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Certificate of Calibration

No	18296160121
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New Unit
 Returned Unit

Result as found: FAIL
 Result as left: PASS

Manufacturer Thorlabs GmbH
 Model Number S120C
 Serial Number 13111922
 Date of Calibration 23-Oct-2018

Calibration Standards

NO	MANUFACTURER	MODEL	SERIAL NO	CERTIFICATION	LAST CAL
1	Thorlabs	GM10HS	THO506	73333 17 PTB	7-Sep-2017
2	Hamamatsu	S2281	OK014	73340 17 PTB	27-Nov-2017
3	Thorlabs	S148C	17051916	NIST 685/290393-17	10-Aug-2017
4	Thorlabs	S180C	17052320	NIST 685/290394-17	6-Jul-2017

Thorlabs GmbH does hereby certify that the above mentioned equipment has been calibrated in accordance with our quality management system.
 Our Quality Management System is certified according to DIN EN ISO 9001.

The measurement equipment used for calibration is traceable to national standards of the 'EUROMET' members (NPL, PTB, BNM etc.), the US 'NIST' or other national metrological institutions.
 Measurements which cannot be traced to national standards can be traced to natural constants, other accepted standards or relational measurements.

Additional documentation concerning traceability of the measurement equipment is available and can be examined upon request.

The certificate of calibration may only be forwarded in complete form without any changes.

The recommended calibration interval is 12 months. The calibration period of this instrument / system begins on the date of receipt by the customer.

