524	43.4445	162.07	1.12028	43.2075	27.7338	2.18886	22.0559	162.985	1.07692	43.5993	151.6748	1.14355	43.0779	166.062	0.539699	49.6053
91	25.1191	2.5073	20.016	61.5879	1.89694	30.2289	145.117	1.9138	37.5964	60.2061	1.83183	30.3351	175.917	0.629325	39.6153	102.975	1.03379	35.3042
92	71.0895	3.65954	25.7676	155.57	1.90656	38.2335	73.2756	2.60904	28.9696	120.929	2.20631	34.7773	101.105	1.01705	41.5037	92.4503	1.44652	38.4441
93	171.183	1.8684	39.2398	33.9239	2.00571	24.5648	37.7845	1.94667	25.7604	75.4046	1.75144	32.68	106.775	0.520058	43.2269	196.316	0.822705	39.2431
94	227.666	1.25964	45.141	197.632	1.11349	44.9834	30.9616	2.22855	22.856	187.612	0.880386	46.5717	39.5981	1.17225	44.0848	156.567	0.65314	49.1651
95	187.948	1.79429	40.4029	85.6012	2.16998	31.9205	152.625	1.87452	38.2147	123.843	1.86685	36.4353	144.246	0.582349	46.5538	173.724	0.710464	44.8266
96	25.3083	3.53755	17.0912	152.242	1.94251	37.8835	177.253	2.31429	37.6835	117.14	2.17766	34.6143	161.919	0.647242	45.1528	62.4997	1.41021	38.3884
97	245.528	0.973305	48.037	245.875	0.951192	48.2489	242.832	1.57811	43.7434	245.425	0.939176	48.3434	126.537	0.651154	51.5247	128.074	1.02923	66.1482
98	209.235	1.10111	45.5761	120.081	0.961538	46.7884	211.448	1.28299	44.3306	209.984	0.926387	47.1079	128.826	0.565078	51.4016	127.466	0.338773	55.8456
99	165.988	1.29057	42.1859	70.035	0.913871	45.3931	169.523	1.25102	42.6393	168.767	0.95508	44.9449	128.427	0.496192	50.6327	126.018	0.441343	51.6149
100	119.493	1.64149	37.2421	120.238	1.36739	38.8829	120.218	1.49397	38.1125	120.013	1.262	39.5633	128.116	0.43756	48.7638	127.629	0.729014	44.3298
101	72.1055	3.05366	27.4629	74.9731	2.05592	31.238	76.1451	2.20183	30.7771	74.2493	2.04798	31.1873	129.07	0.547242	42.6502	126.471	1.3093	35.073
102	27.8534	2.69309	20.2926	29.3432	2.02197	23.2347	30.5912	2.18269	22.9321	29.04	1.98251	23.3156	128.875	0.615121	33.4807	127.154	1.06536	28.71

