

A Vast Array of Choices

There is a wide selection of gratings to choose from depending on optical requirements. There are three different types of gratings available; classically ruled, holographic, and blazed holographic. There is also a flat mirror that may be ordered for the dual grating turret option.

Ruled gratings

Select for applications where high throughput or low groove density is required, or when working in the infrared. Typically, they have high throughput at the cost of higher stray light.

Holographic gratings

Available in higher groove densities for finer resolution requirements and are excellent choices for experiments with laser excitation such as Raman or laser induced photoluminescence. They provide the lowest possible stray light possible, sometimes at the cost of lower throughput.

Blazed holographic gratings

These gratings have the same advantages as holographic gratings with better throughput.

Groove Density

Ruled gratings and blazed holographic gratings have two fundamental parameters to choose from; the groove density, expressed in grooves (or lines) per millimeter, and the blaze angle which nominally refers to the peak reflectance wavelength expressed in nanometers.

The groove density of the selected grating affects the resolution and mechanical scanning range of the monochromator. Below is a reference chart showing the affect groove density has on the mechanical scanning range of the monochromator as well as the reciprocal linear dispersion of the slits.

Groove Density (gr/mm)	Wavelength Conversion Factor	Typical Linear Dispersion (nm/mm)	Typical Array Resolution (nm)*	Typical Spectral Coverage (nm)*	Typical Spectral Range (nm)*
2400	1/2	2.63	≤ .15 nm	70	0-500
1800	2/3	3.50	≤ .2nm	93	0-667
1200	1	5.25	≤ .3 nm	140	0-1000
900	4/3	7.00	≤ .4 nm	186	0-1333
600	2	10.5	≤ .6 nm	280	0-2000
300	4	21.0	≤ 1.2 nm	560	0-4000
150	8	42.0	≤ 2.4 nm	1120	0-8000

*Values measured for MicroHR gratings using a 1024 element array with a 26 μm wide pixels and 12 μm entrance slit.

Below is a comprehensive list of available gratings for the HORIBA spectrometers. Other gratings are also available upon request.

Ruled Gratings

Click on Groove Density to view Spectral Efficiency Curve

Groove Density gr/mm	Blaze Wavelength	Recommended Spectral Range Wavelength	Blaze Angle	Part Number	Available Products
1800	330 nm	150-600 nm	17°27'	510 01	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
1800	500 nm	250-850 nm	26°45'	510-02	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
1800	630 nm	350-850 nm	34°32'	510 03	MicroHR, TRIAX 180/190 Gemini 180, iHR 320
1200	250 nm	150-500 nm	8°38'	510-04	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
1200	300 nm	200-700 nm	11°25'	510-05	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	400 nm	200-800 nm	13°53'	510-06	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	500 nm	250-950 nm	17°27'	510-07	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	630 nm	350-1200 nm	22°12'	510 08	MicroHR, TRIAX 180/190 Gemini 180
1200	750 nm	400-1200 nm	26°45'	510-09	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	1000 nm	500-1200 nm	36°52'	510-10	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
900	350 nm	200-700 nm	9°00'	510 91	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
900	550 nm	250-1100 nm	14°30'	510-93	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
900	1500 nm	600-1700 nm	42°27'	510-97	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
600	300 nm	200-600 nm	5°10'	510-11	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
600	400 nm	250-800 nm	6°54'	510-12	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M

Groove Density gr/mm	Blaze Wavelength	Recommended Spectral Range Wavelength	Blaze Angle	Part Number	Available Products
600	500 nm	250-1000 nm	8°38'	510-13	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
600	750 nm	400-1500 nm	13°00'	510-14	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
600	1000 nm	500-1700 nm	17°27'	510-15	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
600	1500 nm	750-2400 nm	26°45'	510-16	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
600	2 μm	1000-2400 nm	36°52'	510-17	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
300	250 nm	150-500 nm	2°09'	510-50	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
300	500 nm	300-950 nm	4°18'	510-18	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
300	600 nm	350-1300 nm	5°10'	510-19	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
300	1000 nm	700-2000 nm	8°38'	510-20	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
300	2 μm	1100-4500 nm	17°27'	510-21	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
300	3 μm	1700-5000 nm	26°45'	510-22	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
300	4 μm	2000-5000 nm	36°52'	510-23	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	500 nm	250-950 nm	2°09'	510-49	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	1200 nm	800-2300 nm	5°10'	510-24	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	2 μm	1200-4000 nm	8°38'	510-25	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	4 μm	2.2-9 μm	17°27'	510-26	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
150	5 μm	3.5-10 μm	22°01'	510-27	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M

Groove Density gr/mm	Blaze Wavelength	Recommended Spectral Range Wavelength	Blaze Angle	Part Number	Available Products
150	6 μm	4-10 μm	26°45'	510 28	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
150	8 μm	5-10 μm	36°52'	510 29	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
120	2.5 μm	1.7-4.5 μm	8°39'	510-30	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
120	5 μm	3 - 10 μm	17°27'	510-31	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
120	7.5 μm	4.5-12 μm	26°45'	510-32	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
100	450 nm	250-950 nm	1°17'	510-48	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
100	3 μm	1.7-6 μm	8°38'	510 33	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
100	6 μm	3-13 μm	17°27'	510 34	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
100	9 μm	5-14.5 μm	26°45'	510 35	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
75	4 μm	2-8 μm	8°38'	510-36	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
75	8 μm	5.5-17 μm	17°27'	510-37	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
75	12 μm	8-19 μm	26°45'	510-38	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
60	10 μm	7.5-13 μm	17°27'	510-39	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
60	15 μm	9-24 μm	26°45'	510-40	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
50	12 μm	8-22 μm	17°27'	510-42	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
50	18 μm	11-28 μm	26°45'	510-43	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
50	24 μm	15-30 μm	36°52'	510-44	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M

Groove Density gr/mm	Blaze Wavelength	Recommended Spectral Range Wavelength	Blaze Angle	Part Number	Available Products
40	22.5 μm	14-30 μm	26°45'	510 45	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
30	30 μm	N/A	26°45'	510 46	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550
20	45 μm	N/A	26°45'	510 47	MicroHR, TRIAX 180/190 Gemini 180, iHR 320

Holographic Gratings

Click on Groove Density to view Spectral Efficiency Curve

Groove Density gr/mm	Spectral Range	Part Number	Available Products
3600	150-450 nm	520-07	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000
3000	250-550 nm	520-09	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2400	300-650 nm	520-12	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
2400	170-500 nm	520-13	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
2400	100-300 nm	520-14	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2000	450-750 nm	520-15	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2000	190-700 nm	520-16	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
2000	150-450 nm	520-17	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2000	100-300 nm	520-18	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1800	450-850 nm	520-19	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M

Groove Density gr/mm	Spectral Range	Part Number	Available Products
1800	190-700 nm	520-20	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
1800	150-450 nm	520-21	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1800	100-300 nm	520 22	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	400-1300 nm	520-24	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
1200	190-700 nm	520-25	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
1200	150-450 nm	520-26	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
600	400-1300 nm	520-29	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
600	150-450 nm	520-30	TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	250-800 nm	520-32	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
150	400-1200 nm	520-33	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M

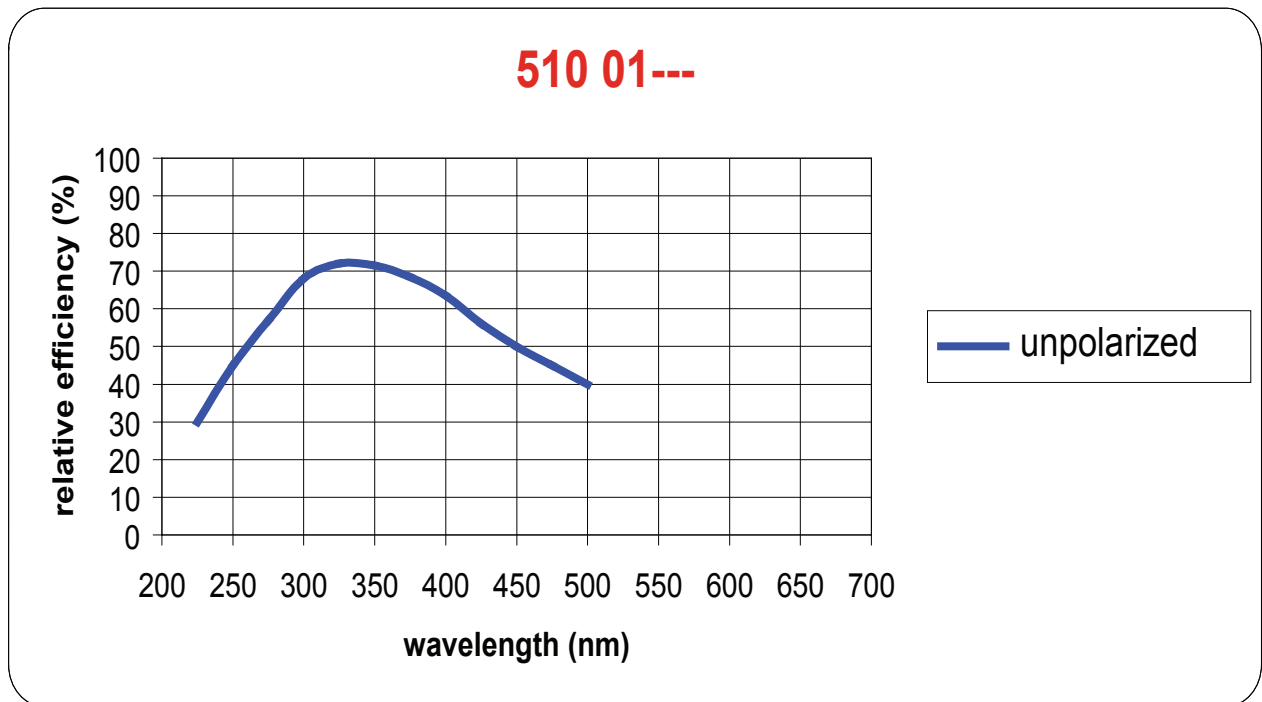
Blazed Holographic Gratings

Click on Groove Density to view Spectral Efficiency Curve

Groove Density gr/mm	Spectral Range	Blaze Angle	Part Number	Available Products
2400	190-700 nm	250	530-13	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2400	240-750 nm	330	530-11	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M, 1250M
2400	300-800 nm	400	530-15	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1800	450-900 nm	500	530 19	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1800	190-700 nm	250	530-20	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1800	250-900 nm	400	530-18	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	190-450 nm	250	530-25	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	240-1200 nm	330	530-22	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	360-1250 nm	500	530-24	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	400-1300 nm	630	530-27	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	500-1500 nm	750	530-28	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
1200	600-1600 nm	900	530-50	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
950	700-1700 nm	900	530-60	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
900	700-1700 nm	850	530-66	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
600	360-1250 nm	500	530-29	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M
600	700-1750 nm	1000	530 34	MicroHR, TRIAX 180/190 Gemini 180, iHR 320/550, FHR 640/1000, 1000M

Spectral Efficiency Curve

Reference 510 01	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	
Blaze Wavelength (nm)	330
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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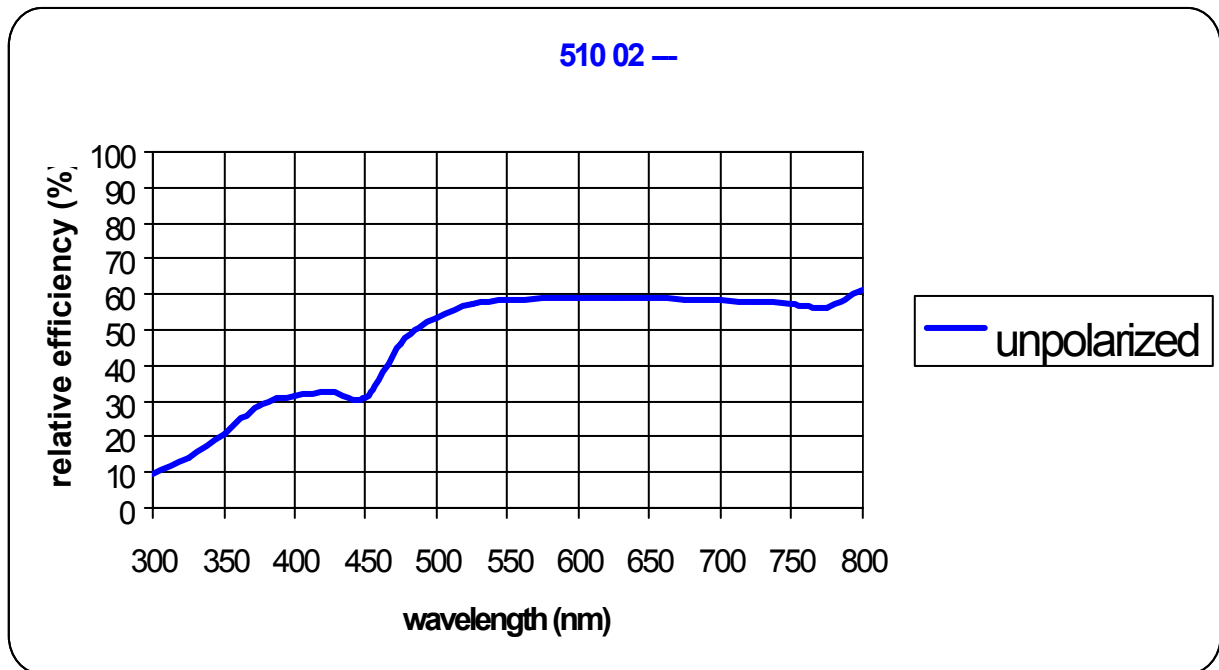
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Spectral Efficiency Curve

Reference 510 02	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



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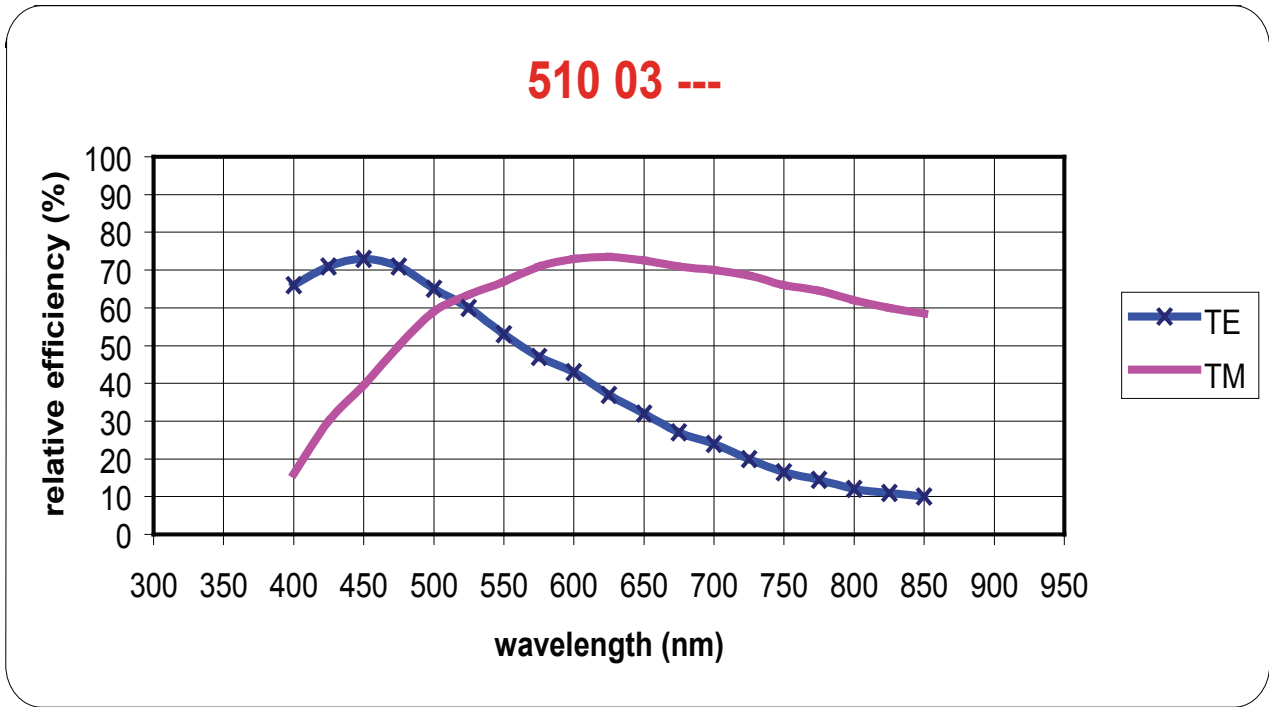
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Spectral Efficiency Curve

Reference 510 03	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	
Blaze Wavelength (nm)	630
Blaze Angle (deg)	34°32'
Configuration	Quasi-littrow