Calibrated by

Lothar Moerth
 Thorlabs GmbH

Date Received _____

Calibrated Due _____

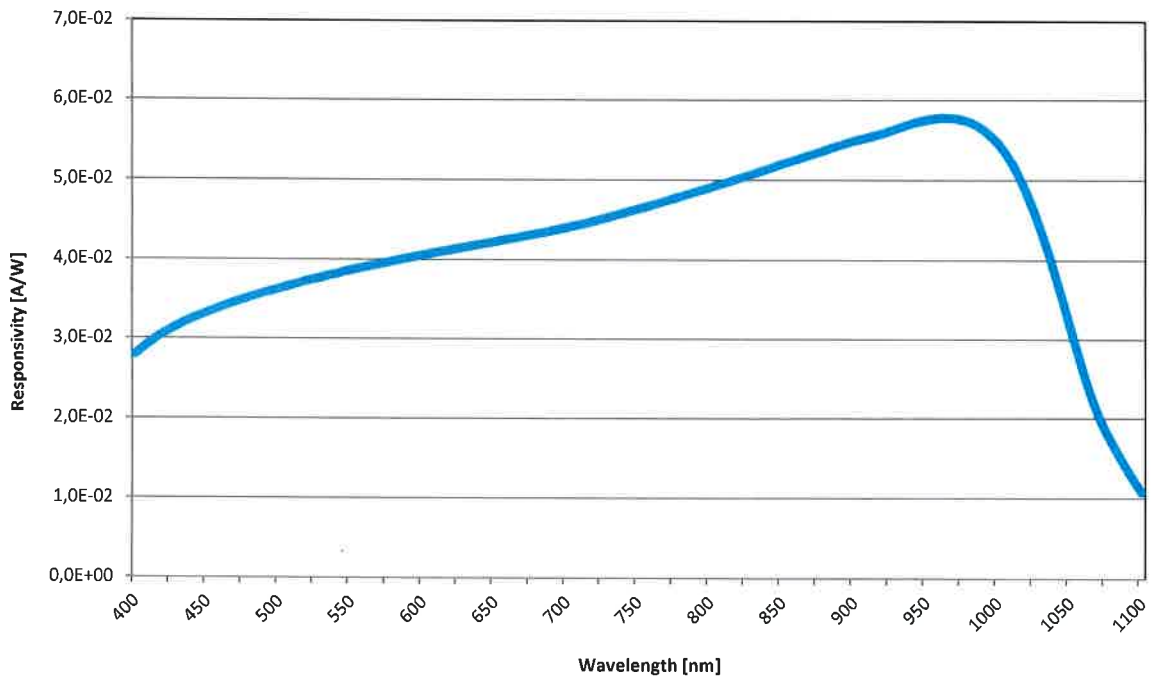
Test Report - as left

Model S120C
 Serial No 13111922
 Scan CAL1

Temperature 25,9°C
 Humidity 47%

Test Date 23-Oct-2018
 Tester Lothar Moerth
 Result PASS

λ [nm]	η [A/W]	λ [nm]	η [A/W]	λ [nm]	η [A/W]	λ [nm]	η [A/W]	λ [nm]	η [A/W]	λ [nm]	η [A/W]
400	2,80E-02	585	4,00E-02	770	4,74E-02	955	5,77E-02				
405	2,88E-02	590	4,02E-02	775	4,77E-02	960	5,79E-02				
410	2,95E-02	595	4,04E-02	780	4,80E-02	965	5,79E-02				
415	3,01E-02	600	4,06E-02	785	4,83E-02	970	5,78E-02				
420	3,06E-02	605	4,08E-02	790	4,85E-02	975	5,76E-02				
425	3,12E-02	610	4,09E-02	795	4,88E-02	980	5,73E-02				
430	3,17E-02	615	4,11E-02	800	4,91E-02	985	5,69E-02				
435	3,21E-02	620	4,13E-02	805	4,93E-02	990	5,63E-02				
440	3,25E-02	625	4,14E-02	810	4,96E-02	995	5,56E-02				
445	3,29E-02	630	4,16E-02	815	4,99E-02	1000	5,46E-02				
450	3,33E-02	635	4,18E-02	820	5,02E-02	1005	5,35E-02				
455	3,36E-02	640	4,19E-02	825	5,05E-02	1010	5,20E-02				
460	3,40E-02	645	4,21E-02	830	5,08E-02	1015	5,03E-02				
465	3,43E-02	650	4,23E-02	835	5,11E-02	1020	4,83E-02				
470	3,46E-02	655	4,24E-02	840	5,14E-02	1025	4,61E-02				
475	3,49E-02	660	4,26E-02	845	5,17E-02	1030	4,36E-02				
480	3,52E-02	665	4,28E-02	850	5,20E-02	1035	4,08E-02				
485	3,55E-02	670	4,30E-02	855	5,23E-02	1040	3,79E-02				
490	3,58E-02	675	4,31E-02	860	5,26E-02	1045	3,49E-02				
495	3,60E-02	680	4,33E-02	865	5,29E-02	1050	3,17E-02				
500	3,63E-02	685	4,35E-02	870	5,32E-02	1055	2,85E-02				
505	3,66E-02	690	4,37E-02	875	5,35E-02	1060	2,54E-02				
510	3,68E-02	695	4,39E-02	880	5,38E-02	1065	2,26E-02				
515	3,71E-02	700	4,40E-02	885	5,41E-02	1070	2,03E-02				
520	3,73E-02	705	4,42E-02	890	5,44E-02	1075	1,83E-02				
525	3,75E-02	710	4,45E-02	895	5,47E-02	1080	1,66E-02				
530	3,78E-02	715	4,47E-02	900	5,50E-02	1085	1,50E-02				
535	3,80E-02	720	4,49E-02	905	5,52E-02	1090	1,35E-02				
540	3,82E-02	725	4,51E-02	910	5,54E-02	1095	1,21E-02				
545	3,84E-02	730	4,54E-02	915	5,56E-02	1100	1,08E-02				
550	3,87E-02	735	4,56E-02	920	5,59E-02						
555	3,89E-02	740	4,59E-02	925	5,62E-02						
560	3,91E-02	745	4,61E-02	930	5,65E-02						
565	3,93E-02	750	4,64E-02	935	5,68E-02						
570	3,95E-02	755	4,66E-02	940	5,71E-02						
575	3,97E-02	760	4,69E-02	945	5,74E-02						
580	3,99E-02	765	4,72E-02	950	5,76E-02						