Raw Data Uniformity

Start from the cell I picked below, then Ctrl + Shift + Down*15 times + Right

report_helper_rear.csv - Microsoft Excel

Home

Insert

Page Layout

Formulas

Data

Review

View

Developer

Add-Ins

Cut

Copy

Paste

Font

Clipboard

Font

Alignment

Merge & Center

Number

Conditional Formatting

Format as Table

Normal

Bad

Good

Calculation

Check Cell

Insert

Delete

Format

AutoSum

Fill

Sort & Filter

Clear

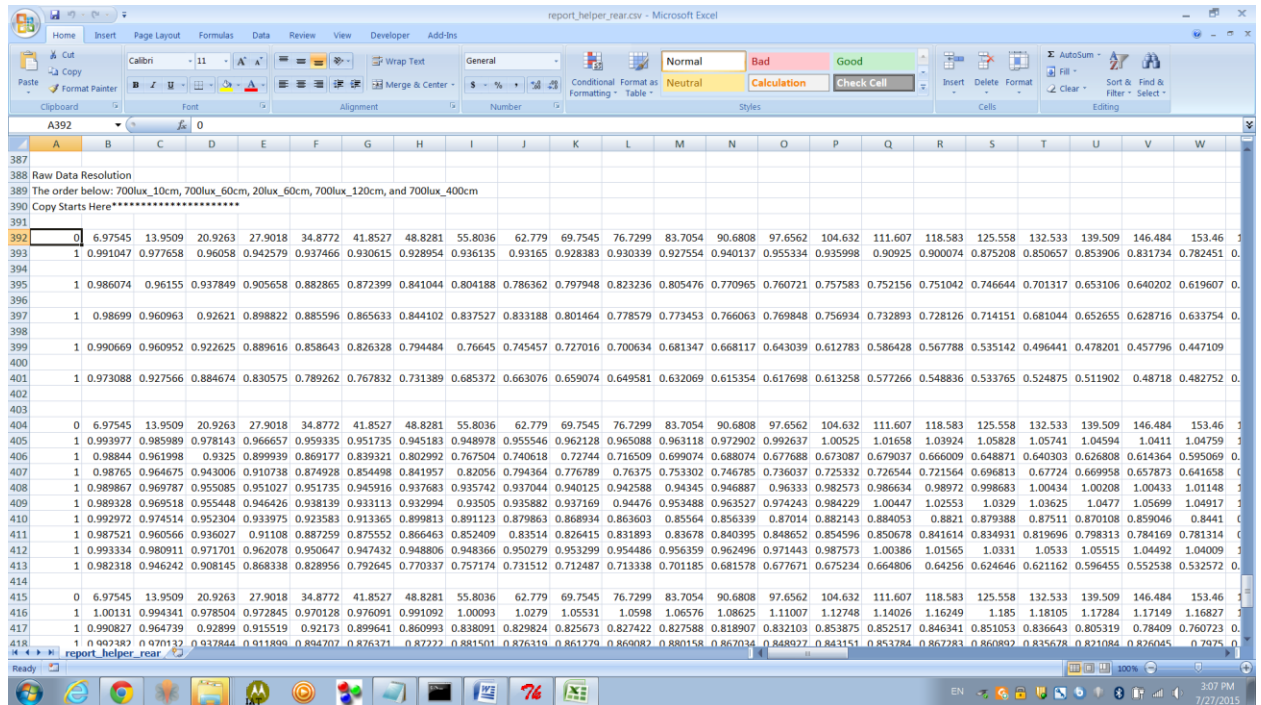
Find & Select

Editing

A169

Raw Data Resolution

Start from the cell I picked below, then Ctrl + Shift + Down*13 times + Right



report_helper_rear.csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11

General Normal Bad Good Neutral Calculation Check Cell

Clipboard Font Alignment Number Styles Cells Editing

A392

387 Raw Data Resolution

389 The order below: 700lux_10cm, 700lux_60cm, 20lux_60cm, 700lux_120cm, and 700lux_400cm

390 Copy Starts Here*****

391

392 0 6.97545 13.9509 20.9263 27.9018 34.8772 41.8527 48.8281 55.8036 62.779 69.7545 76.7299 83.7054 90.6808 97.6562 104.632 111.607 118.583 125.558 132.533 139.509 146.484 153.46

393 1 0.991047 0.977658 0.96058 0.942579 0.937466 0.930615 0.928954 0.936135 0.93165 0.928383 0.930339 0.927554 0.940137 0.955334 0.935998 0.90925 0.900074 0.875208 0.850657 0.853906 0.831734 0.782451 0.

394

395 1 0.986074 0.96155 0.937849 0.905658 0.882865 0.872399 0.841044 0.804188 0.786362 0.797948 0.823236 0.805476 0.770965 0.760721 0.757583 0.752156 0.751042 0.746644 0.701317 0.653106 0.640202 0.619607 0.

396

397 1 0.98699 0.960963 0.92621 0.898822 0.885596 0.865633 0.844102 0.837527 0.833188 0.801464 0.778579 0.773453 0.766063 0.769848 0.756934 0.732893 0.728126 0.714151 0.681044 0.652655 0.628716 0.633754 0.

398

399 1 0.990669 0.960952 0.922625 0.889616 0.858643 0.826328 0.794484 0.76645 0.745457 0.727016 0.700634 0.681347 0.668117 0.643039 0.612783 0.586428 0.567788 0.535142 0.496441 0.478201 0.457796 0.447109 0.

400

401 1 0.973088 0.927566 0.884674 0.830575 0.789262 0.767832 0.731389 0.685372 0.663076 0.659074 0.649581 0.632069 0.615354 0.617698 0.613258 0.577266 0.548836 0.533765 0.524875 0.511902 0.48718 0.482752 0.

