



427 B Main Street
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Neutral Density Filter Certification Report

Company Name: Your Company Filter Serial Number: Q66
Date Certified: 02/10/2003 Time: 14:30:43

Previous Certified % Opacity: 35.2 %Opac

Scanned Wavelength Range: 380 to 780 nm
Certification Performed by: John Manger
Spectrophotometer: HP8452A Serial Number: 2610A 02436

CERTIFIED LUMINOUS TRANSMITTANCE (LTr) VALUES FOR FILTER: SQ66

<u>(% LTr)</u>	<u>(% Op)</u>	<u>(OD)</u>
<u>% Transmittance</u>	<u>% Opacity</u>	<u>Optical Density</u>
64.89%	35.11%	0.1878

Difference from the last Certification: -0.09 %
% variance from the last Certification: 0.26 %
A recertification of filter Q66 is due on or before: February 10, 2004

FORMULAE

C	Sum of Human Eye Response Factors (C) = 100,000
LTr	Luminous Transmittance (LTr) = Sum of (Avg Tr*C)/100,000
% LTr	% LTr = LTr * 100
% Op	% Op = 100% - % LTr
OD	OD = Log (1/LTr)



Neutral Density Opacity Filter Data Report

2/10/2003
Filter #: Q66

Scanned Wavelength (nm)	RAW DATA				REPORTED SCAN VALUES							REVISED PS-1 ³ COMPLIANCE DETERMINATION	
	Blank #1	(Trx) Scan #1 ¹	(Trz) Scan #2 ²	Blank #2	Avg. Blank	Corrected (Trx)	Corrected (Trz)	Average Corrected Trans.	Avg. Corr. Optical Density	Human Eye Response Factor	Luminous Transmittance (LTr)	Difference [Trx-Trz]	Pass/Fail ⁴
380	0.9990	0.6259	0.6253	0.9994	0.9992	0.6265	0.6258	0.6262	0.2033	0	0.0000	0.07%	Pass
390	0.9987	0.6278	0.6271	0.9991	0.9989	0.6285	0.6278	0.6282	0.2019	0	0.0000	0.07%	Pass
400	0.9984	0.6291	0.6284	0.9987	0.9985	0.6301	0.6294	0.6298	0.2008	2	1.2595	0.07%	Pass
410	0.9987	0.6311	0.6304	0.9989	0.9988	0.6319	0.6311	0.6315	0.1996	9	5.6835	0.08%	Pass
420	0.9990	0.6328	0.6319	0.9992	0.9991	0.6333	0.6325	0.6329	0.1987	37	23.4173	0.08%	Pass
430	0.9992	0.6343	0.6334	0.9993	0.9992	0.6348	0.6339	0.6344	0.1977	122	77.3907	0.09%	Pass
440	0.9986	0.6345	0.6336	0.9988	0.9987	0.6353	0.6345	0.6349	0.1973	262	166.3438	0.08%	Pass
450	0.9986	0.6357	0.6348	0.9989	0.9988	0.6364	0.6356	0.6360	0.1965	443	281.7480	0.08%	Pass
460	0.9987	0.6365	0.6356	0.9989	0.9988	0.6373	0.6364	0.6369	0.1960	694	441.9739	0.09%	Pass
470	0.9982	0.6368	0.6359	0.9985	0.9983	0.6379	0.6370	0.6375	0.1956	1058	674.4221	0.09%	Pass
480	0.9990	0.6390	0.6381	0.9992	0.9991	0.6396	0.6386	0.6391	0.1944	1618	1,034.0638	0.10%	Pass
490	0.9985	0.6394	0.6384	0.9987	0.9986	0.6403	0.6393	0.6398	0.1940	2358	1,508.6484	0.10%	Pass
500	0.9984	0.6403	0.6393	0.9987	0.9985	0.6412	0.6402	0.6407	0.1933	3401	2,179.0207	0.10%	Pass