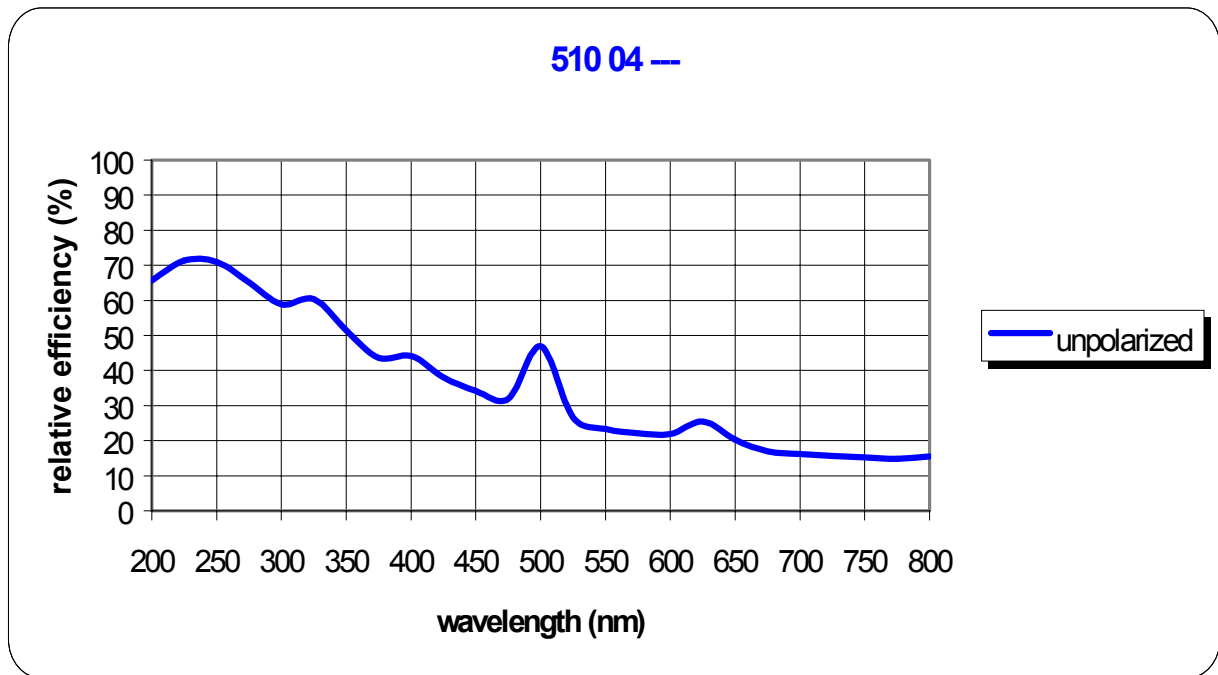


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Spectral Efficiency Curve

Reference 510 04	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	250
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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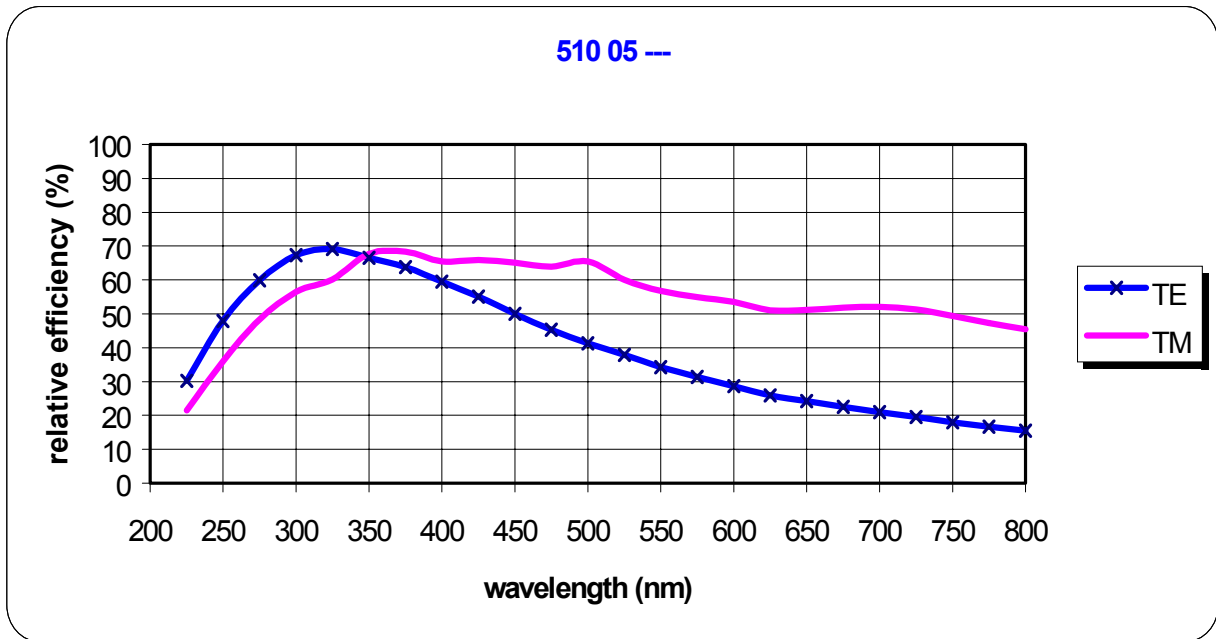
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 05	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	300
Blaze Angle (deg)	11°25'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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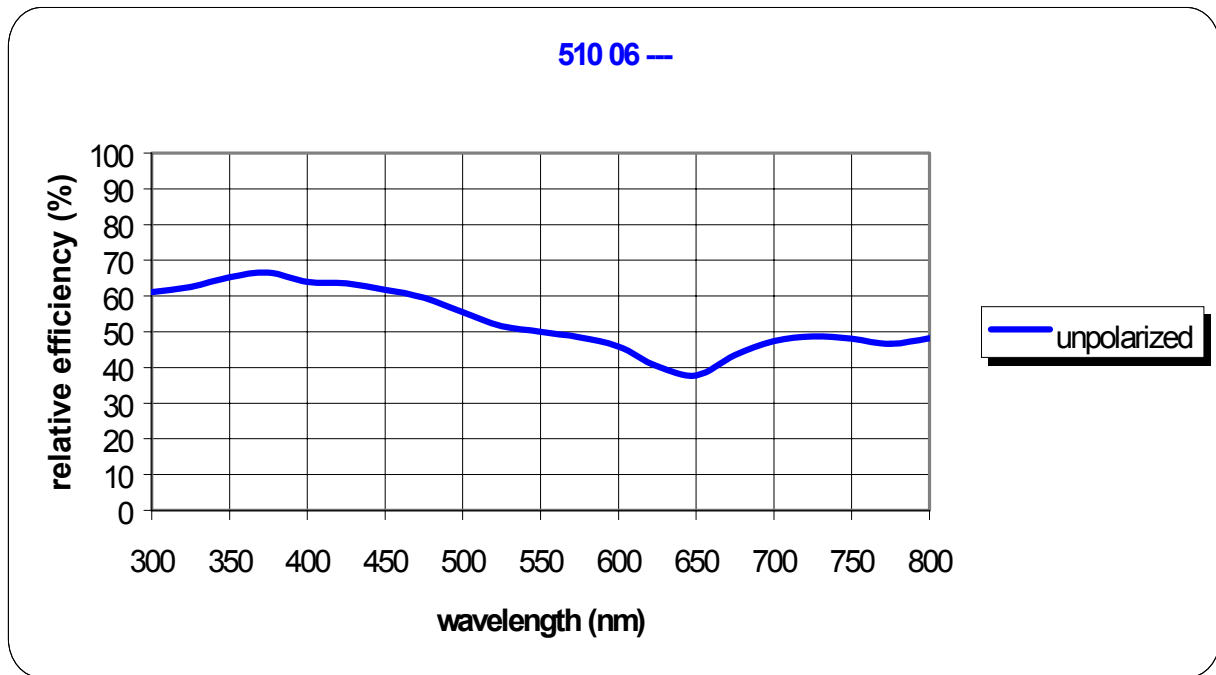
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Spectral Efficiency Curve

Reference 510 06	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	400
Blaze Angle (deg)	13°53'
Configuration	Quasi-littrow

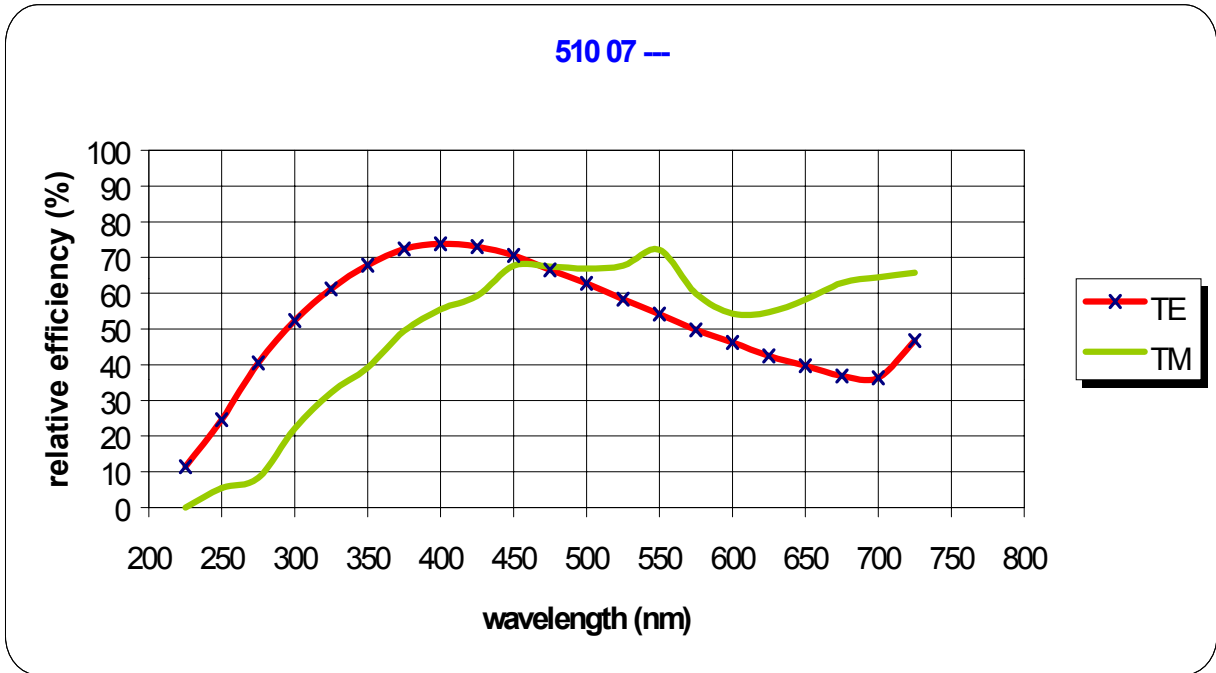


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Spectral Efficiency Curve

Reference 510 07	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow

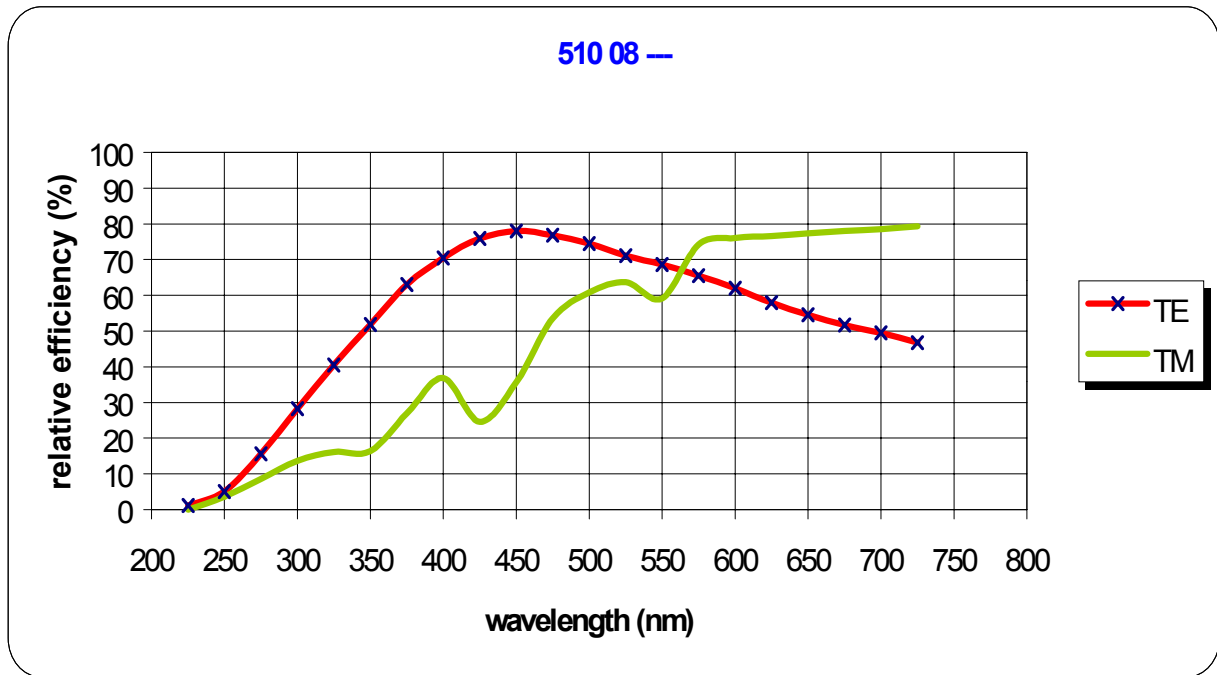


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 08	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	630
Blaze Angle (deg)	22°12'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

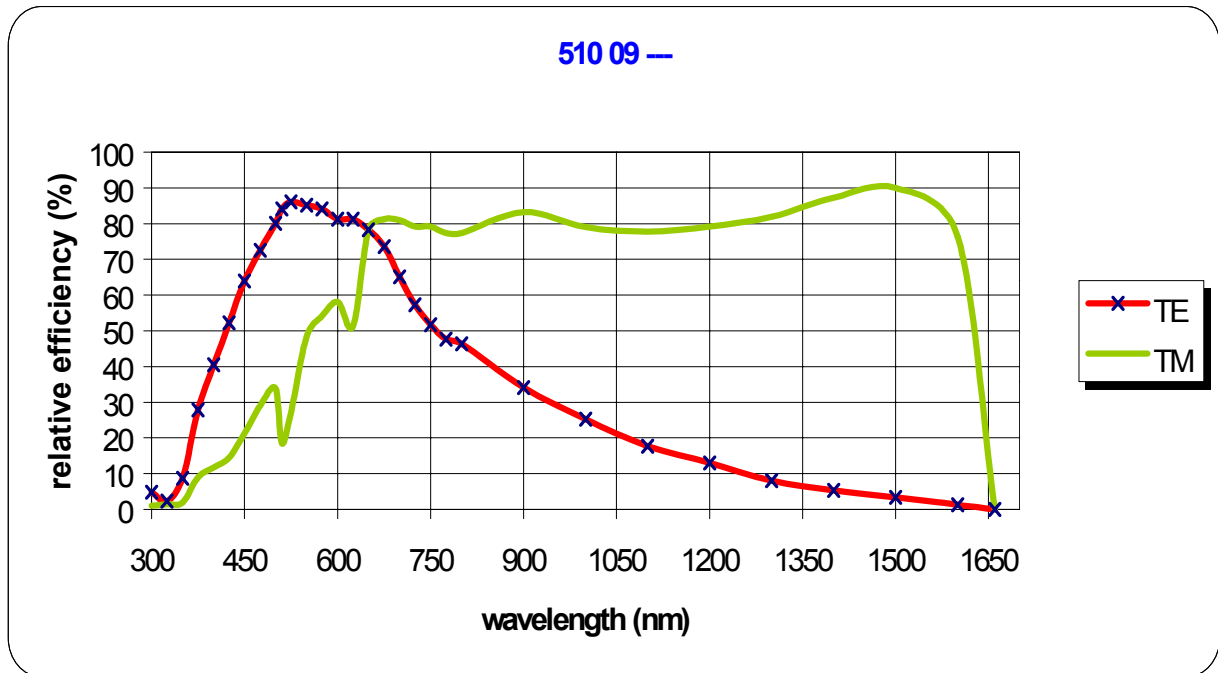


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Spectral Efficiency Curve

Reference 510 09	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	750
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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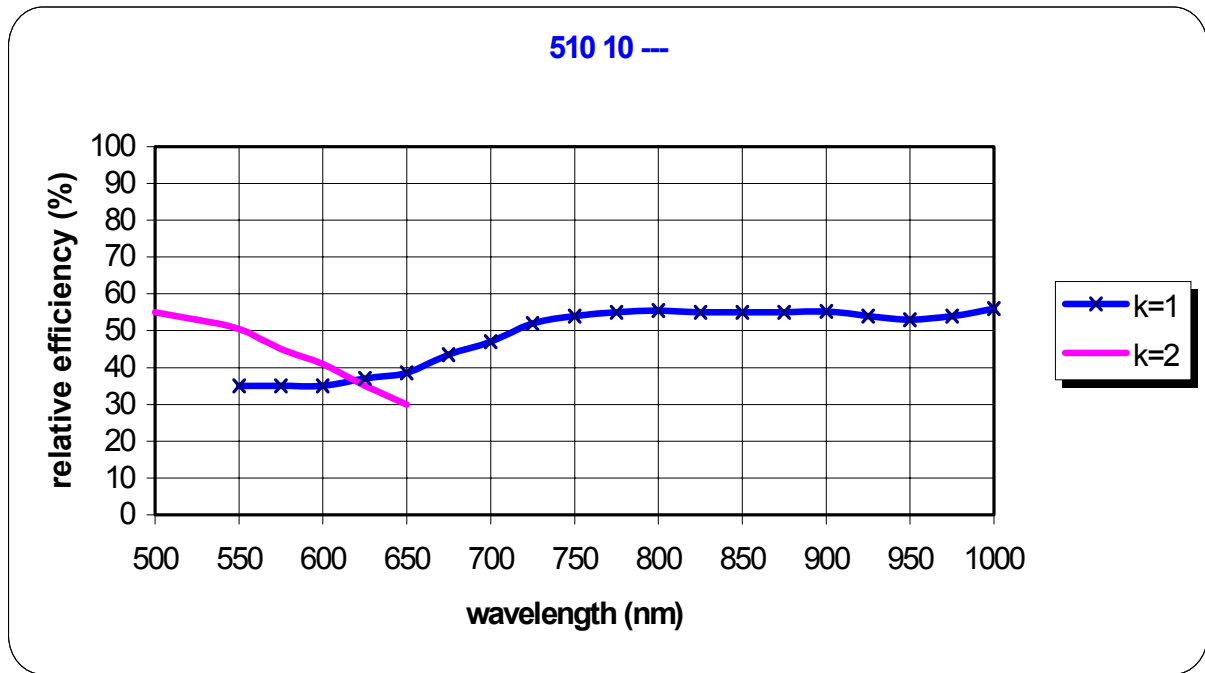
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Spectral Efficiency Curve

Reference 510 10	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	1000
Blaze Angle (deg)	36°52'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

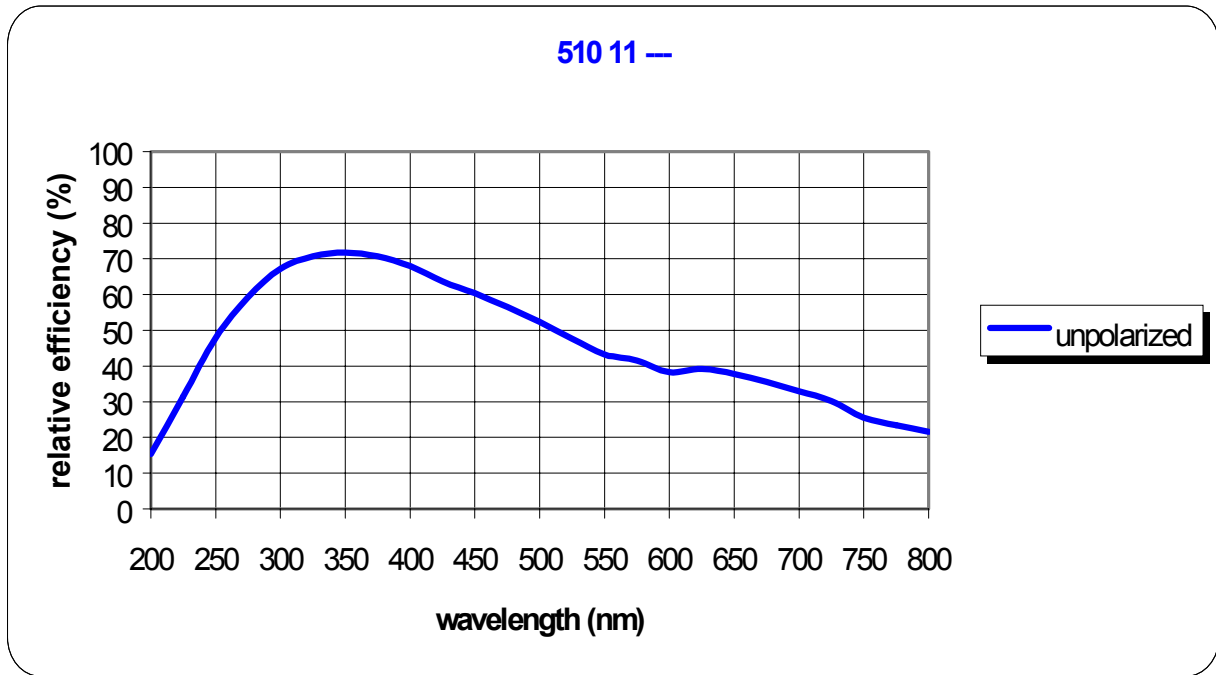


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Spectral Efficiency Curve

Reference 510 11	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	300
Blaze Angle (deg)	5°10'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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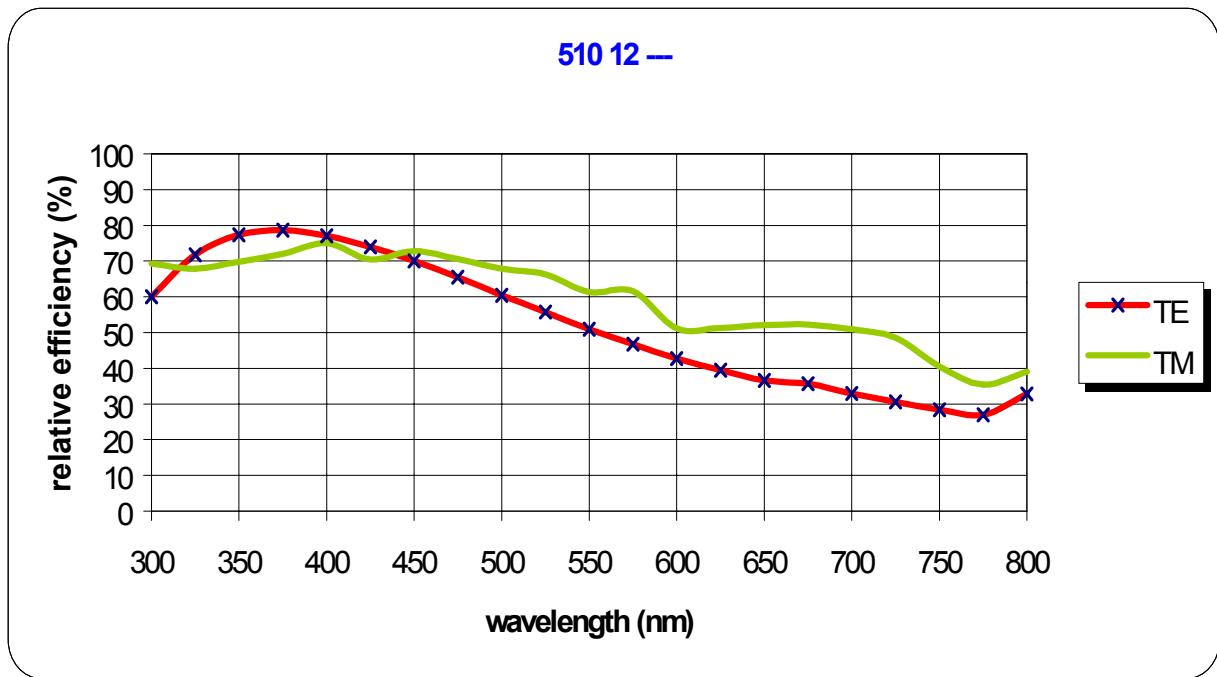
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 12	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	400
Blaze Angle (deg)	6°54'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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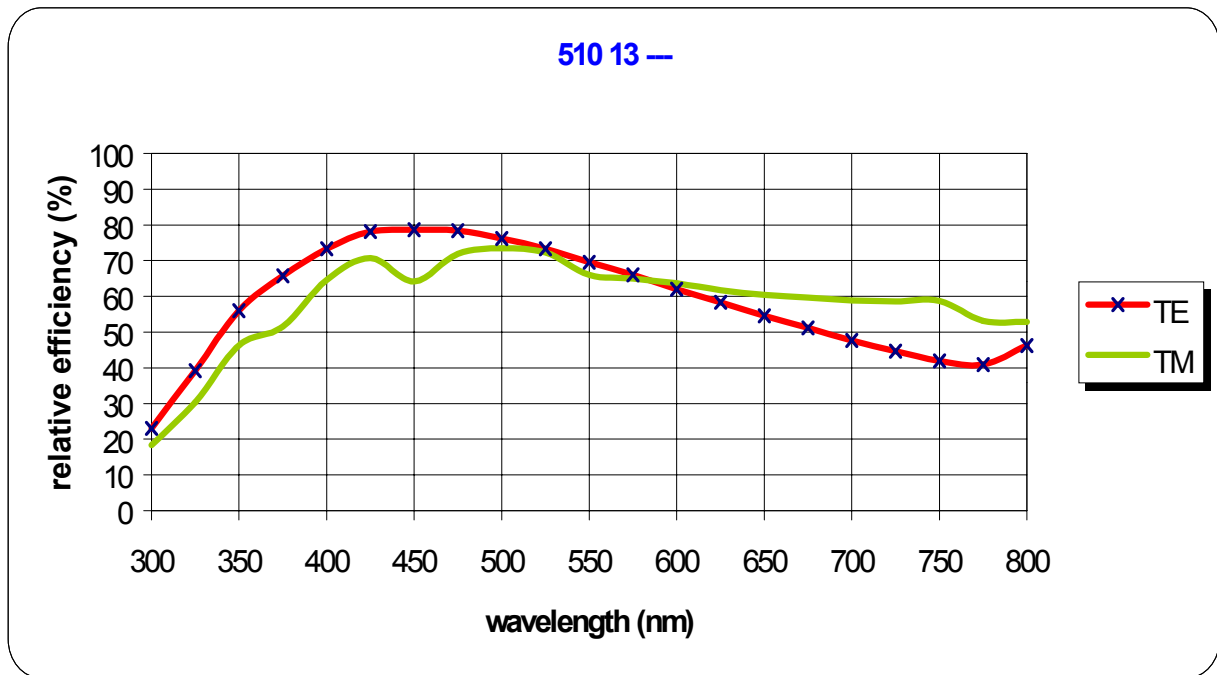
USA: +1 732 494 8660
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China: +86 (0)21 6289 6060