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403

404 0 6.97545 13.9509 20.9263 27.9018 34.8772 41.8527 48.8281 55.8036 62.779 69.7545 76.7299 83.7054 90.6808 97.6562 104.632 111.607 118.583 125.558 132.533 139.509 146.484 153.46

405 1 0.993977 0.985989 0.978143 0.966657 0.959335 0.951735 0.945183 0.948978 0.955546 0.962128 0.965088 0.963118 0.972902 0.992637 1.00525 1.01658 1.03924 1.05828 1.05741 1.04594 1.04111 1.04759 0.

406 1 0.98844 0.961998 0.9325 0.899939 0.869177 0.839321 0.802992 0.767504 0.740618 0.72744 0.716509 0.699074 0.688074 0.677688 0.679037 0.666009 0.648871 0.640303 0.626808 0.614364 0.595069 0.

407 1 0.98765 0.964675 0.943006 0.910738 0.874928 0.854498 0.841957 0.82056 0.794364 0.776789 0.76375 0.753302 0.746785 0.736037 0.725332 0.726544 0.721564 0.696813 0.67724 0.669958 0.657873 0.641658 0.

408 1 0.989867 0.969787 0.955085 0.951027 0.951735 0.945916 0.937683 0.935742 0.937044 0.940125 0.942588 0.94345 0.946887 0.96333 0.982573 0.986634 0.98972 0.998683 1.00434 1.00208 1.00433 1.01148 0.

409 1 0.989328 0.969518 0.955448 0.946426 0.938139 0.933113 0.932994 0.93505 0.935882 0.937169 0.94476 0.953488 0.963527 0.974243 0.984229 1.00447 1.02553 1.0329 1.03625 1.0477 1.05699 1.04917 0.

410 1 0.992972 0.974514 0.953204 0.933975 0.923583 0.913365 0.899813 0.891123 0.879863 0.868934 0.863603 0.85564 0.846339 0.87014 0.882143 0.884053 0.8821 0.879388 0.87511 0.870108 0.859046 0.8441 0.

411 1 0.987521 0.960566 0.936027 0.91108 0.887259 0.875552 0.866463 0.852409 0.83514 0.826415 0.831893 0.83678 0.840395 0.848652 0.854596 0.850678 0.841614 0.834931 0.819696 0.798313 0.784169 0.781314 0.

412 1 0.993334 0.980911 0.971701 0.962078 0.950647 0.947432 0.948806 0.948366 0.950279 0.953299 0.954486 0.956359 0.962496 0.971443 0.987573 1.00386 1.01565 1.0331 1.0533 1.05515 1.04492 1.04009 0.

413 1 0.982318 0.946242 0.908145 0.868338 0.828956 0.792645 0.770337 0.757174 0.731512 0.712487 0.713338 0.701185 0.681578 0.677671 0.675234 0.664806 0.64256 0.624646 0.621162 0.596455 0.552538 0.532572 0.

414

415 0 6.97545 13.9509 20.9263 27.9018 34.8772 41.8527 48.8281 55.8036 62.779 69.7545 76.7299 83.7054 90.6808 97.6562 104.632 111.607 118.583 125.558 132.533 139.509 146.484 153.46

416 1 1.00131 0.994341 0.978504 0.972845 0.970128 0.976091 0.991092 1.00093 1.0279 1.05531 1.0598 1.06576 1.08625 1.11007 1.12748 1.14026 1.16249 1.185 1.18105 1.17284 1.17149 1.16827 0.