Test Report - as found

Model S120C
 Serial No 13111922
 Scan CAL1

Temperature 25,9°C
 Humidity 47%
 Calibrated 19.11.2013

Test Date 23-Oct-2018
 Tester Lothar Moerth
 Result FAIL

λ [nm]	η [A/W]	Delta to last Cal	Tol. +/-	Result
400	2,80E-02	2,3%	5,0%	PASS
405	2,88E-02	2,5%	5,0%	PASS
410	2,95E-02	2,7%	5,0%	PASS
415	3,01E-02	2,9%	5,0%	PASS
420	3,06E-02	3,0%	5,0%	PASS
425	3,12E-02	3,1%	5,0%	PASS
430	3,17E-02	3,1%	5,0%	PASS
435	3,21E-02	3,1%	5,0%	PASS
440	3,25E-02	3,1%	3,0%	FAIL
445	3,29E-02	3,1%	3,0%	FAIL
450	3,33E-02	3,1%	3,0%	FAIL
455	3,36E-02	3,0%	3,0%	FAIL
460	3,40E-02	3,0%	3,0%	PASS
465	3,43E-02	3,0%	3,0%	PASS
470	3,46E-02	3,0%	3,0%	PASS
475	3,49E-02	3,0%	3,0%	FAIL
480	3,52E-02	3,0%	3,0%	PASS
485	3,55E-02	3,0%	3,0%	PASS
490	3,58E-02	2,9%	3,0%	PASS
495	3,60E-02	2,9%	3,0%	PASS
500	3,63E-02	2,8%	3,0%	PASS
505	3,66E-02	2,8%	3,0%	PASS
510	3,68E-02	2,7%	3,0%	PASS
515	3,71E-02	2,7%	3,0%	PASS
520	3,73E-02	2,7%	3,0%	PASS
525	3,75E-02	2,6%	3,0%	PASS
530	3,78E-02	2,6%	3,0%	PASS
535	3,80E-02	2,5%	3,0%	PASS
540	3,82E-02	2,5%	3,0%	PASS
545	3,84E-02	2,5%	3,0%	PASS
550	3,87E-02	2,5%	3,0%	PASS
555	3,89E-02	2,4%	3,0%	PASS
560	3,91E-02	2,3%	3,0%	PASS
565	3,93E-02	2,3%	3,0%	PASS
570	3,95E-02	2,3%	3,0%	PASS
575	3,97E-02	2,2%	3,0%	PASS
580	3,99E-02	2,2%	3,0%	PASS
585	4,00E-02	2,2%	3,0%	PASS
590	4,02E-02	2,2%	3,0%	PASS
595	4,04E-02	2,1%	3,0%	PASS
600	4,06E-02	2,1%	3,0%	PASS
605	4,08E-02	2,0%	3,0%	PASS
610	4,09E-02	2,0%	3,0%	PASS
615	4,11E-02	1,9%	3,0%	PASS
620	4,13E-02	1,9%	3,0%	PASS
625	4,14E-02	1,8%	3,0%	PASS
630	4,16E-02	1,8%	3,0%	PASS
635	4,18E-02	1,7%	3,0%	PASS
640	4,19E-02	1,7%	3,0%	PASS
645	4,21E-02	1,6%	3,0%	PASS

λ [nm]	η [A/W]	Delta to last Cal	Tol. +/-	Result
650	4,23E-02	1,6%	3,0%	PASS
655	4,24E-02	1,6%	3,0%	PASS
660	4,26E-02	1,6%	3,0%	PASS
665	4,28E-02	1,5%	3,0%	PASS
670	4,30E-02	1,5%	3,0%	PASS
675	4,31E-02	1,4%	3,0%	PASS
680	4,33E-02	1,3%	3,0%	PASS
685	4,35E-02	1,3%	3,0%	PASS
690	4,37E-02	1,2%	3,0%	PASS
695	4,39E-02	1,2%	3,0%	PASS
700	4,40E-02	1,1%	3,0%	PASS
705	4,42E-02	1,1%	3,0%	PASS
710	4,45E-02	1,0%	3,0%	PASS
715	4,47E-02	1,0%	3,0%	PASS
720	4,49E-02	0,9%	3,0%	PASS
725	4,51E-02	0,9%	3,0%	PASS
730	4,54E-02	0,9%	3,0%	PASS
735	4,56E-02	0,9%	3,0%	PASS
740	4,59E-02	0,9%	3,0%	PASS
745	4,61E-02	0,8%	3,0%	PASS
750	4,64E-02	0,7%	3,0%	PASS
755	4,66E-02	0,7%	3,0%	PASS
760	4,69E-02	0,7%	3,0%	PASS
765	4,72E-02	0,6%	3,0%	PASS
770	4,74E-02	0,6%	3,0%	PASS
775	4,77E-02	0,6%	3,0%	PASS
780	4,80E-02	0,6%	3,0%	PASS
785	4,83E-02	0,5%	3,0%	PASS
790	4,85E-02	0,5%	3,0%	PASS
795	4,88E-02	0,4%	3,0%	PASS
800	4,91E-02	0,3%	3,0%	PASS
805	4,93E-02	0,3%	3,0%	PASS
810	4,96E-02	0,3%	3,0%	PASS
815	4,99E-02	0,3%	3,0%	PASS
820	5,02E-02	0,2%	3,0%	PASS
825	5,05E-02	0,2%	3,0%	PASS
830	5,08E-02	0,2%	3,0%	PASS
835	5,11E-02	0,2%	3,0%	PASS
840	5,14E-02	0,1%	3,0%	PASS
845	5,17E-02	0,1%	3,0%	PASS
850	5,20E-02	0,1%	3,0%	PASS
855	5,23E-02	0,1%	3,0%	PASS
860	5,26E-02	0,1%	3,0%	PASS
865	5,29E-02	0,1%	3,0%	PASS
870	5,32E-02	0,1%	3,0%	PASS
875	5,35E-02	0,0%	3,0%	PASS
880	5,38E-02	0,1%	3,0%	PASS
885	5,41E-02	0,1%	3,0%	PASS
890	5,44E-02	0,1%	3,0%	PASS
895	5,47E-02	0,2%	3,0%	PASS