France: +33 (0)1 69 74 72 00
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 13	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow

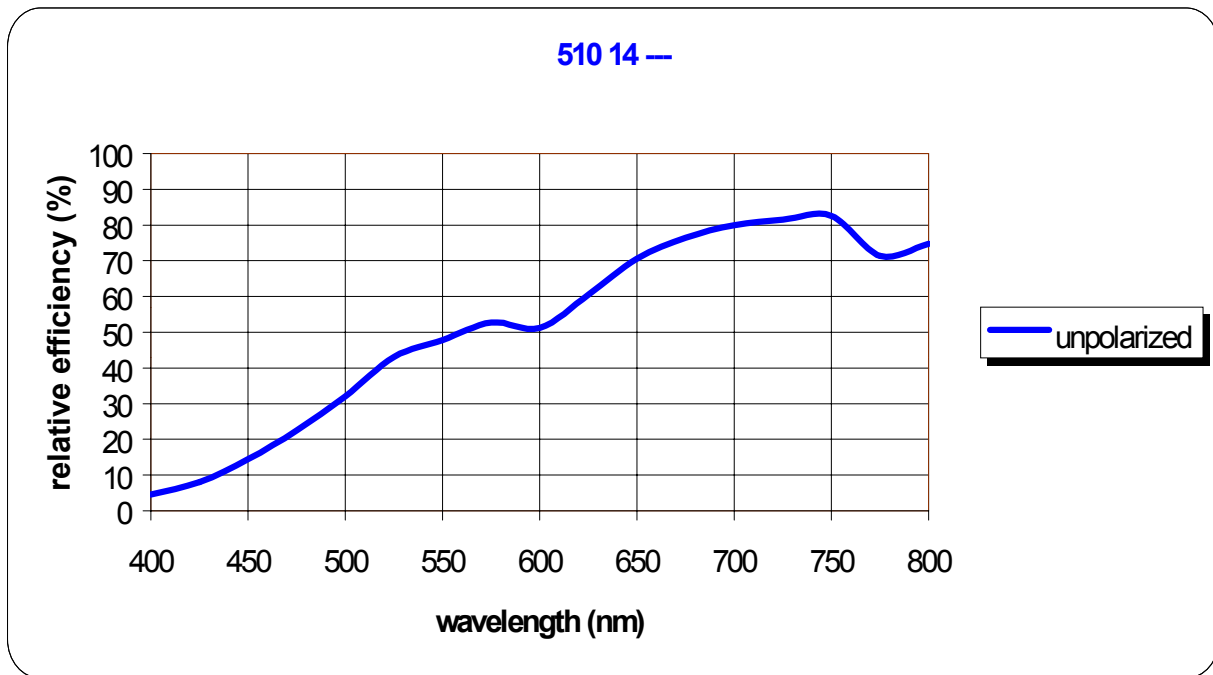


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 14	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	750
Blaze Angle (deg)	13°00'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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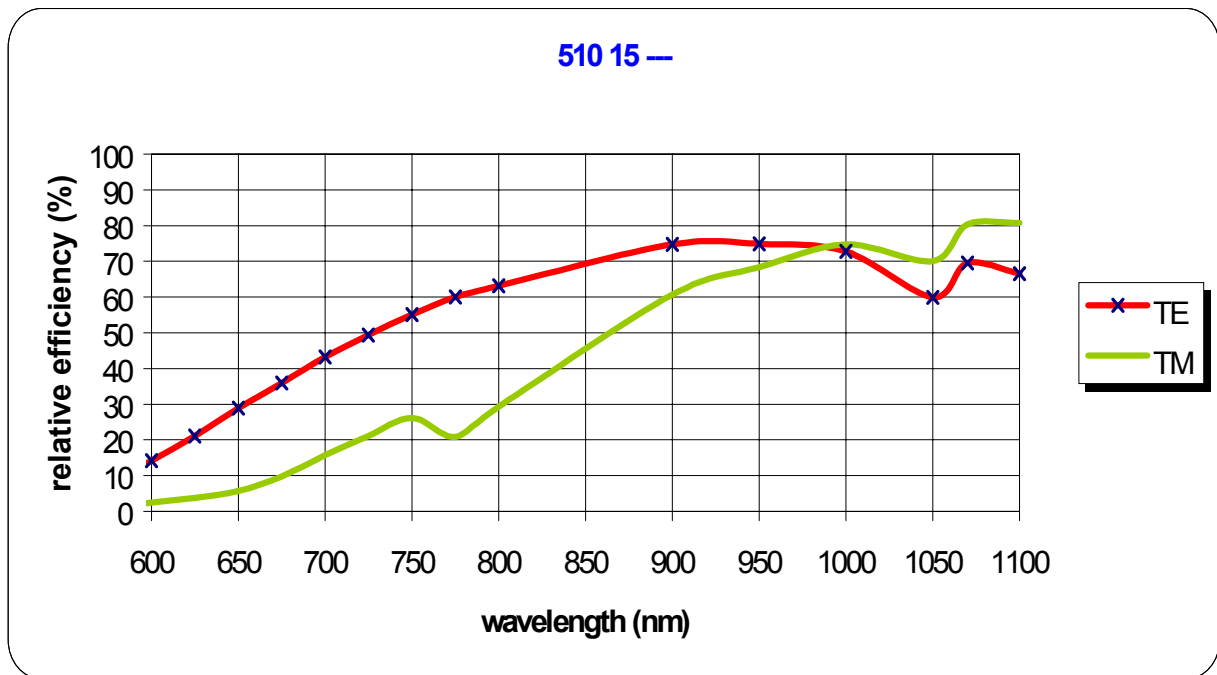
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 15	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	1000
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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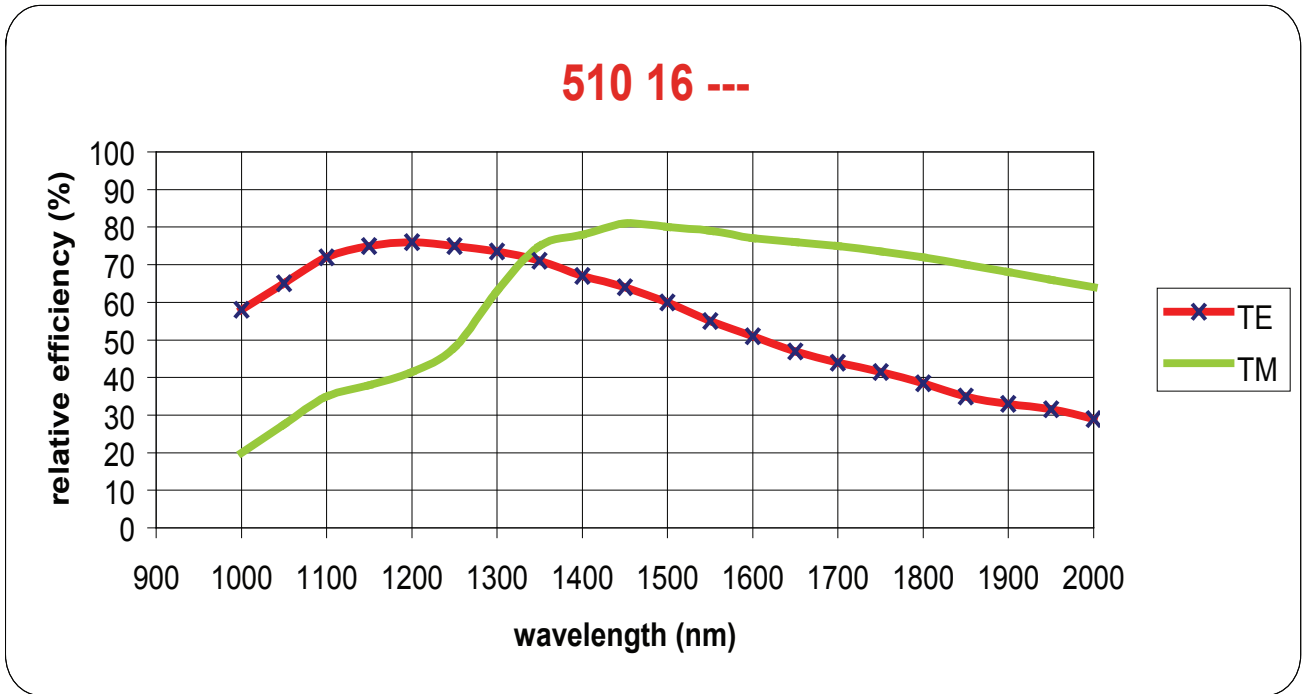
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 16	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	1500
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow

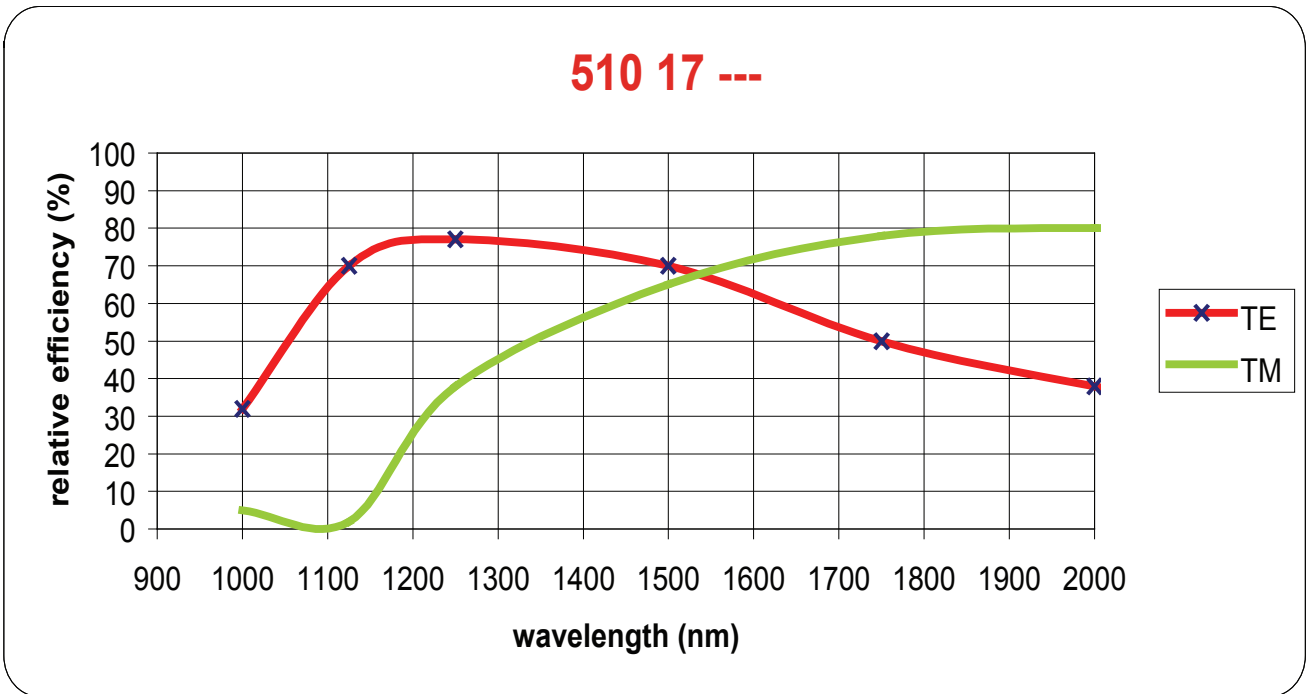


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 17	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (μm)	2
Blaze Angle (deg)	36°52'
Configuration	Quasi-littrow

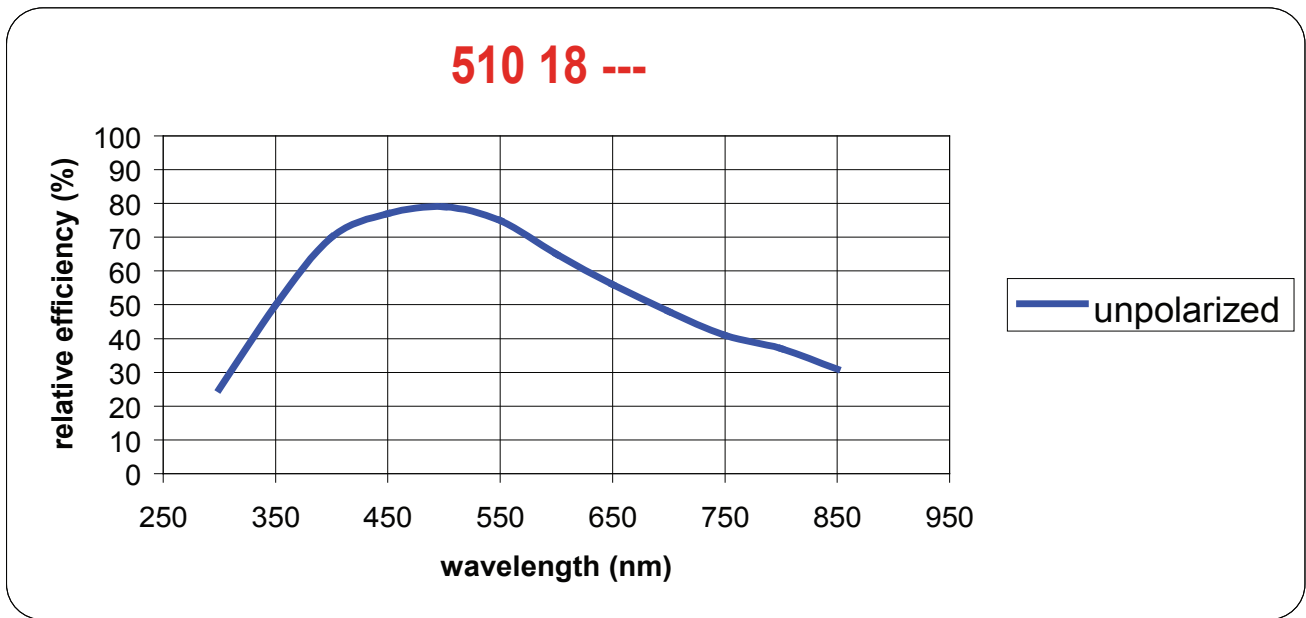


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 18	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	4°18'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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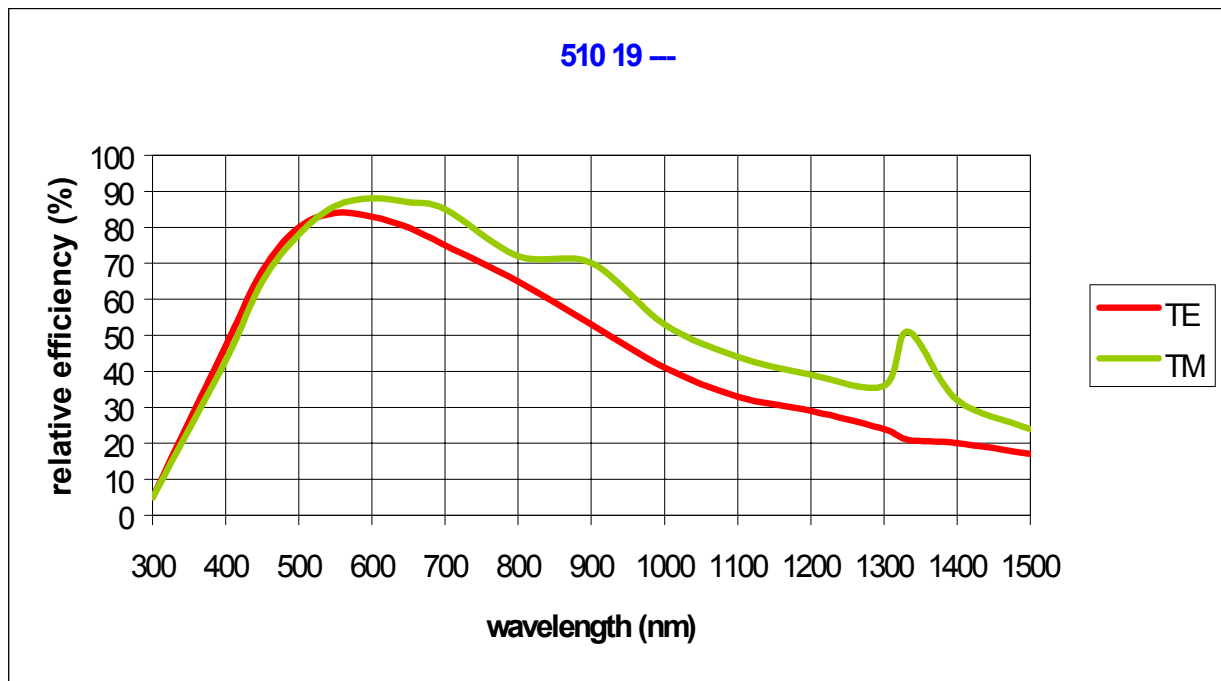
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 19	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (nm)	600
Blaze Angle (deg)	5°10'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