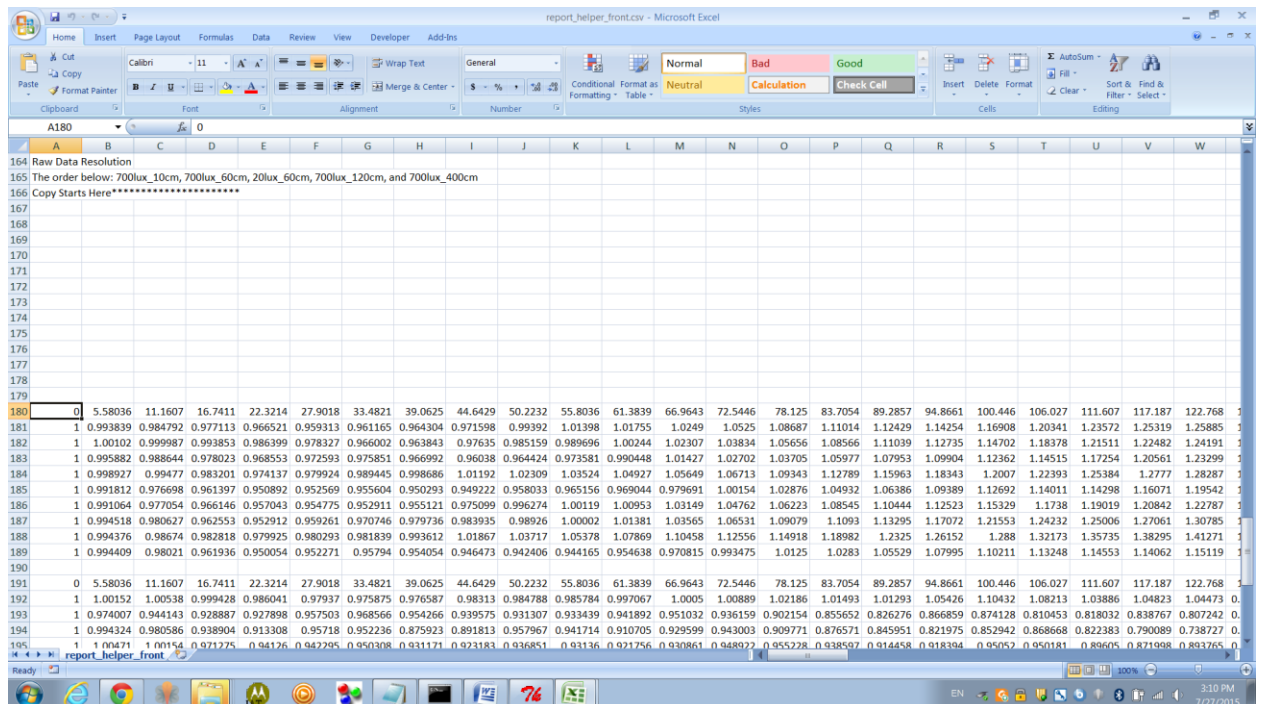
417 1 0.990827 0.964739 0.92899 0.915519 0.92173 0.899641 0.860993 0.838091 0.829824 0.825673 0.827422 0.827588 0.818907 0.832103 0.853875 0.852517 0.846341 0.851053 0.836643 0.805319 0.78409 0.760723 0.

418 1 0.992382 0.970132 0.937844 0.911809 0.894707 0.876371 0.87222 0.881501 0.876319 0.861279 0.860987 0.880158 0.867034 0.848927 0.843151 0.853784 0.867283 0.860982 0.835678 0.821084 0.826045 0.7975 0.

report_helper_rear

If there is no 10cm data

Start from the cell I picked below, then Ctrl + Shift + Down*7 times + Right



report_helper_front.csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11

General Normal Bad Good Neutral Calculation Check Cell

Clipboard Font Alignment Number Styles Cells Editing

A180

164 Raw Data Resolution

165 The order below: 700lux_10cm, 700lux_60cm, 20lux_60cm, 700lux_120cm, and 700lux_400cm

166 Copy Starts Here*****

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180 0 5.58036 11.1607 16.7411 22.3214 27.9018 33.4821 39.0625 44.6429 50.2232 55.8036 61.3839 66.9643 72.5446 78.125 83.7054 89.2857 94.8661 100.446 106.027 111.607 117.187 122.768 0.

181 1 0.993839 0.984792 0.977113 0.966521 0.959313 0.961165 0.964304 0.971598 0.99392 1.01398 1.01755 1.0249 1.0525 1.08687 1.11014 1.12429 1.14254 1.16908 1.20341 1.23572 1.25319 1.25885 0.

182 1 1.00102 0.999087 0.993853 0.986399 0.978327 0.966002 0.963843 0.97635 0.985159 0.989696 1.02044 1.02307 1.03834 1.05656 1.08566 1.11039 1.12735 1.14702 1.18378 1.21511 1.22482 1.24191 0.