510	0.9983	0.6413	0.6403	0.9985	0.9984	0.6423	0.6414	0.6419	0.1926	4833	3,102.0611	0.09%	Pass
520	0.9978	0.6416	0.6406	0.9981	0.9980	0.6429	0.6419	0.6424	0.1922	6462	4,151.1888	0.10%	Pass
530	0.9981	0.6433	0.6423	0.9984	0.9982	0.6444	0.6435	0.6440	0.1911	7934	5,109.0993	0.09%	Pass
540	0.9981	0.6456	0.6446	0.9984	0.9983	0.6468	0.6457	0.6463	0.1896	9149	5,912.5413	0.11%	Pass
550	0.9980	0.6471	0.6461	0.9982	0.9981	0.6484	0.6473	0.6479	0.1885	9832	6,369.6612	0.11%	Pass
560	0.9996	0.6509	0.6499	0.9997	0.9996	0.6512	0.6501	0.6507	0.1867	9841	6,403.0467	0.11%	Pass
570	1.0008	0.6528	0.6516	1.0008	1.0008	0.6522	0.6510	0.6516	0.1860	9147	5,960.1852	0.12%	Pass
580	0.9999	0.6522	0.6509	0.9999	0.9999	0.6523	0.6509	0.6516	0.1860	7992	5,207.5872	0.14%	Pass
590	0.9991	0.6527	0.6514	0.9991	0.9991	0.6534	0.6520	0.6527	0.1853	6627	4,325.4429	0.14%	Pass
600	0.9988	0.6547	0.6536	0.9989	0.9989	0.6555	0.6543	0.6549	0.1838	5316	3,481.4484	0.12%	Pass
610	0.9992	0.6574	0.6562	0.9993	0.9992	0.6579	0.6567	0.6573	0.1822	4176	2,744.8848	0.12%	Pass
620	0.9985	0.6577	0.6567	0.9987	0.9986	0.6587	0.6576	0.6582	0.1817	3153	2,075.1470	0.11%	Pass
630	0.9980	0.6579	0.6568	0.9983	0.9981	0.6592	0.6580	0.6586	0.1814	2190	1,442.3340	0.12%	Pass
640	0.9986	0.6594	0.6583	0.9989	0.9987	0.6602	0.6591	0.6597	0.1807	1443	951.8750	0.11%	Pass
650	0.9972	0.6592	0.6581	0.9976	0.9974	0.6608	0.6598	0.6603	0.1803	886	585.0258	0.10%	Pass
660	0.9962	0.6550	0.6535	0.9962	0.9962	0.6575	0.6560	0.6568	0.1826	504	331.0020	0.15%	Pass
670	0.9980	0.6624	0.6613	0.9981	0.9980	0.6637	0.6626	0.6632	0.1784	259	171.7559	0.11%	Pass
680	0.9969	0.6630	0.6620	0.9973	0.9971	0.6649	0.6639	0.6644	0.1776	134	89.0296	0.10%	Pass
690	0.9987	0.6659	0.6646	0.9989	0.9988	0.6667	0.6654	0.6661	0.1765	62	41.2951	0.13%	Pass
700	0.9973	0.6650	0.6639	0.9978	0.9975	0.6666	0.6656	0.6661	0.1765	29	19.3169	0.10%	Pass
710	0.9997	0.6683	0.6672	0.9999	0.9998	0.6685	0.6673	0.6679	0.1753	14	9.3506	0.12%	Pass
720	0.9990	0.6687	0.6675	0.9993	0.9991	0.6693	0.6681	0.6687	0.1748	6	4.0122	0.12%	Pass
730	0.9996	0.6709	0.6697	0.9998	0.9997	0.6710	0.6699	0.6705	0.1736	3	2.0114	0.11%	Pass
740	0.9974	0.6697	0.6685	0.9976	0.9975	0.6713	0.6702	0.6708	0.1734	2	1.3415	0.11%	Pass
750	1.0012	0.6752	0.6740	1.0014	1.0013	0.6743	0.6731	0.6737	0.1715	1	0.6737	0.12%	Pass
760	0.9995	0.6743	0.6731	0.9996	0.9995	0.6747	0.6734	0.6741	0.1713	1	0.6741	0.13%	Pass
770	0.9986	0.6734	0.6723	0.9989	0.9988	0.6742	0.6731	0.6737	0.1716	0	0.0000	0.11%	Pass
780	0.9996	0.6754	0.6744	1.0001	0.9999	0.6755	0.6745	0.6750	0.1707	0	0.0000	0.10%	Pass