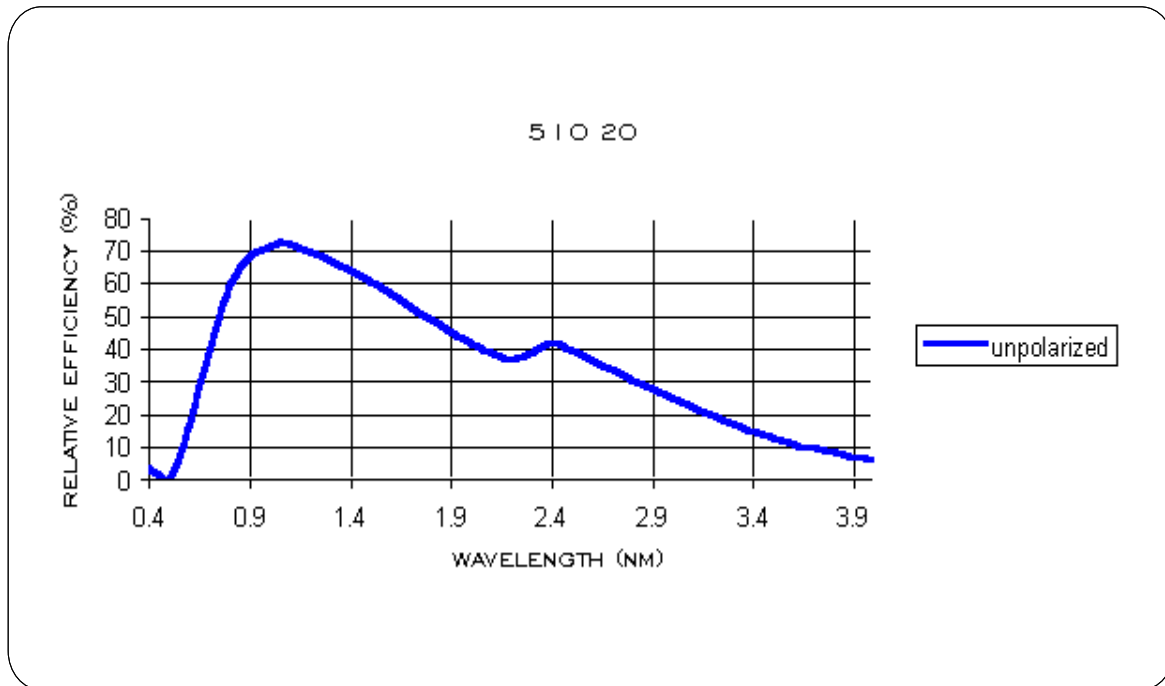


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Spectral Efficiency Curve

Reference 510 20	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (nm)	1000
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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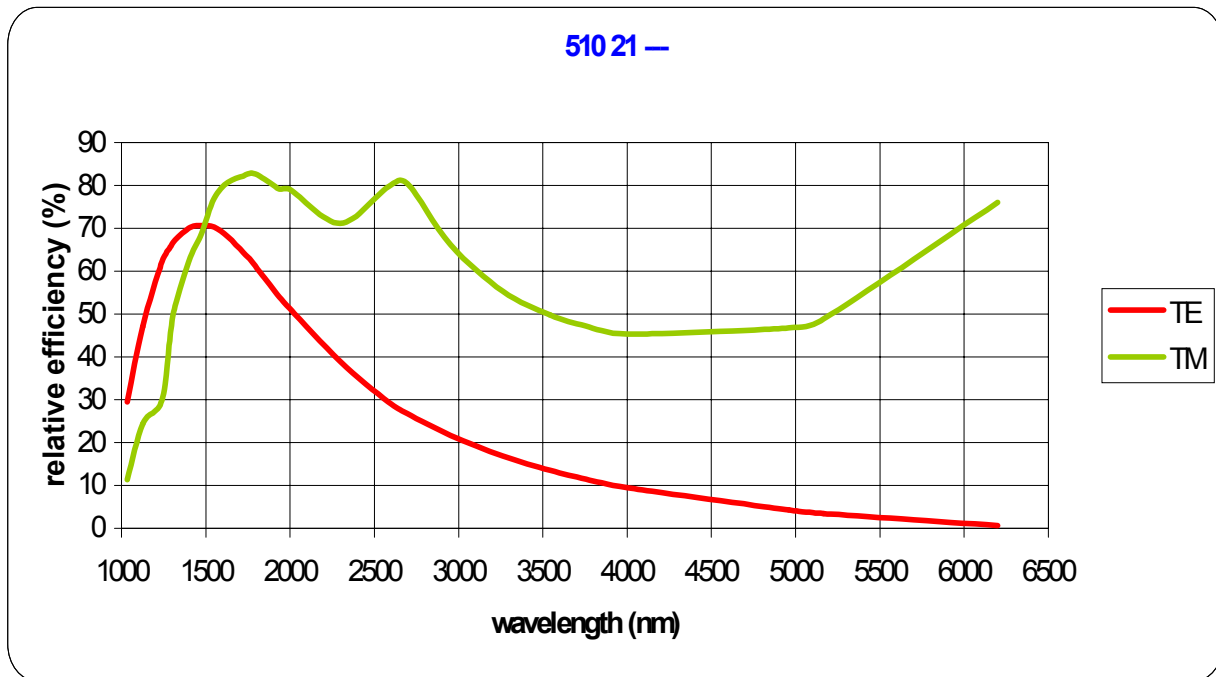
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 21	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (μm)	2
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

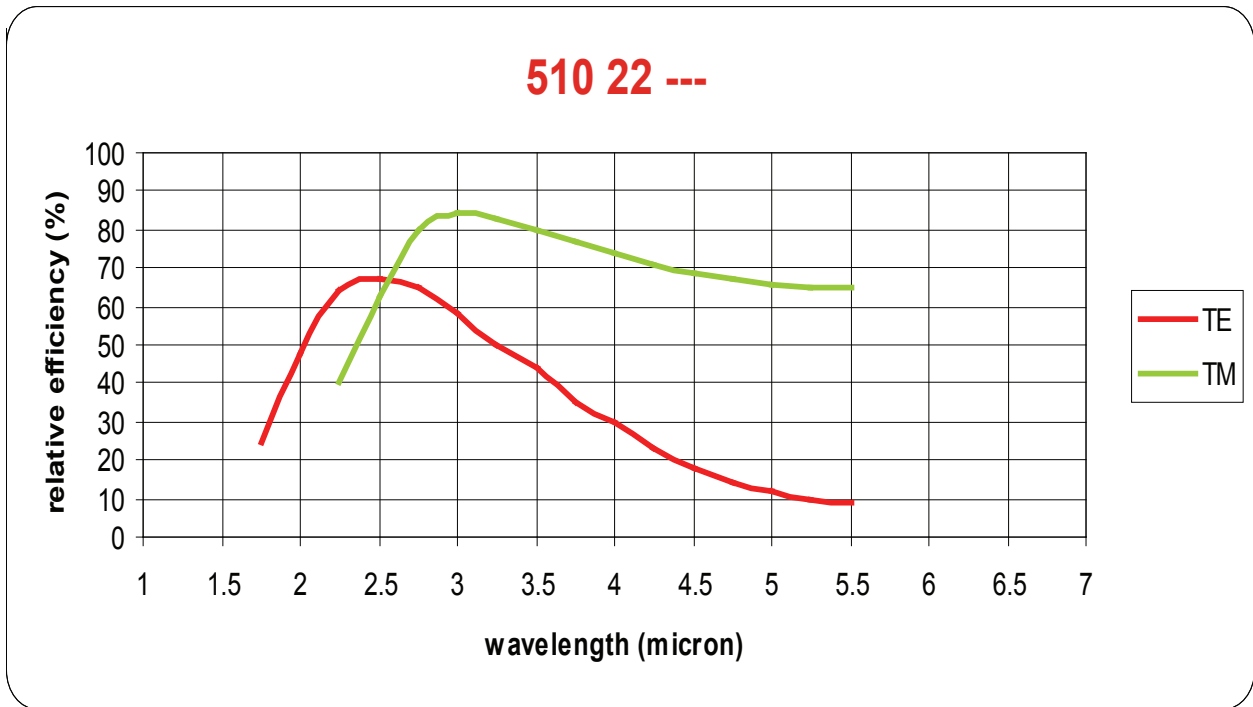


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Spectral Efficiency Curve

Reference 510 22	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (μm)	3
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow

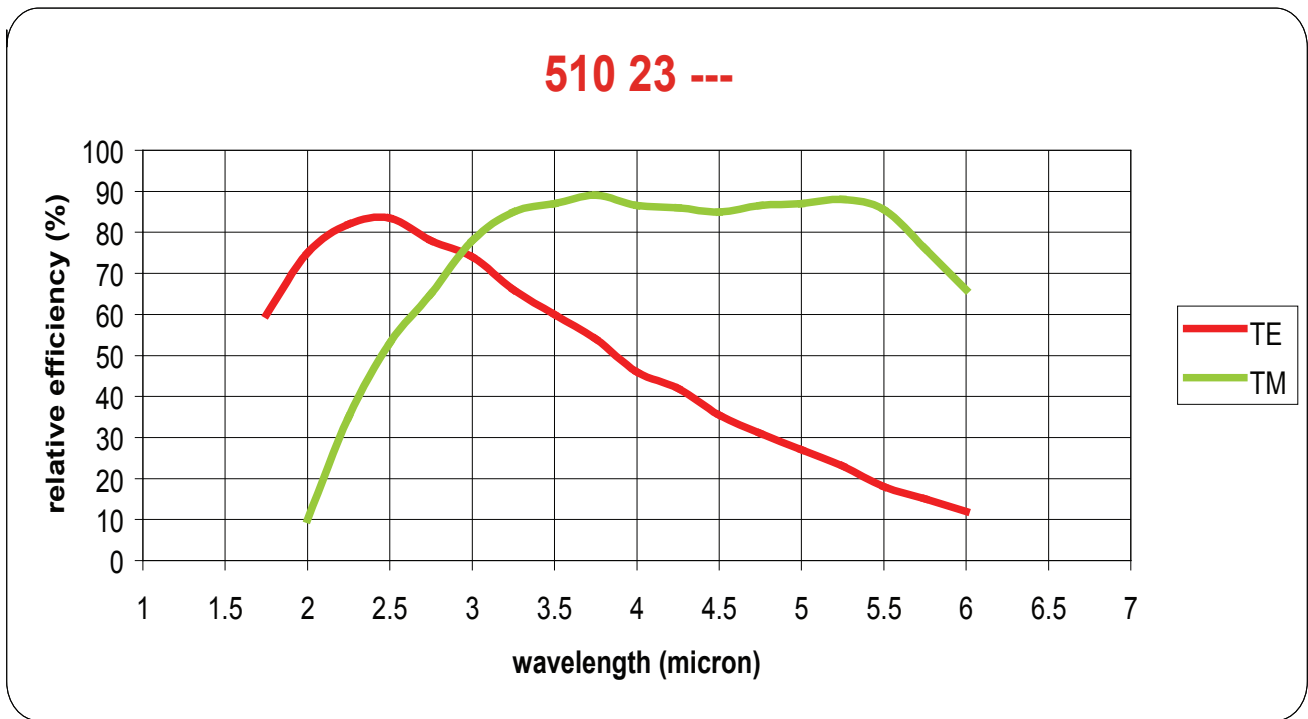


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 23	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (μm)	4
Blaze Angle (deg)	36°52'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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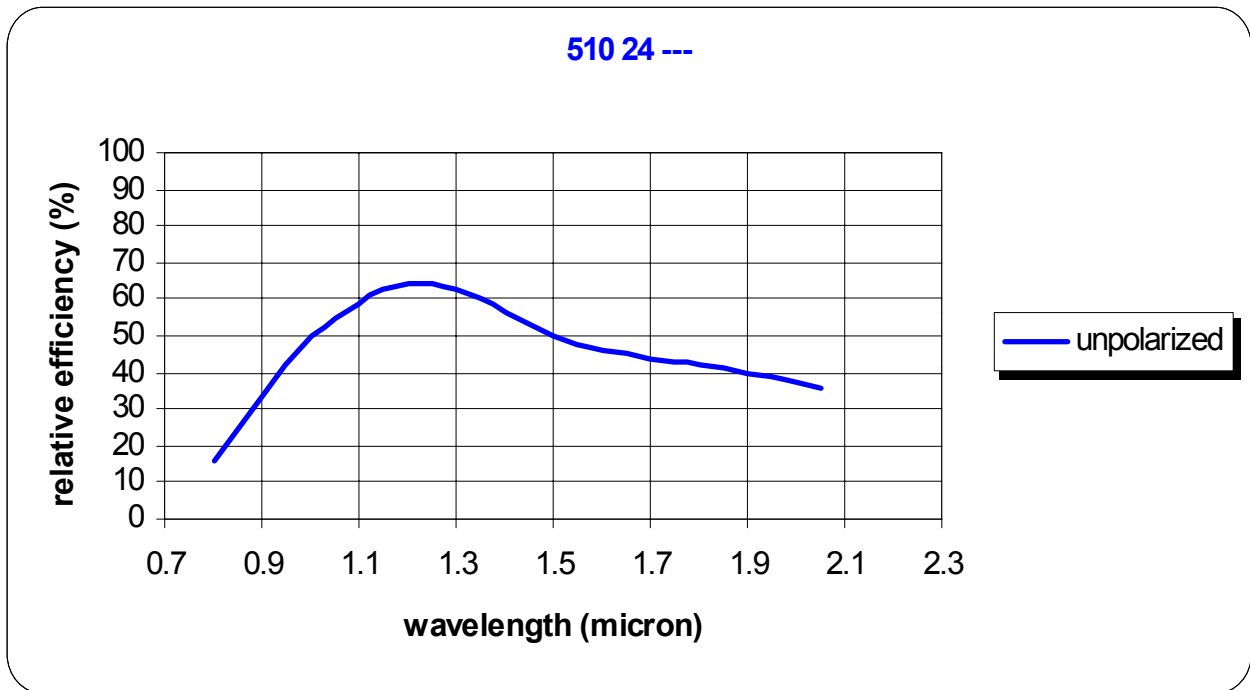
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 24	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	
Blaze Wavelength (nm)	1200
Blaze Angle (deg)	5°10'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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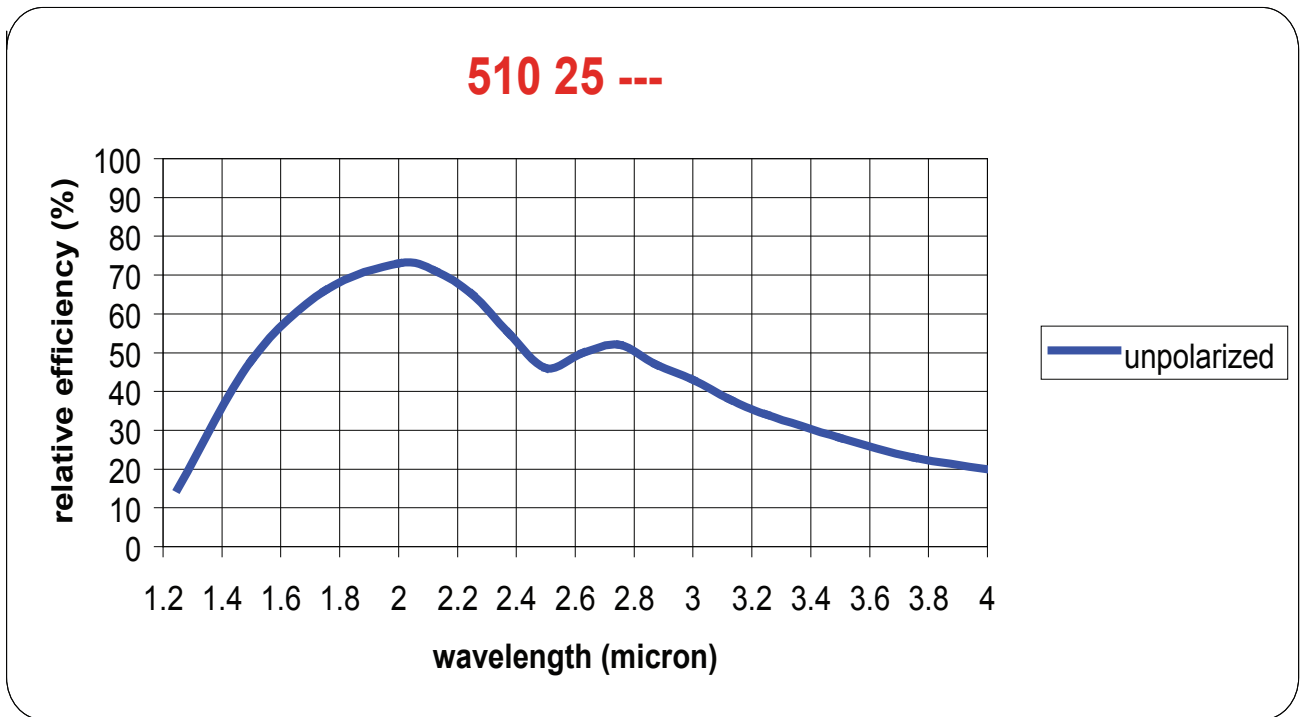
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 25	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	
Blaze Wavelength (μm)	2
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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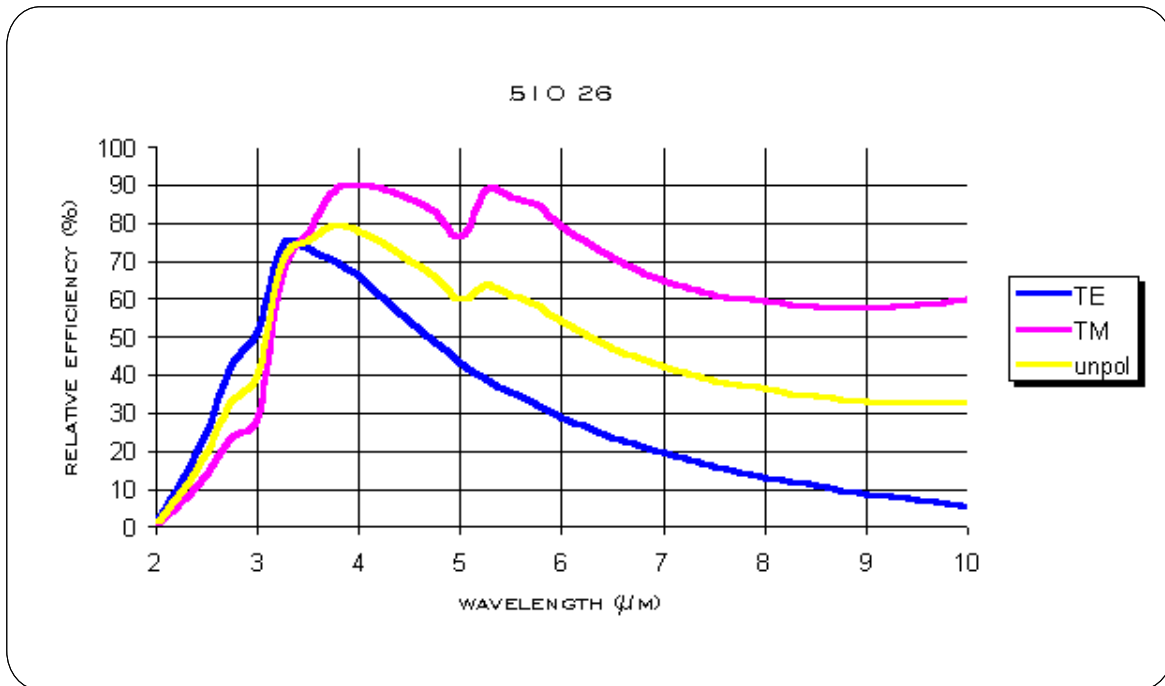
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 26	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	
Blaze Wavelength (μm)	4
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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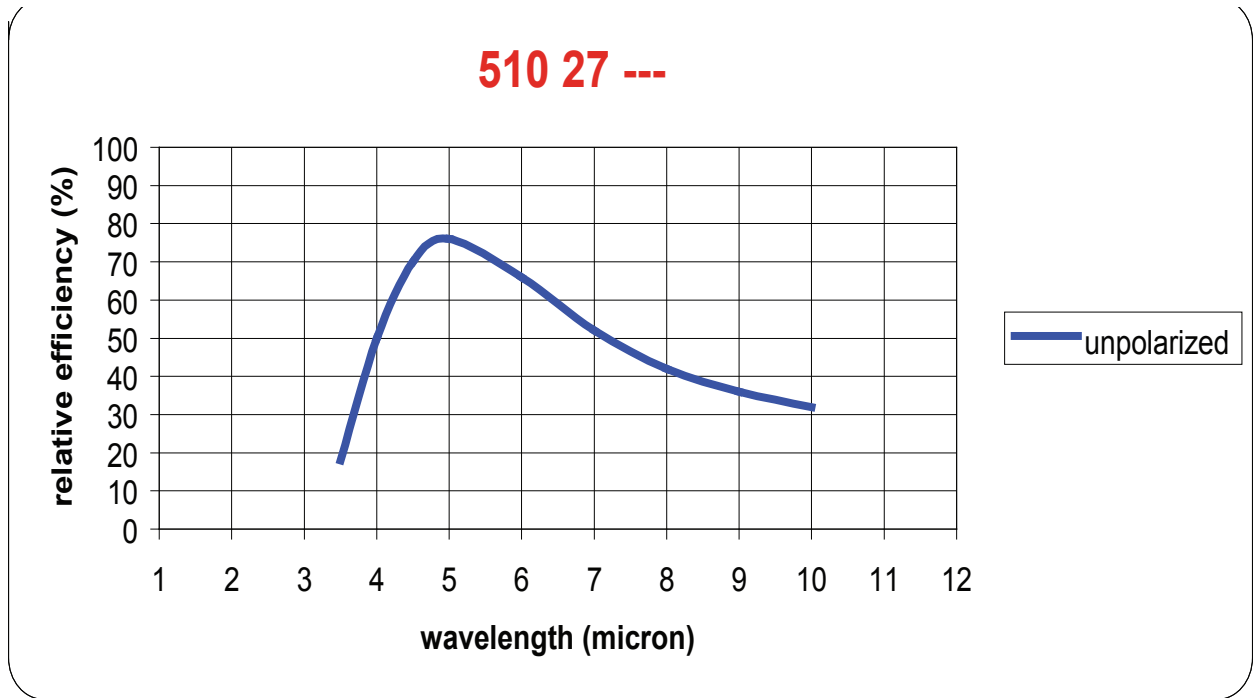
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 27	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	
Blaze Wavelength (μm)	5
Blaze Angle (deg)	22°01'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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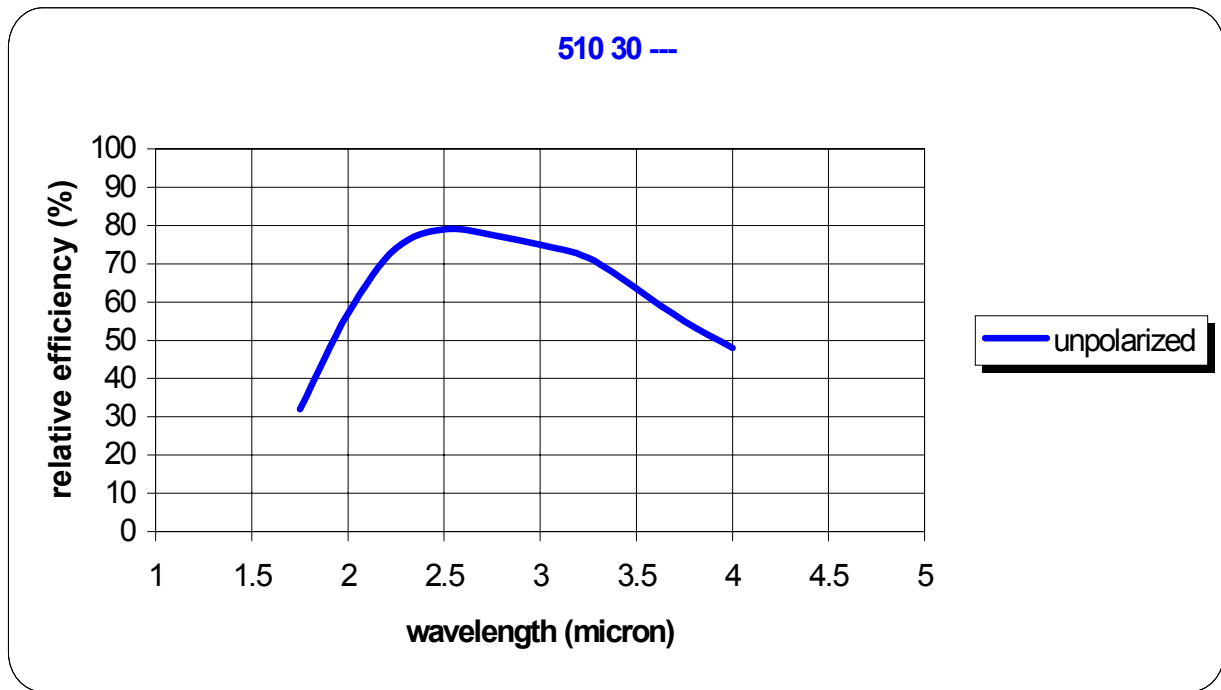
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 30	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	120
Spectral Range (nm)	
Blaze Wavelength (μm)	2.5
Blaze Angle (deg)	8°39'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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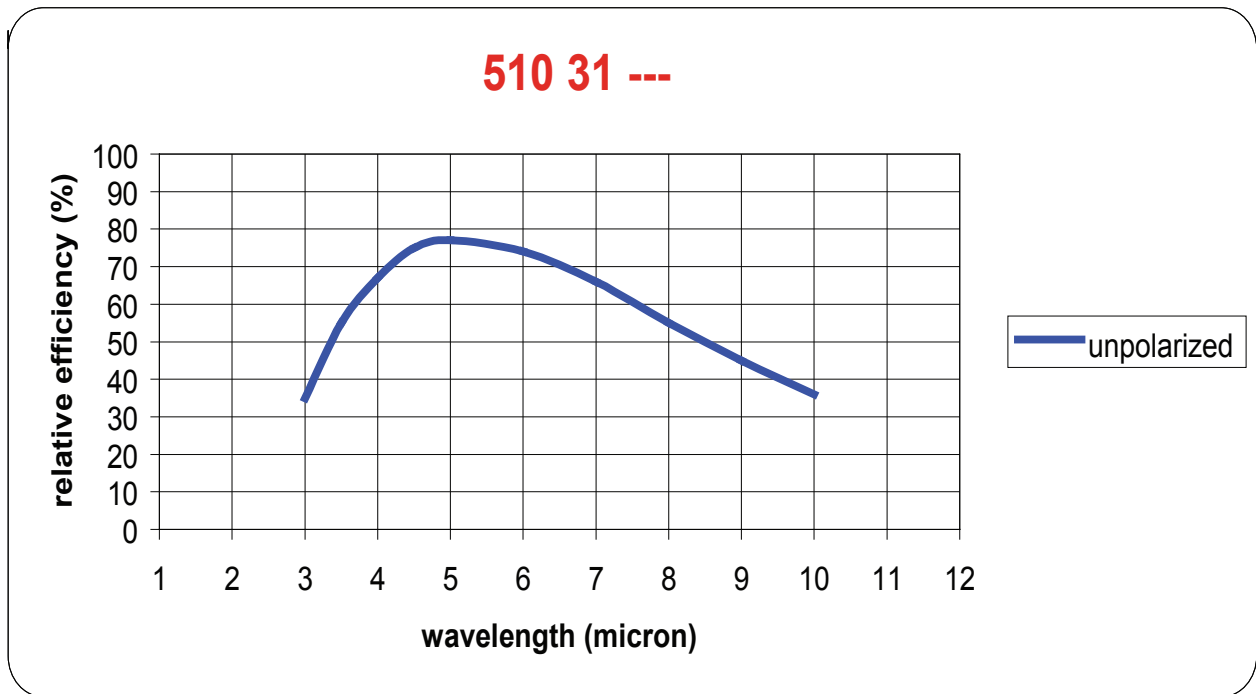
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 31	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	120
Spectral Range (nm)	
Blaze Wavelength (μm)	5
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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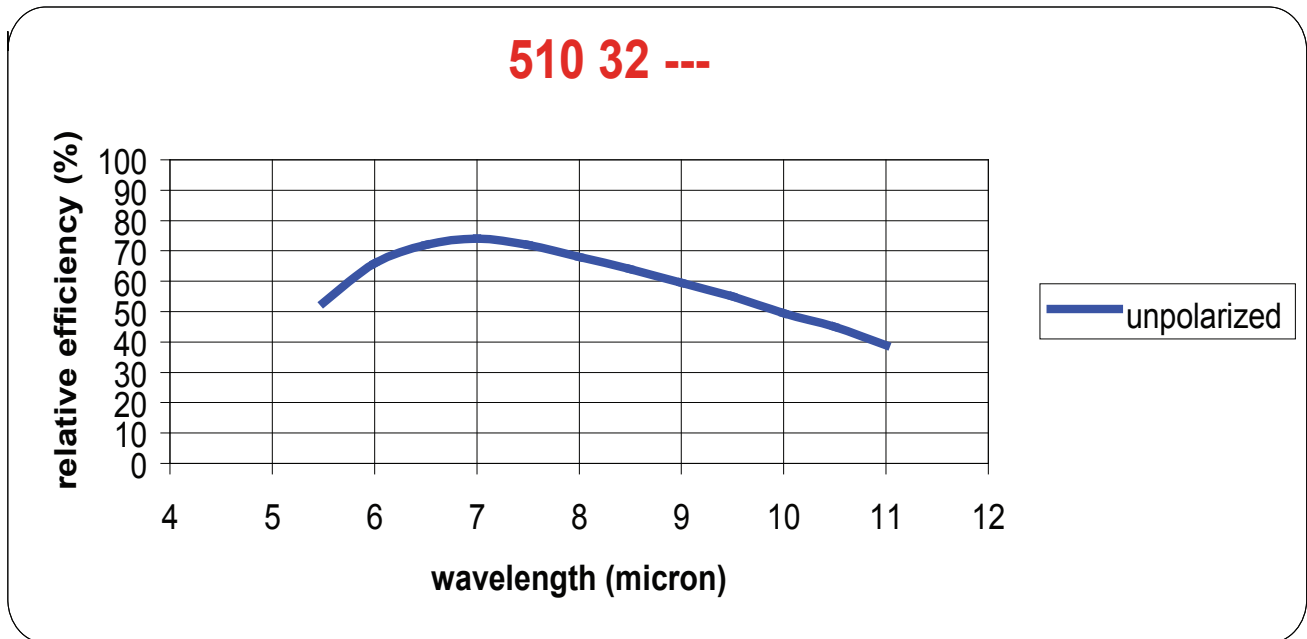
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 32	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	120
Spectral Range (nm)	
Blaze Wavelength (μm)	7.5
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