183 1 0.995882 0.988644 0.978023 0.968553 0.972593 0.975851 0.966992 0.96038 0.964424 0.973581 0.990448 1.01427 1.02702 1.03705 1.05977 1.07953 1.09904 1.12362 1.14515 1.17254 1.20561 1.23299 0.

184 1 0.998927 0.99477 0.983201 0.974137 0.979924 0.989445 0.998686 1.01192 1.02309 1.03524 1.04927 1.05649 1.06713 1.09343 1.12789 1.15963 1.18343 1.2007 1.22393 1.25384 1.2777 1.28287 0.

185 1 0.991812 0.976698 0.961397 0.950892 0.952569 0.955604 0.950293 0.949222 0.958033 0.965156 0.969044 0.979691 1.00154 1.02876 1.04932 1.06386 1.09389 1.12692 1.14011 1.14298 1.16071 1.19542 0.

186 1 0.991064 0.977054 0.966146 0.957043 0.954775 0.952911 0.955121 0.975099 0.996274 1.00119 1.00953 1.03149 1.04762 1.06223 1.08545 1.10444 1.12523 1.15329 1.1738 1.19019 1.20842 1.22787 0.

187 1 0.994518 0.980627 0.962553 0.952912 0.959261 0.970746 0.979736 0.983935 0.98926 1.00002 1.01381 1.03565 1.06531 1.09079 1.1093 1.13295 1.17072 1.21553 1.24232 1.25006 1.27061 1.28075 0.

188 1 0.994376 0.98674 0.982818 0.979925 0.980293 0.981839 0.993612 1.01867 1.03717 1.05378 1.07869 1.10458 1.12556 1.14918 1.18982 1.2325 1.26152 1.288 1.32173 1.35735 1.38295 1.41271 0.

189 1 0.994409 0.98021 0.961936 0.950054 0.952271 0.95794 0.954054 0.946473 0.942406 0.944165 0.954638 0.970815 0.993475 1.0125 1.0283 1.05529 1.07995 1.10211 1.13248 1.14553 1.14062 1.15119 0.

190

191 0 5.58036 11.1607 16.7411 22.3214 27.9018 33.4821 39.0625 44.6429 50.2232 55.8036 61.3839 66.9643 72.5446 78.125 83.7054 89.2857 94.8661 100.446 106.027 111.607 117.187 122.768 0.

192 1 1.00152 1.00538 0.999428 0.986041 0.97937 0.975875 0.976587 0.98313 0.984788 0.985784 0.997067 1.0005 1.00889 1.02186 1.01493 1.01293 1.05426 1.10432 1.08213 1.03886 1.04823 1.04473 0.

193 1 0.974007 0.944143 0.928887 0.927898 0.957503 0.968566 0.954266 0.939575 0.931307 0.933439 0.941892 0.951032 0.936159 0.902154 0.855652 0.826276 0.866859 0.874128 0.810453 0.818032 0.838767 0.807242 0.

194 1 0.994324 0.980586 0.938904 0.913308 0.95718 0.952236 0.875923 0.891813 0.957967 0.941714 0.910705 0.929599 0.943003 0.909771 0.876571 0.845591 0.821975 0.852942 0.866868 0.822383 0.790089 0.738727 0.

195 1 1.00471 1.00154 0.971275 0.94126 0.942295 0.950308 0.931171 0.923183 0.936851 0.93136 0.921756 0.930861 0.948922 0.955228 0.938507 0.914458 0.918394 0.95052 0.950181 0.89605 0.871998 0.893765 0.

report_helper_front

6. Then you are done with the data part. Remember to fill Cover Page.
7. NOTICE

Message box will accumulate warning messages. If you would like to regenerate csv files and do not want to see former warning messages, please restart formReport.exe.

For Manual IQ, please use the folders in the 'manual_iq.zip' in my Google drive.

A trick for manual IQ using rail automation: you can connect lab pc with another phone that can be run by automation, and position the phone you actually care on the holder. As the automation is running the phone you does not care, you can manually follow the speed of the rail and the light boxes and manually take pictures. Since the pictures will be in the Camera folder in the order of, you do not have to rename. After IQ is done, paste pictures in their respective folders in my 'manual-iq' folder.

See the picture below for setting up. Secure the 'fake' phone down, and position the 'actual' phone right.