Sum of Avg Tr*C = 64,885.96

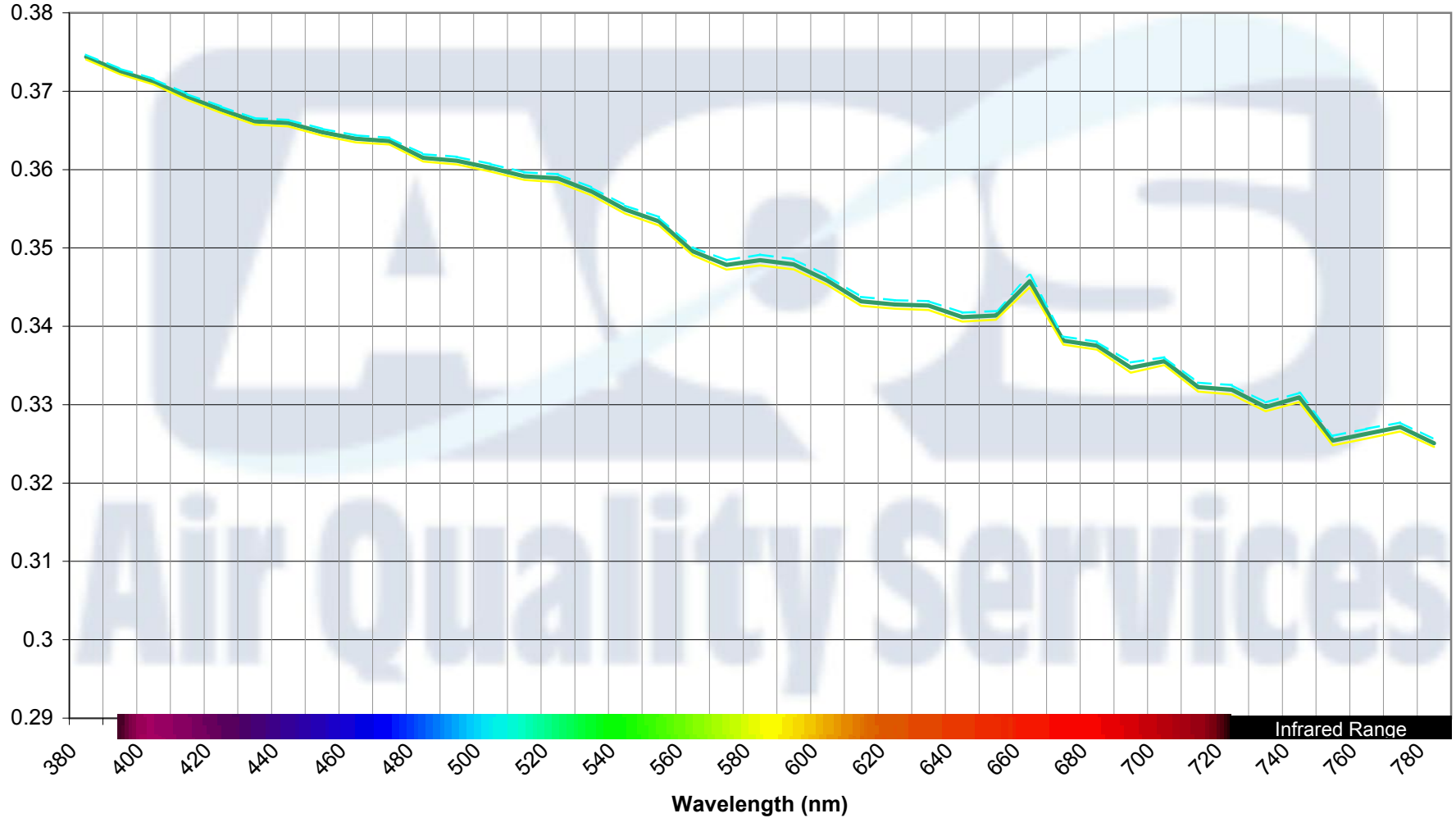
Footnotes:

- 1 Placed in normal usage position as determined by observation of the filter configuration.
- 2 Rotated 90 degrees in the plane of the filter from the scan #1 position.
- 3 Applicable to filters used on COMS installed or refurbished on or after February 6, 2001.
- 4 Excerpt from Performance Specification 1 (PS-1) - 40 CFR Part 60, Appendix B, Section 7.1 (2)(ii): "If any pair of the tested filter transmittance values (for the same filter and wavelength) differ by more than ±0.25 percent, rescan the tested filter. If the filter fails to achieve this tolerance, do not use the filter in the calibration tests of the COMS."

Opacity Filter Response Curve

Company Name: Your Company Filter Serial Number: Q66
Date Certified: 02/10/2003 Time: 14:30:43

— Opacity (2 Scans Avg.) — Scan 1 - - - Scan 2



QA Analysis

Company Name: Your Company

Filter Serial Number: Q66

Date Certified: 02/10/2003

Time: 14:30:43