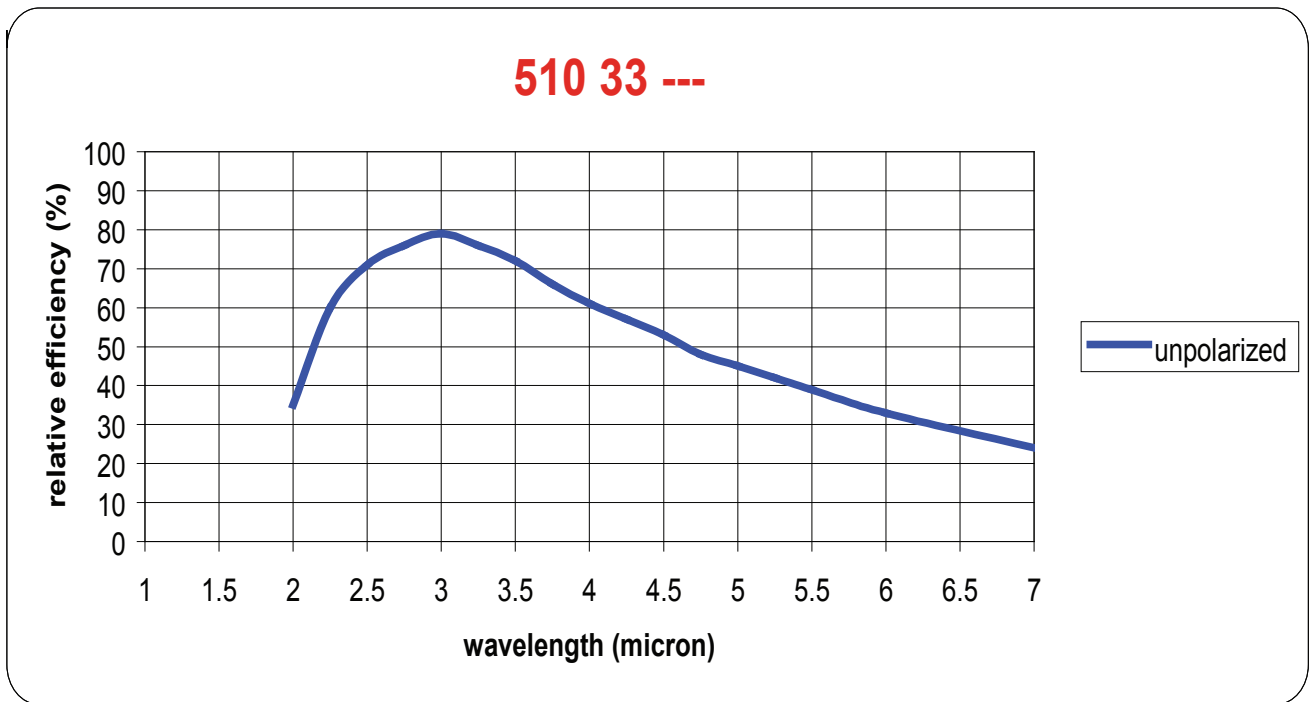


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Spectral Efficiency Curve

Reference 510 33	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	100
Spectral Range (nm)	
Blaze Wavelength (μm)	3
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow

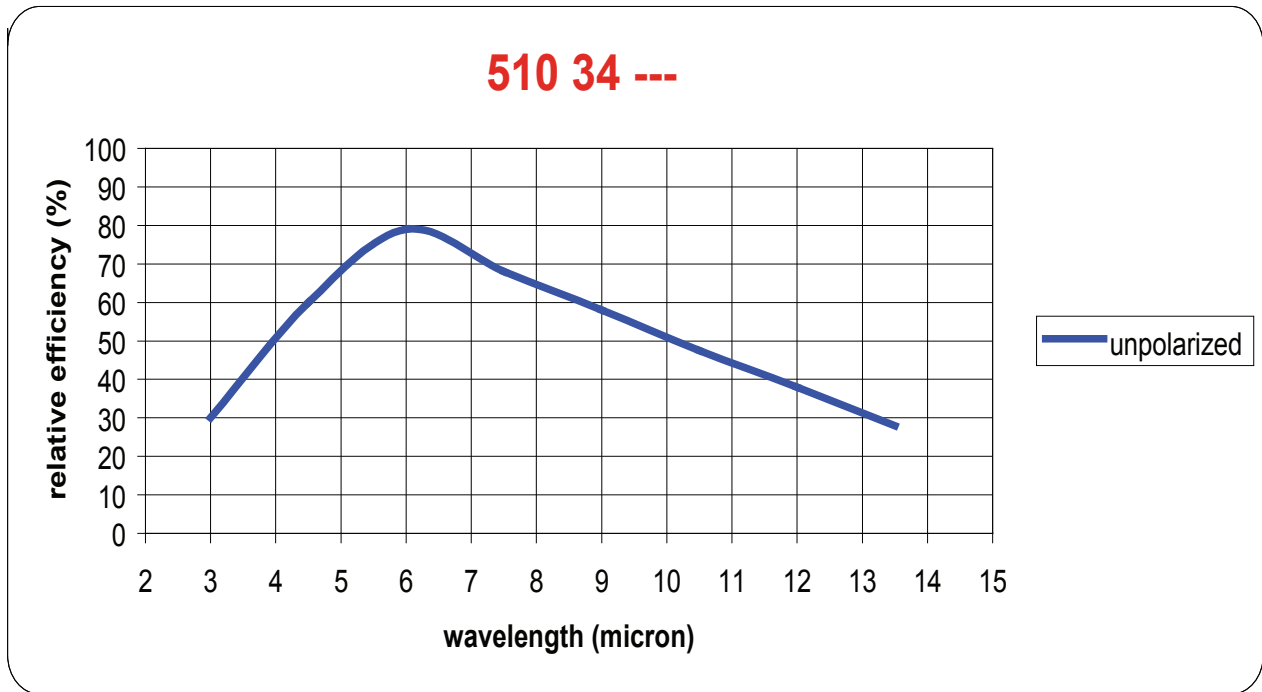


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 34	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	100
Spectral Range (nm)	
Blaze Wavelength (μm)	6
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow

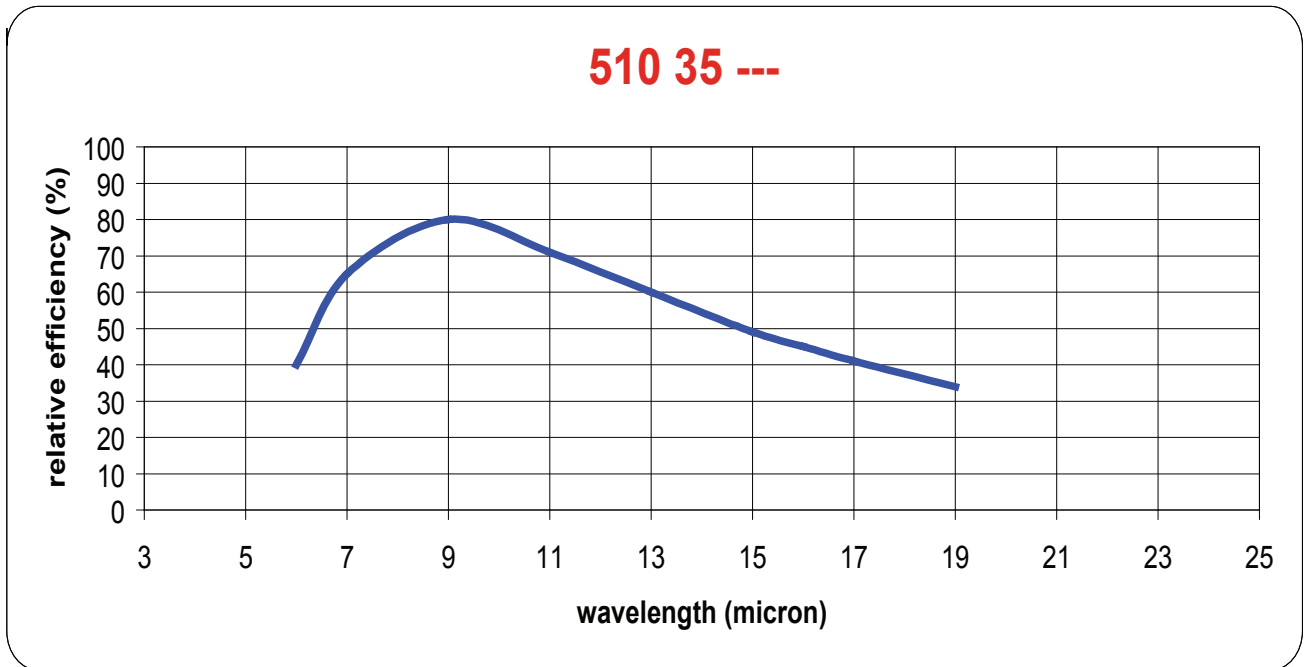


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Theoretical Efficiency Curve

Reference 510 35	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	100
Spectral Range (nm)	
Blaze Wavelength (μm)	9
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow

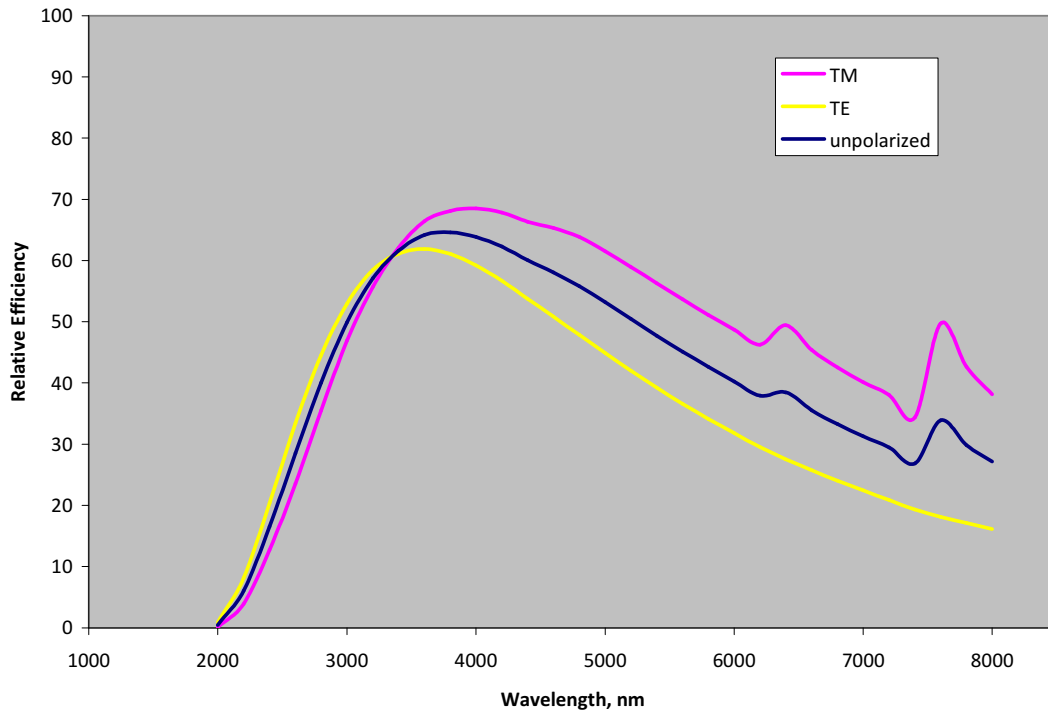


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Theoretical Efficiency Curve

Reference 510 36	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	75
Spectral Range (nm)	
Blaze Wavelength (μm)	4
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