Test Report - as found

Model S120C
Serial No 13111922
Scan CAL1

Temperature 25,9°C
Humidity 47%
Calibrated 19.11.2013

Test Date 23-Oct-2018
Tester Lothar Moerth
Result FAIL

λ [nm]	η [A/W]	Delta to last Cal	Tol. +/-	Result
900	5,50E-02	0,2%	3,0%	PASS
905	5,52E-02	0,1%	3,0%	PASS
910	5,54E-02	0,0%	3,0%	PASS
915	5,56E-02	0,0%	3,0%	PASS
920	5,59E-02	-0,1%	3,0%	PASS
925	5,62E-02	-0,1%	3,0%	PASS
930	5,65E-02	-0,1%	3,0%	PASS
935	5,68E-02	-0,1%	3,0%	PASS
940	5,71E-02	-0,1%	3,0%	PASS
945	5,74E-02	0,0%	3,0%	PASS
950	5,76E-02	0,0%	3,0%	PASS
955	5,77E-02	0,0%	3,0%	PASS
960	5,79E-02	0,0%	3,0%	PASS
965	5,79E-02	0,2%	3,0%	PASS
970	5,78E-02	0,3%	3,0%	PASS
975	5,76E-02	0,3%	3,0%	PASS
980	5,73E-02	0,2%	3,0%	PASS
985	5,69E-02	0,3%	7,0%	PASS
990	5,63E-02	0,2%	7,0%	PASS
995	5,56E-02	0,5%	7,0%	PASS
1000	5,46E-02	0,5%	7,0%	PASS
1005	5,35E-02	0,8%	7,0%	PASS
1010	5,20E-02	0,5%	7,0%	PASS
1015	5,03E-02	1,0%	7,0%	PASS
1020	4,83E-02	0,9%	7,0%	PASS
1025	4,61E-02	1,3%	7,0%	PASS
1030	4,36E-02	1,2%	7,0%	PASS
1035	4,08E-02	1,6%	7,0%	PASS
1040	3,79E-02	1,7%	7,0%	PASS
1045	3,49E-02	2,0%	7,0%	PASS
1050	3,17E-02	2,0%	7,0%	PASS
1055	2,85E-02	1,9%	7,0%	PASS
1060	2,54E-02	2,3%	7,0%	PASS
1065	2,26E-02	1,0%	7,0%	PASS
1070	2,03E-02	1,4%	7,0%	PASS
1075	1,83E-02	1,0%	7,0%	PASS
1080	1,66E-02	2,0%	7,0%	PASS
1085	1,50E-02	1,4%	7,0%	PASS
1090	1,35E-02	1,5%	7,0%	PASS
1095	1,21E-02	1,3%	7,0%	PASS
1100	1,08E-02	1,9%	7,0%	PASS

λ [nm]	η [A/W]	Delta to last Cal	Tol. +/-	Result
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Inspection Report

Model S120C
Serial No 13111922

Test Date 23-Oct-2018
Tester Lothar Moerth

Incoming Conditions:

Ingoing unit visual in perfect condition:

In need of repair:

Damaged during transportation:

Work Performed:

Cleaning:

Repair:

Modification:

Calibration and Verification:

Notes:

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