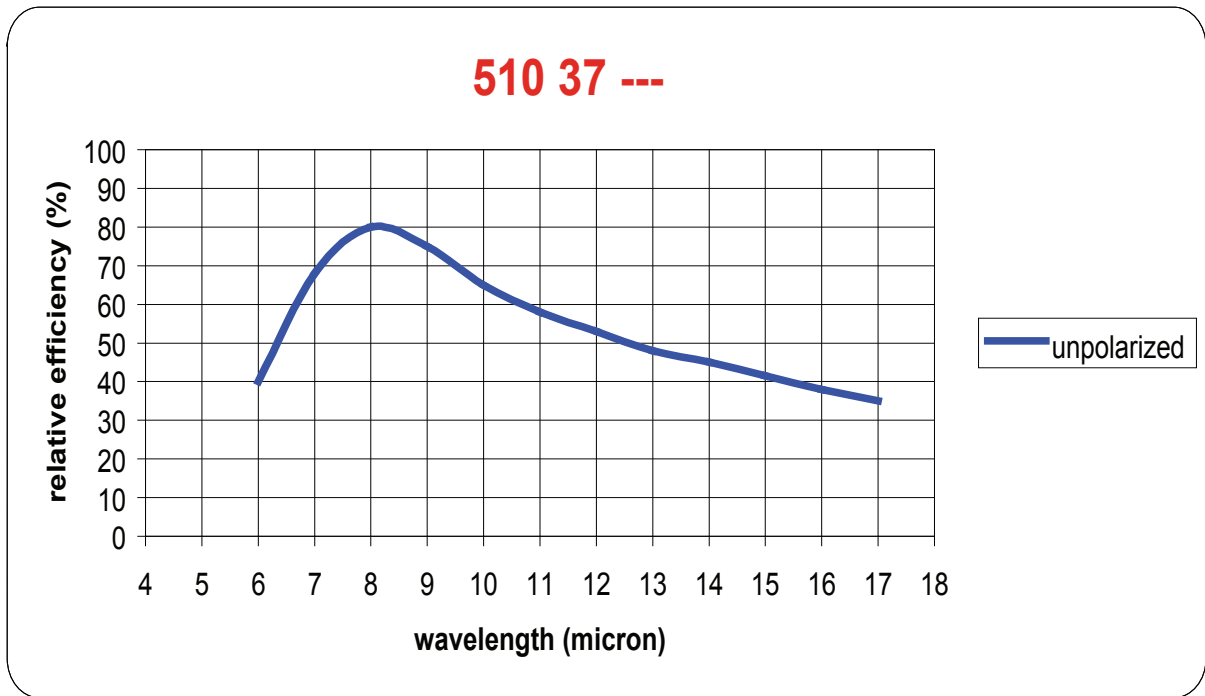


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Spectral Efficiency Curve

Reference 510 37	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	75
Spectral Range (nm)	
Blaze Wavelength (μm)	8
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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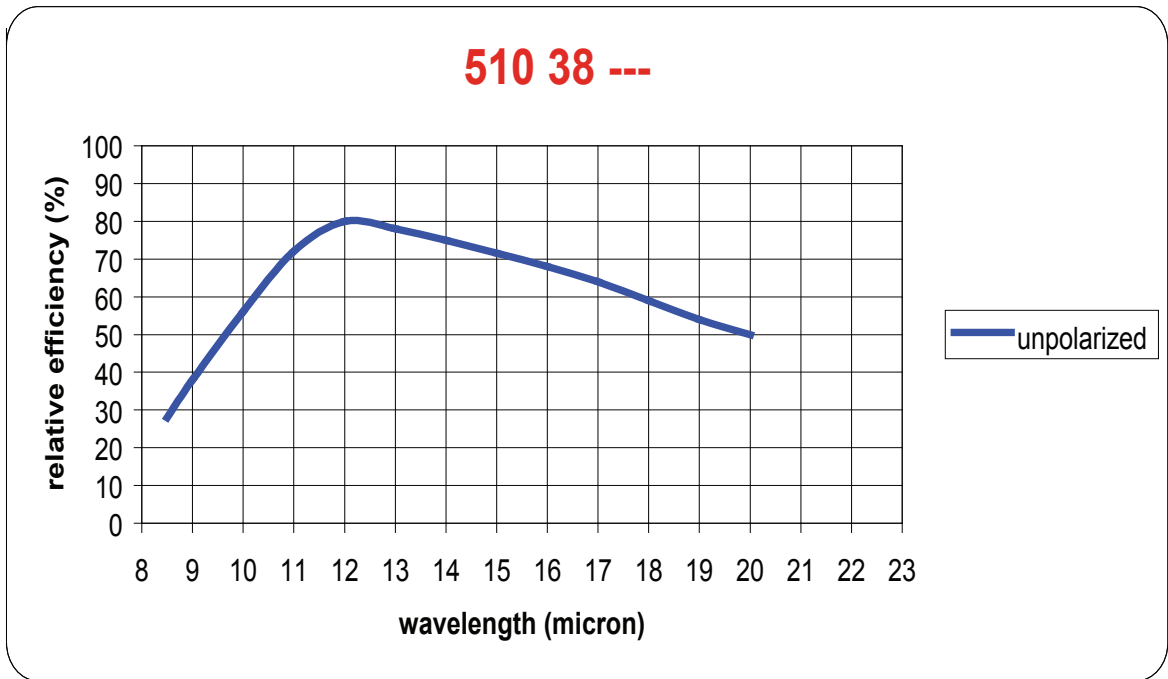
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 38	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	75
Spectral Range (nm)	
Blaze Wavelength (μm)	12
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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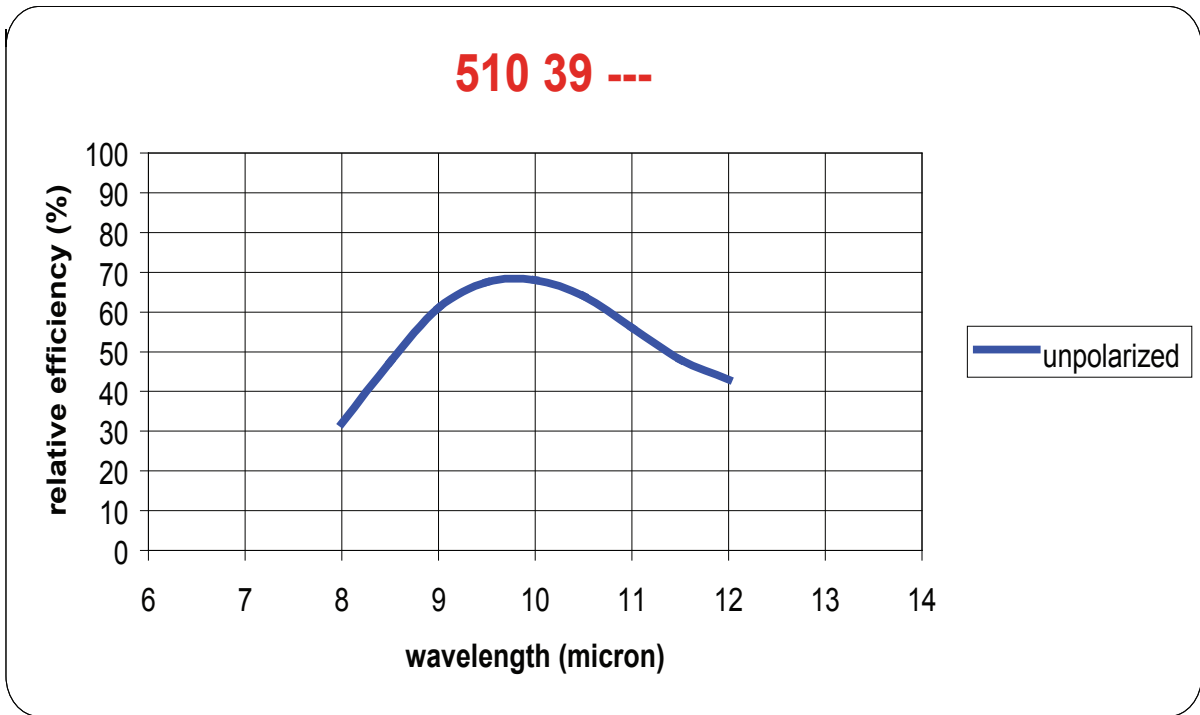
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 510 39	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	60
Spectral Range (nm)	
Blaze Wavelength (μm)	10
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow

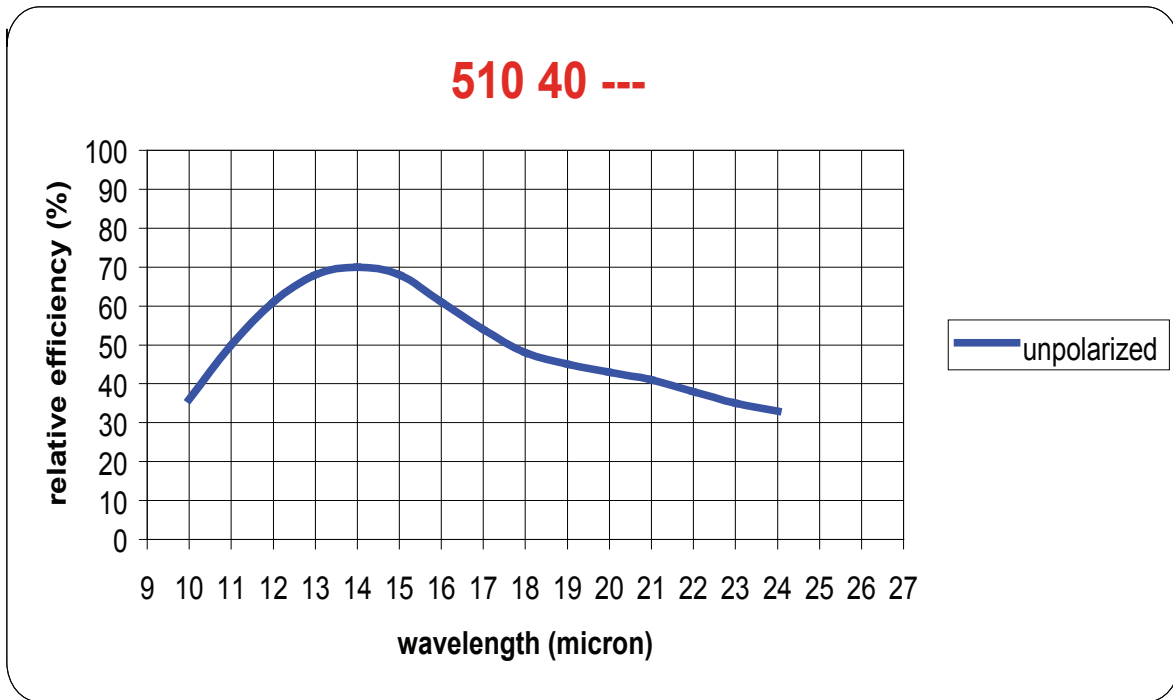


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 40	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	60
Spectral Range (nm)	
Blaze Wavelength (μm)	15
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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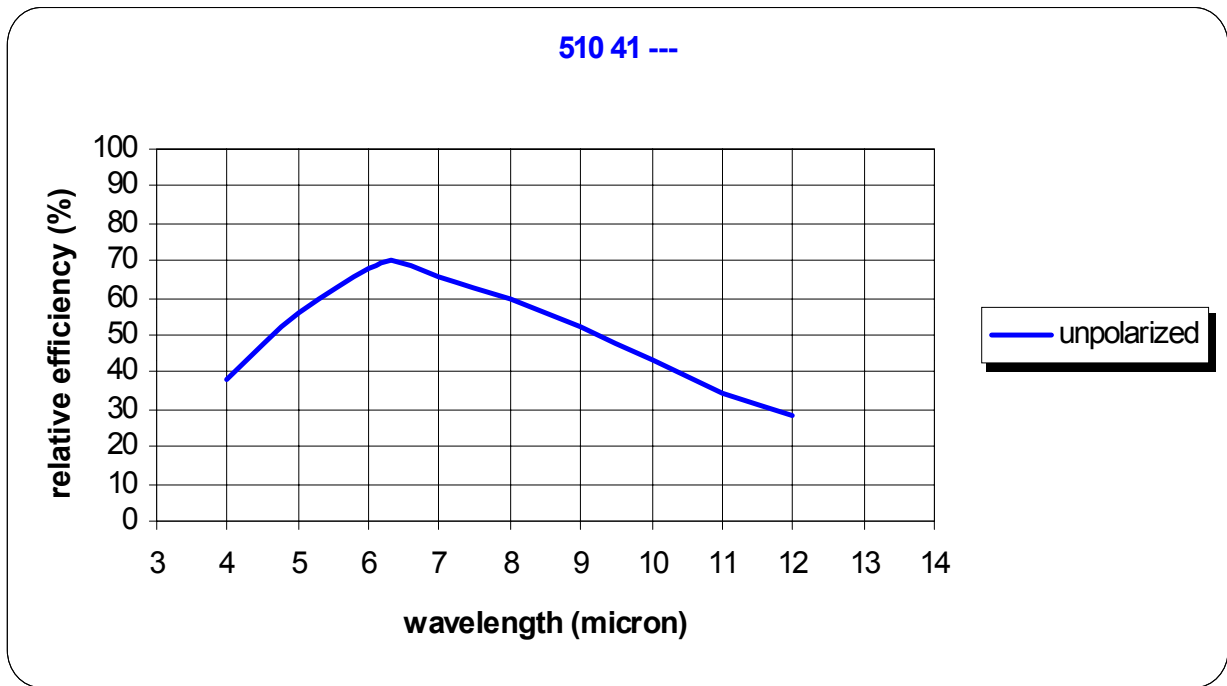
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Spectral Efficiency Curve

Reference 510 41	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	50
Spectral Range (nm)	
Blaze Wavelength (μm)	6
Blaze Angle (deg)	8°38'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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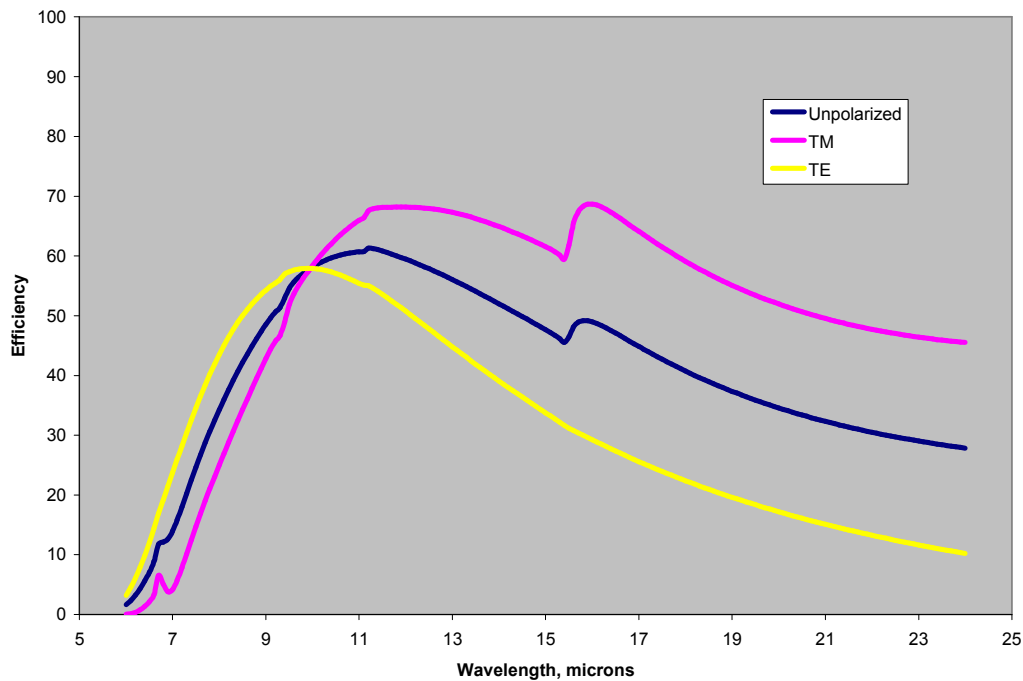
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Theoretical Efficiency Curve

Reference 510 42	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	50
Spectral Range (nm)	
Blaze Wavelength (μm)	12
Blaze Angle (deg)	17°27'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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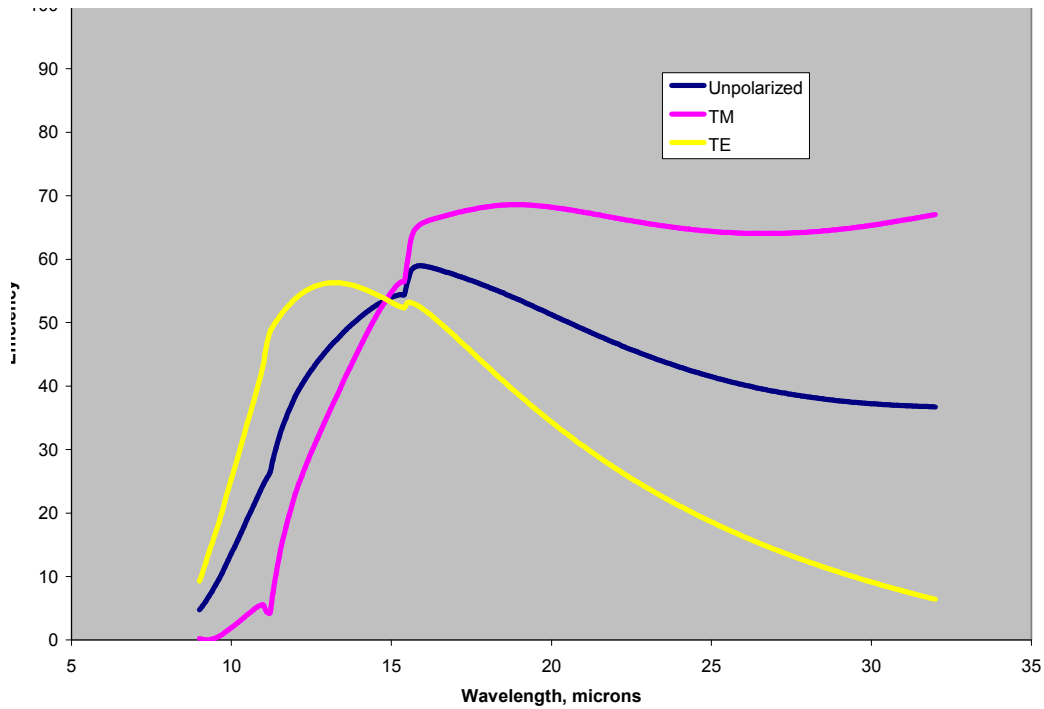
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Theoretical Efficiency Curve

Reference 510 43	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	50
Spectral Range (nm)	
Blaze Wavelength (μm)	18
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

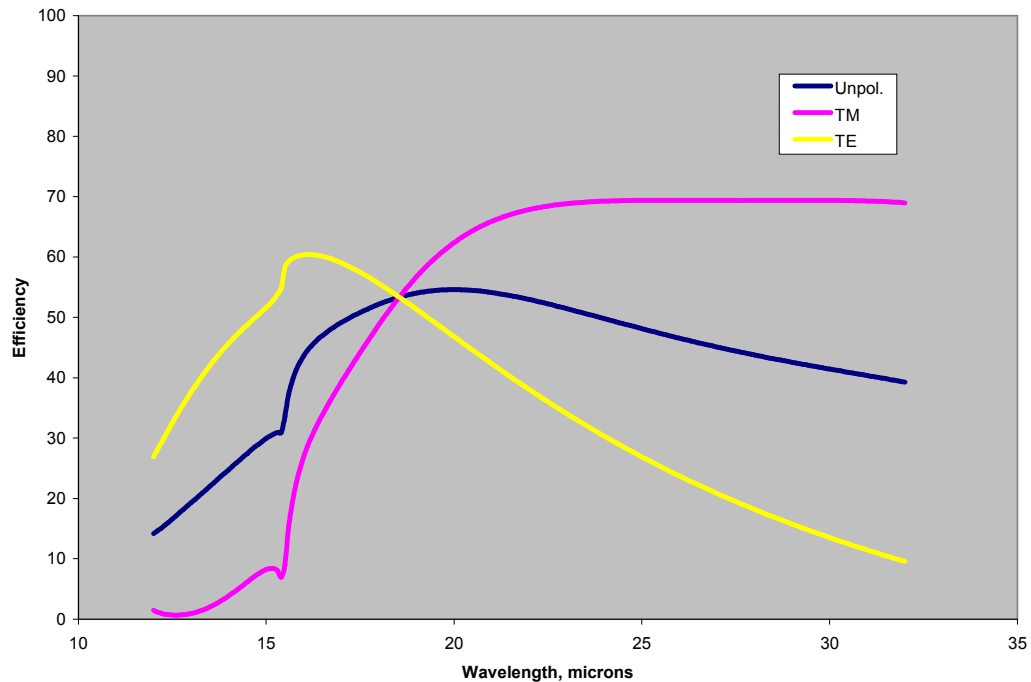


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Theoretical Efficiency Curve

Reference 510 44	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	50
Spectral Range (nm)	
Blaze Wavelength (μm)	24
Blaze Angle (deg)	36°52'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

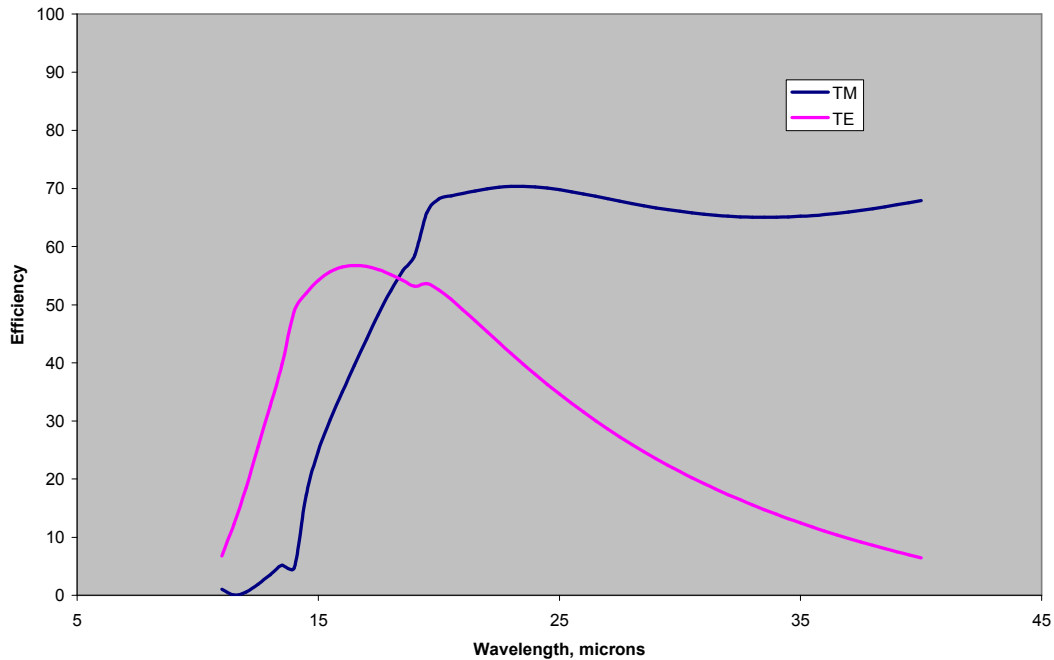


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Theoretical Efficiency Curve

Reference 510 45	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	40
Spectral Range (nm)	
Blaze Wavelength (μm)	22.5
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

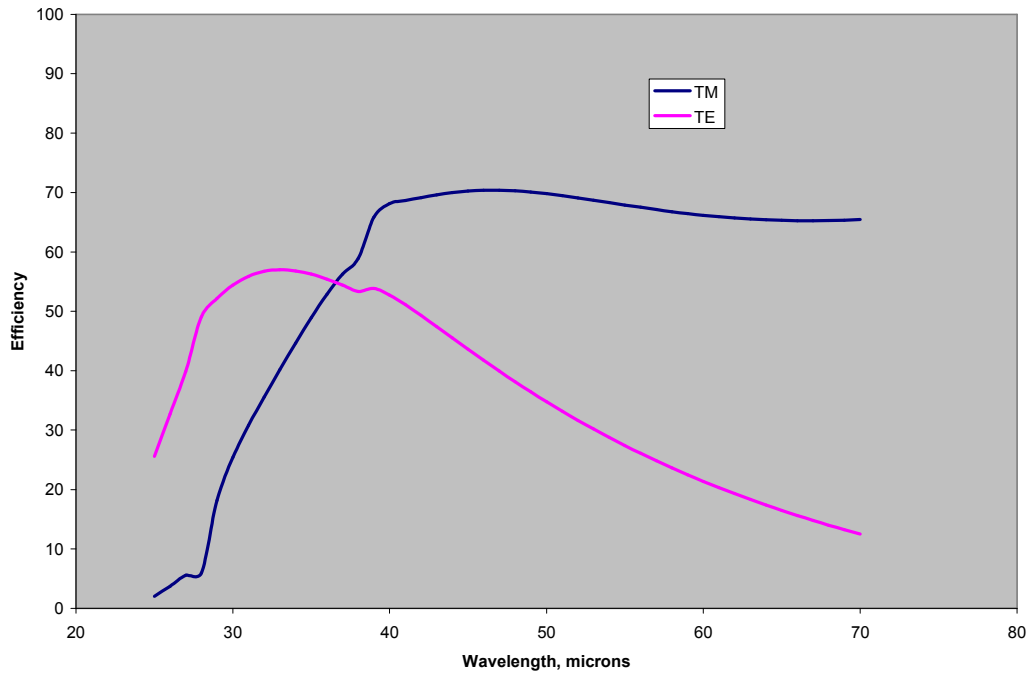


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Theoretical Efficiency Curve

Reference 510 47	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	20
Spectral Range (nm)	
Blaze Wavelength (μm)	45
Blaze Angle (deg)	26°45'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

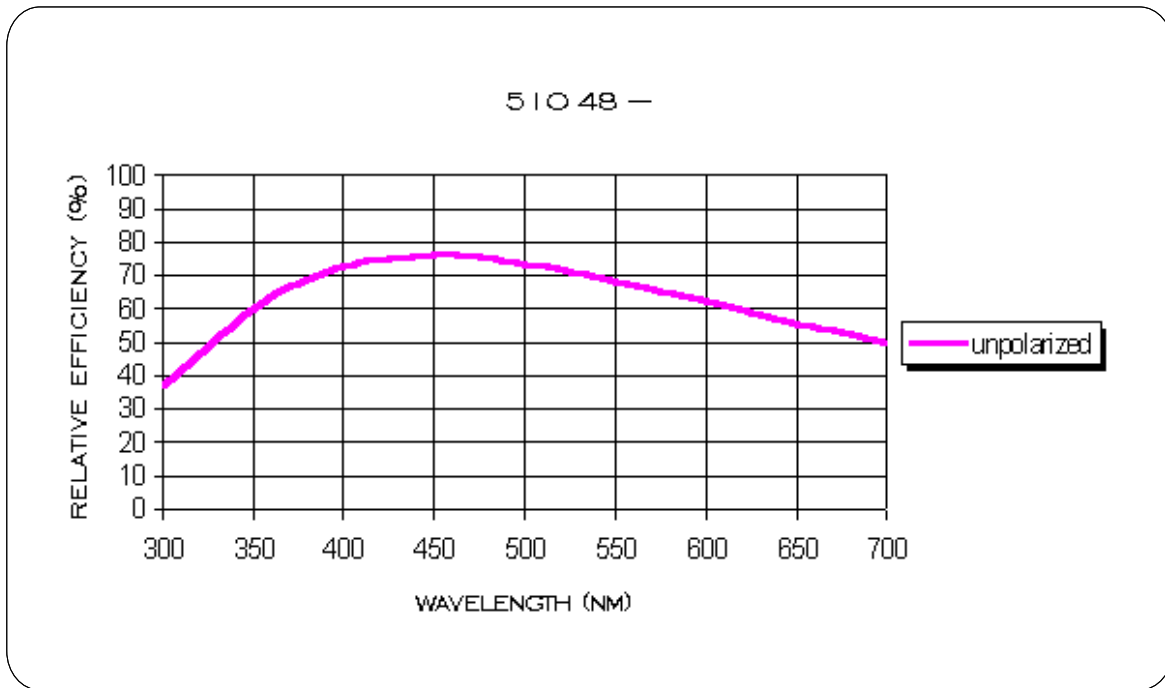


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Spectral Efficiency Curve

Reference 510 48	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	100
Spectral Range (nm)	
Blaze Wavelength (nm)	450
Blaze Angle (deg)	1°17'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

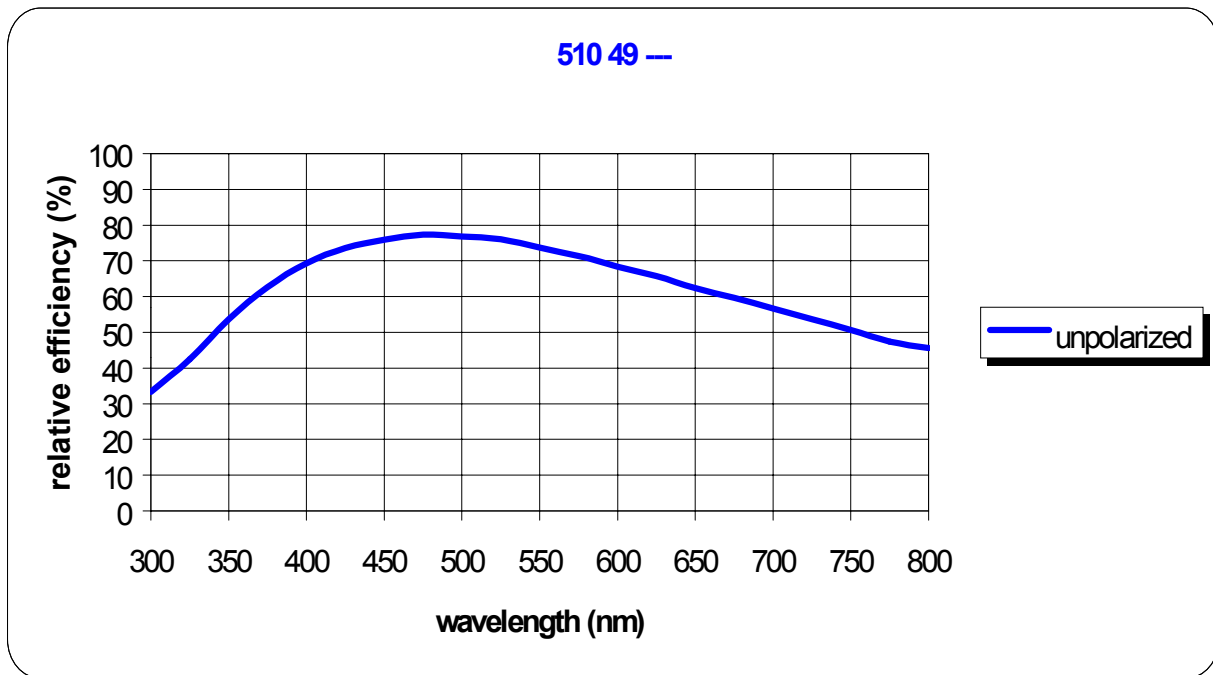


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Spectral Efficiency Curve

Reference 510 49	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	2°09'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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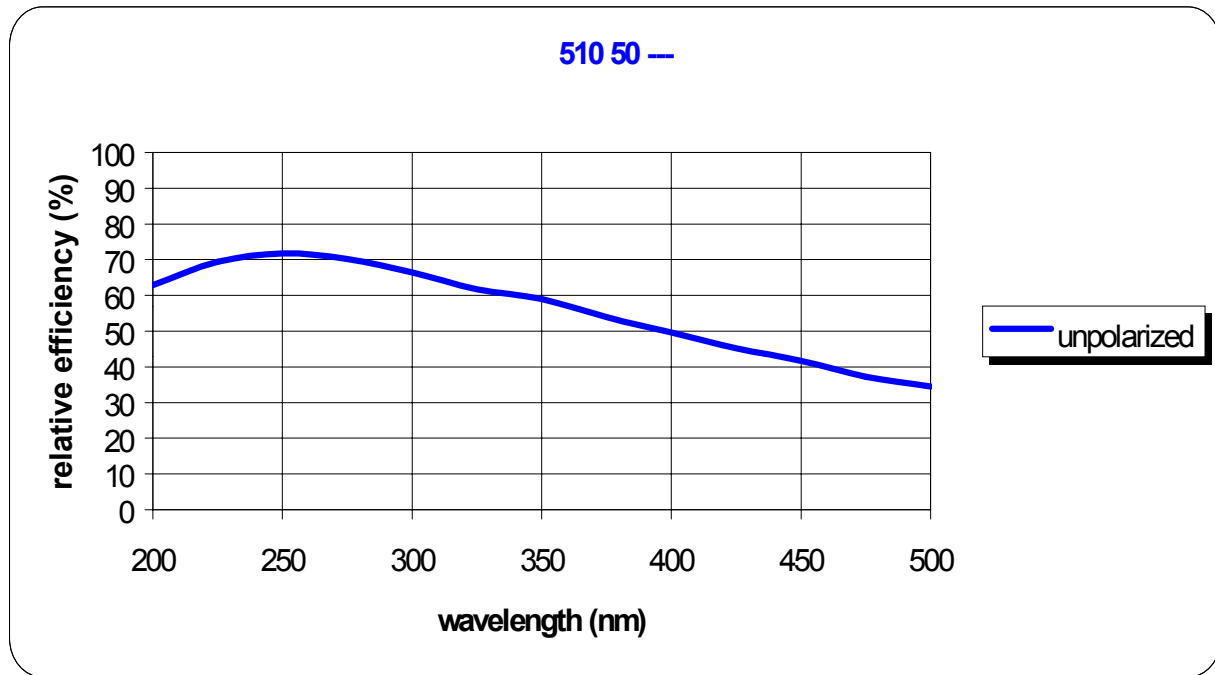
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Spectral Efficiency Curve

Reference 510 50	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	300
Spectral Range (nm)	
Blaze Wavelength (nm)	250
Blaze Angle (deg)	2°09'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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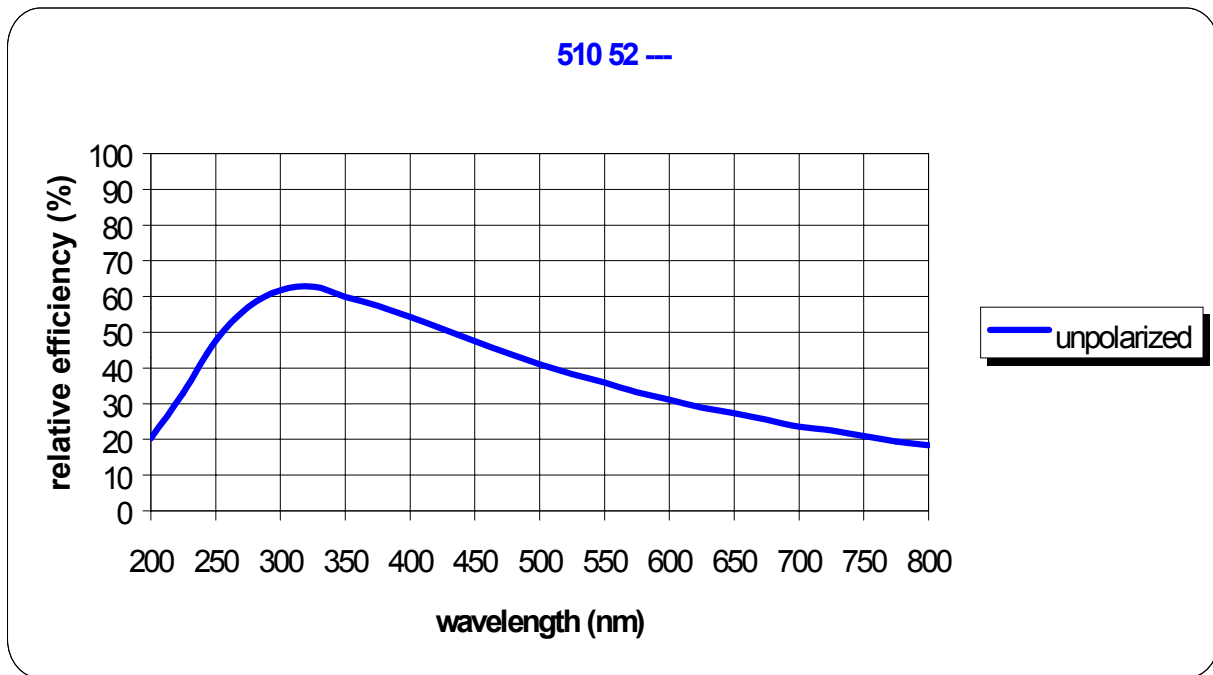
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Spectral Efficiency Curve

Reference 510 52	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	147
Spectral Range (nm)	
Blaze Wavelength (nm)	300
Blaze Angle (deg)	1°16'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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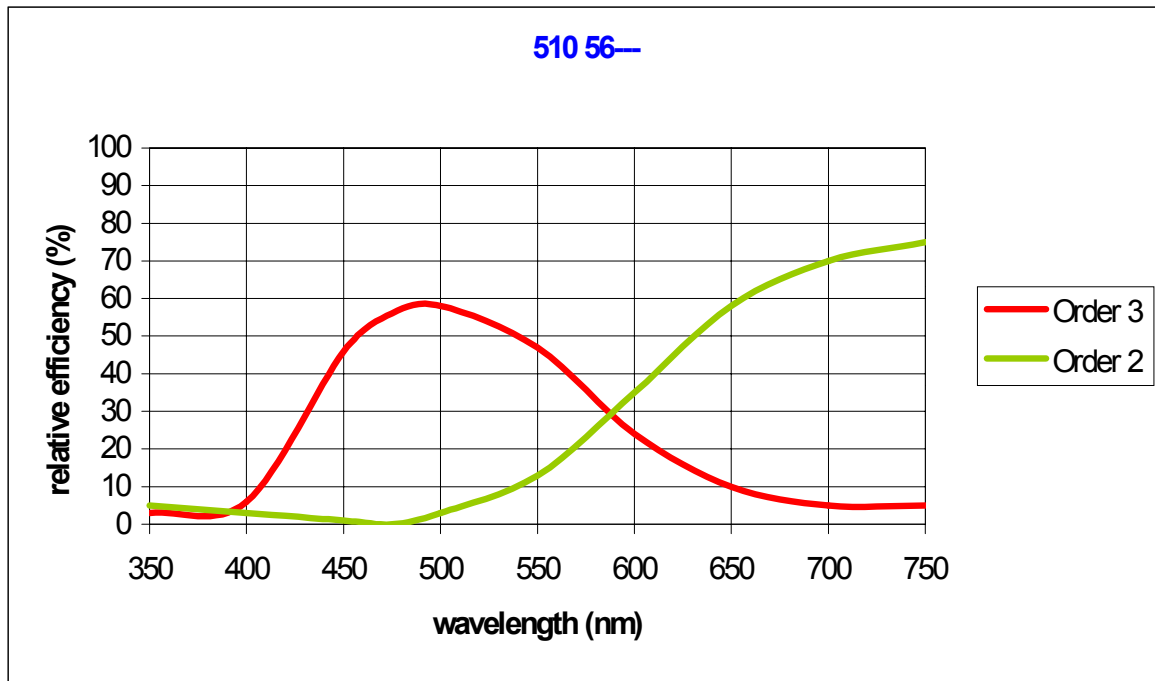
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Spectral Efficiency Curve

Reference 510 56	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	75
Spectral Range (nm)	
Blaze Wavelength (nm)	1500
Blaze Angle (deg)	3°20'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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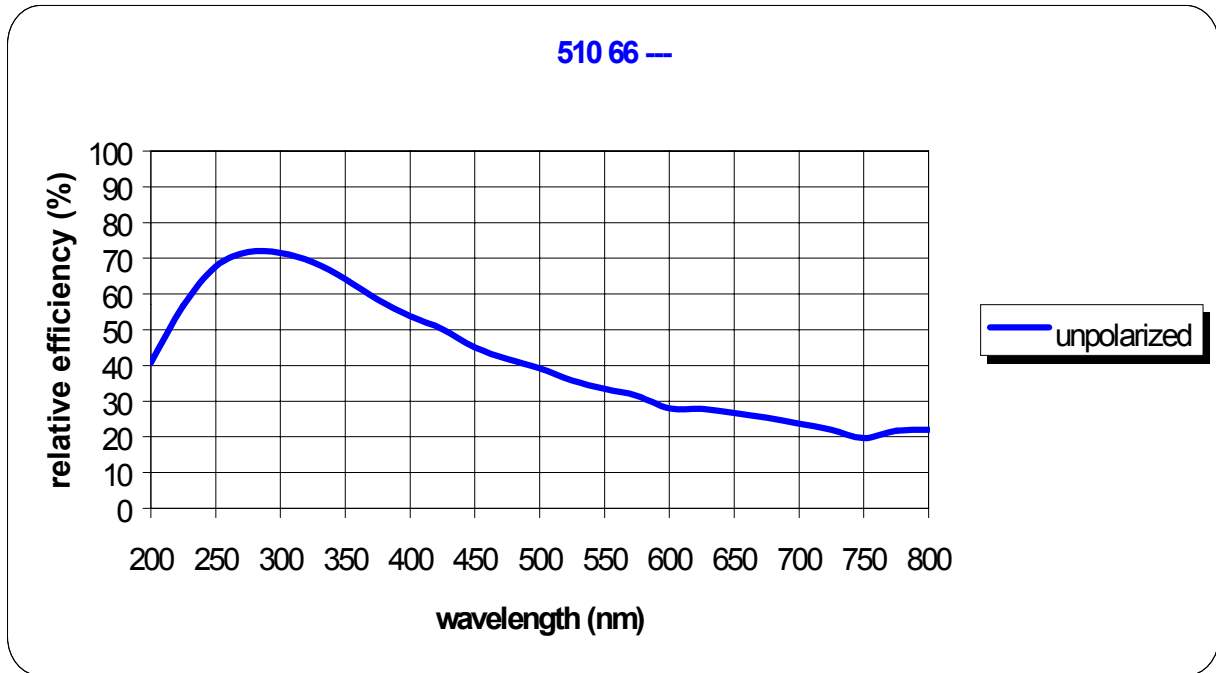
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Spectral Efficiency Curve

Reference 510 66	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	275
Blaze Angle (deg)	4°44'
Configuration	Quasi-littrow

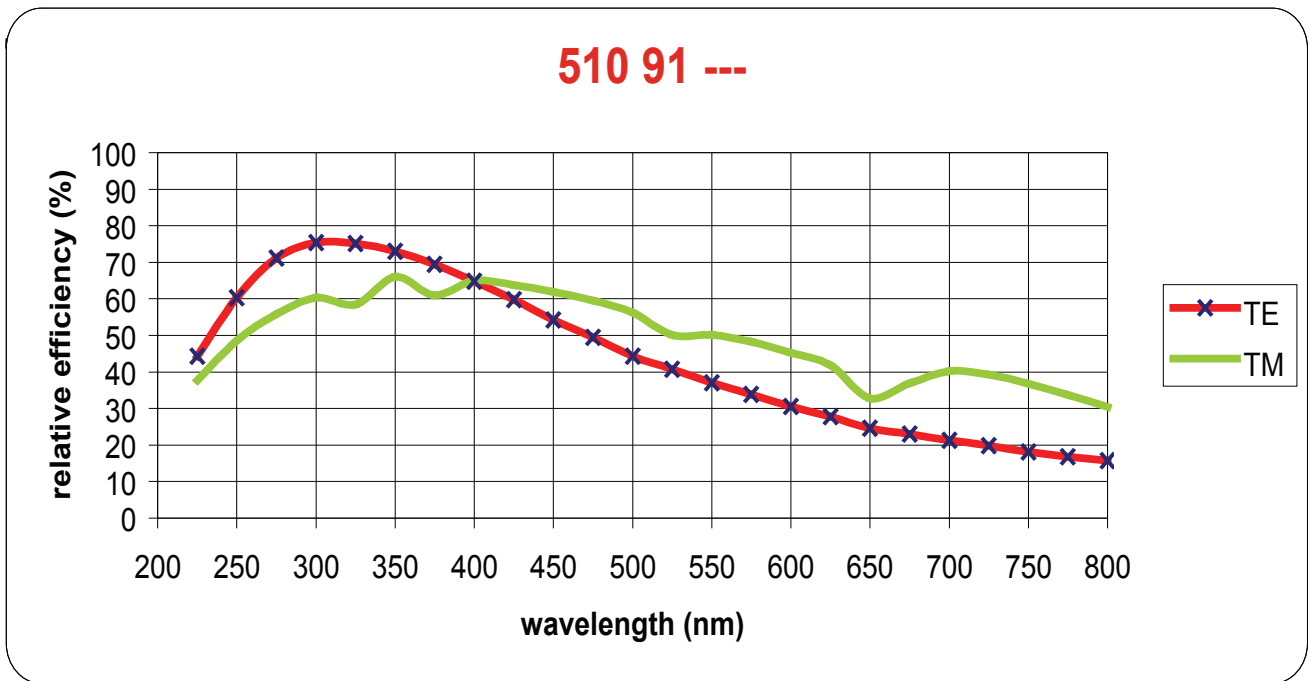


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 91	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	900
Spectral Range (nm)	
Blaze Wavelength (nm)	350
Blaze Angle (deg)	9°00'
Configuration	Quasi-littrow

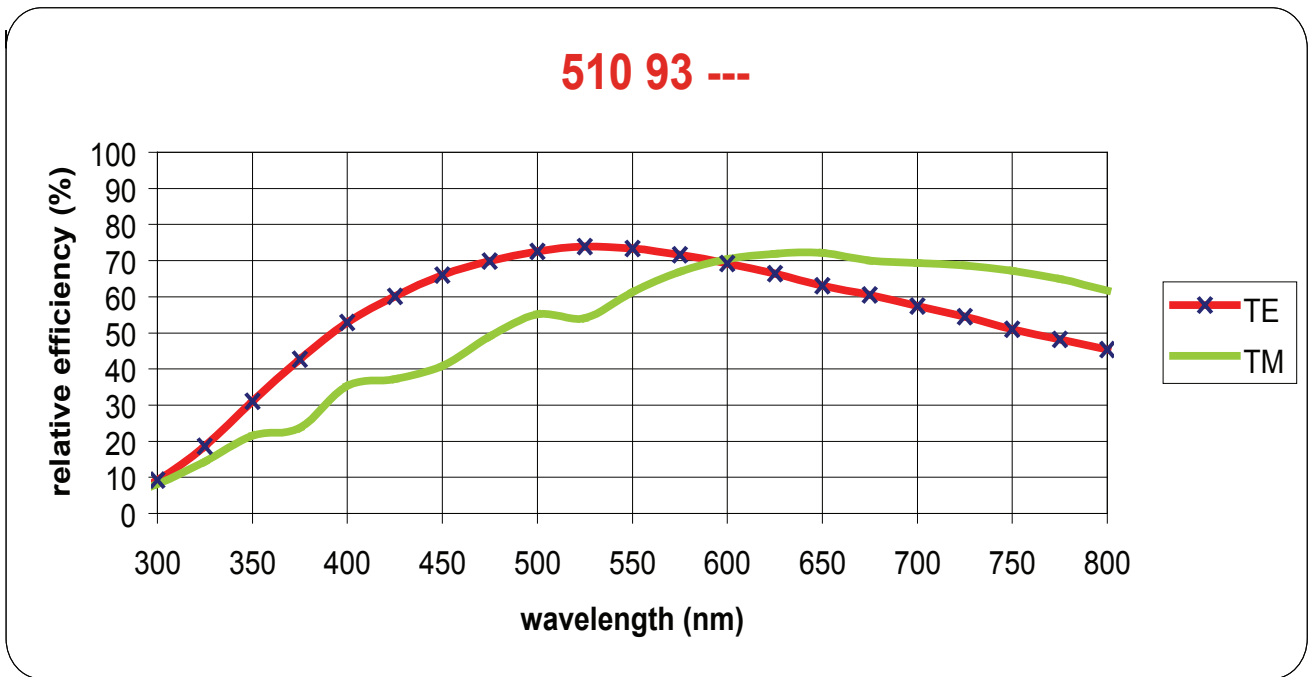


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 510 93	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	900
Spectral Range (nm)	
Blaze Wavelength (nm)	550
Blaze Angle (deg)	14°30'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

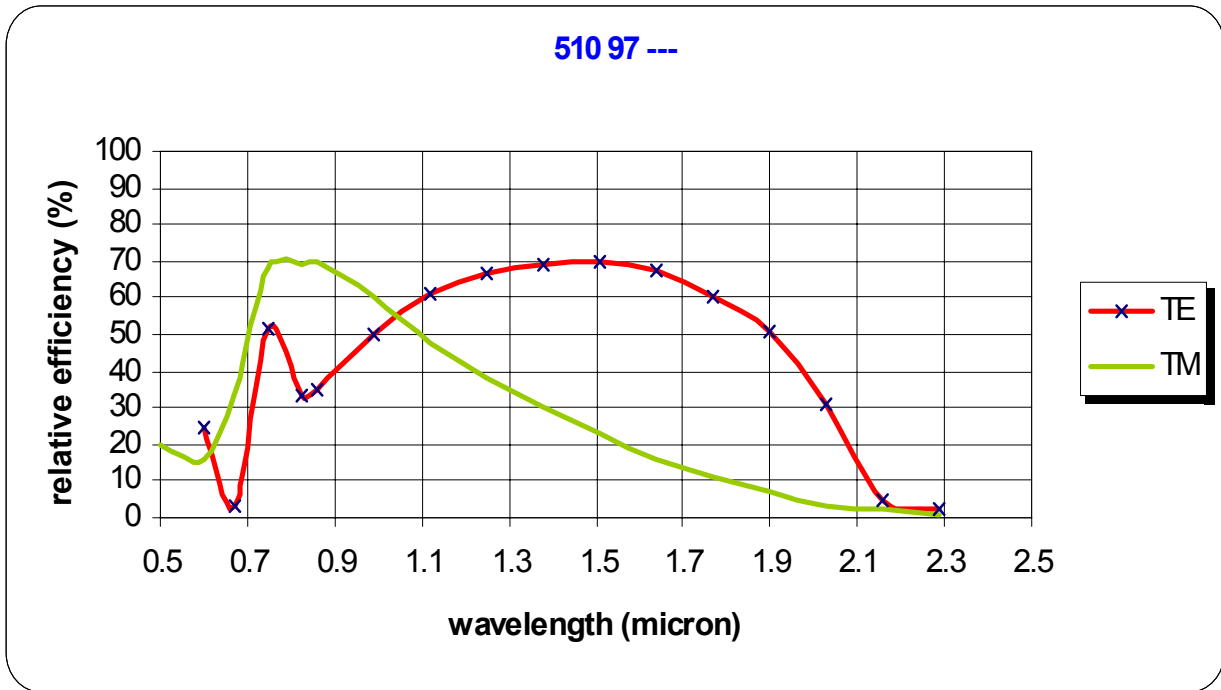


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Spectral Efficiency Curve

Reference 510 97	
Grating Type	Plane Mechanically Ruled Grating
Groove Density (gr/mm)	900
Spectral Range (nm)	
Blaze Wavelength (nm)	1500
Blaze Angle (deg)	42°30'
Configuration	Quasi-littrow

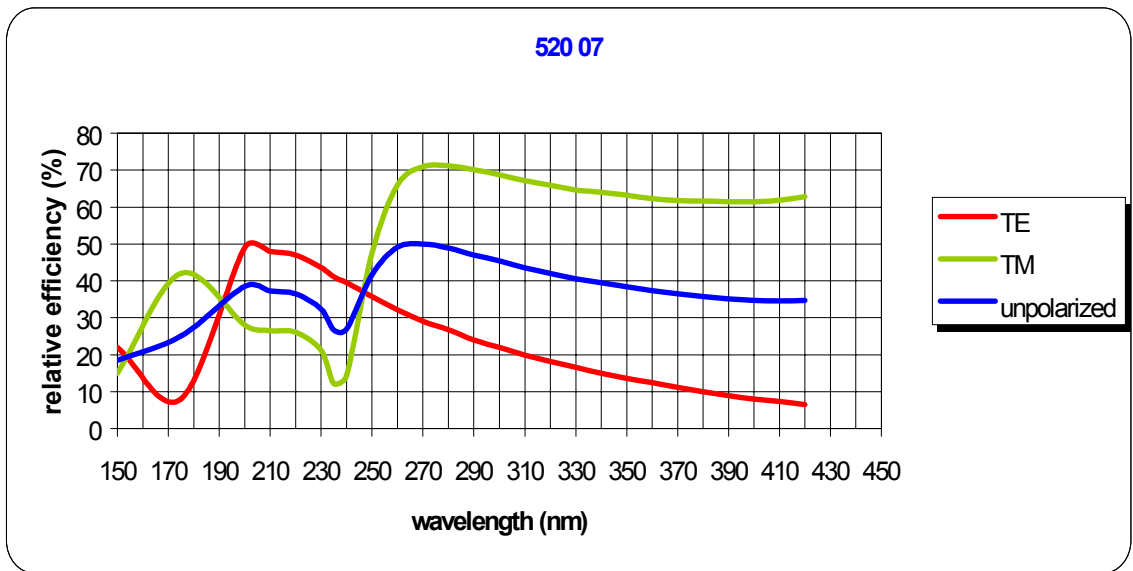


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 520 07	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	3600
Spectral Range (nm)	150-450
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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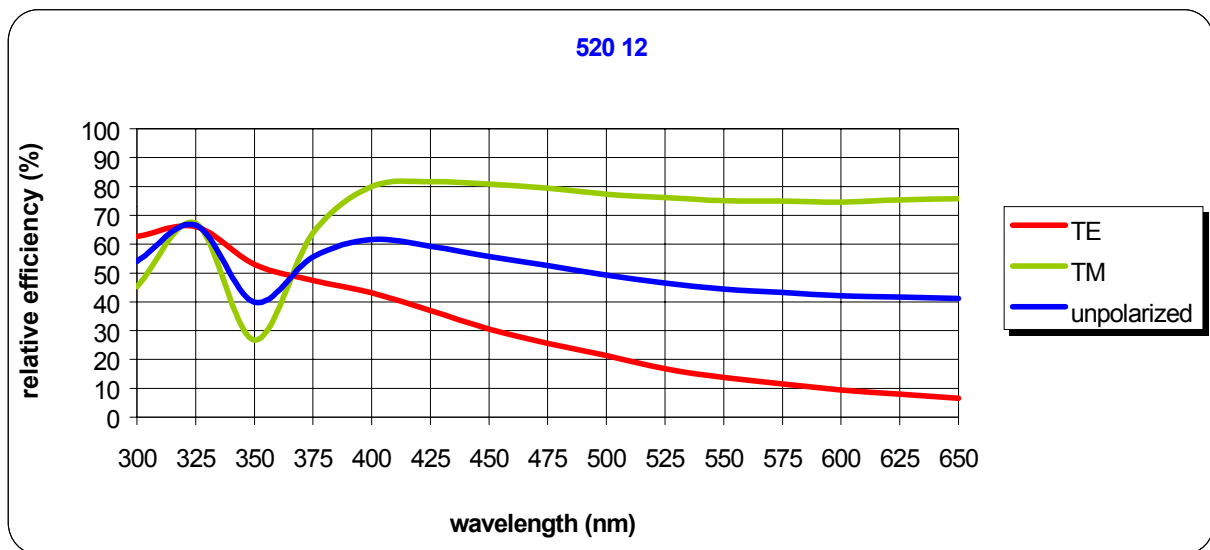
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Spectral Efficiency Curve

Reference 520 12	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2400
Spectral Range (nm)	300 – 650
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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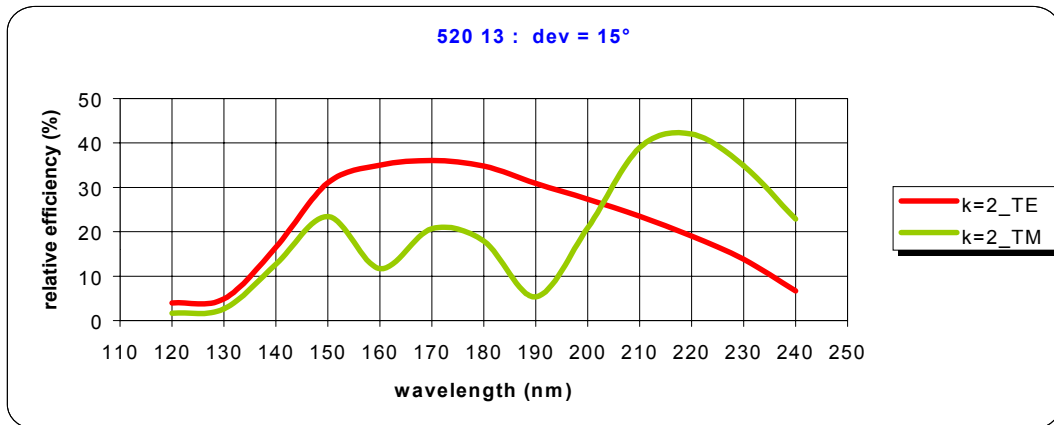
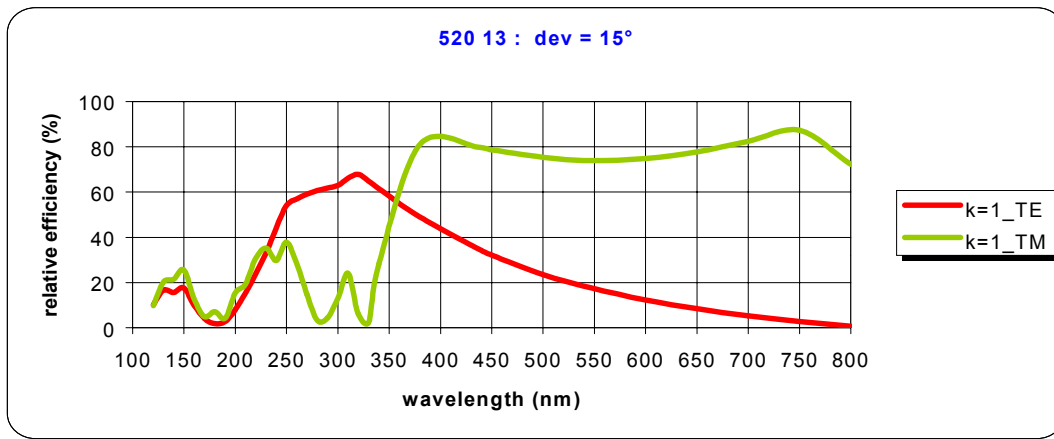
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 520 13	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2400
Spectral Range (nm)	K= 1 : 170 – 500 K=2 :
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Dev =15°



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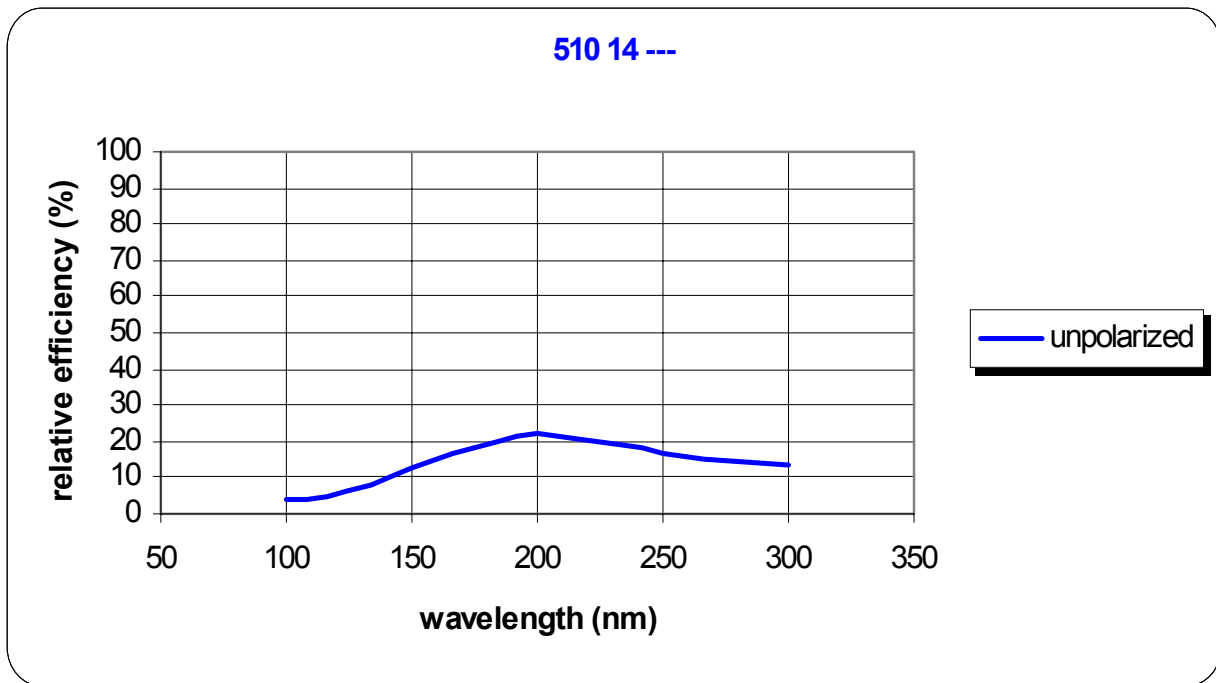
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Spectral Efficiency Curve

Reference 520 14	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2400
Spectral Range (nm)	100 – 300
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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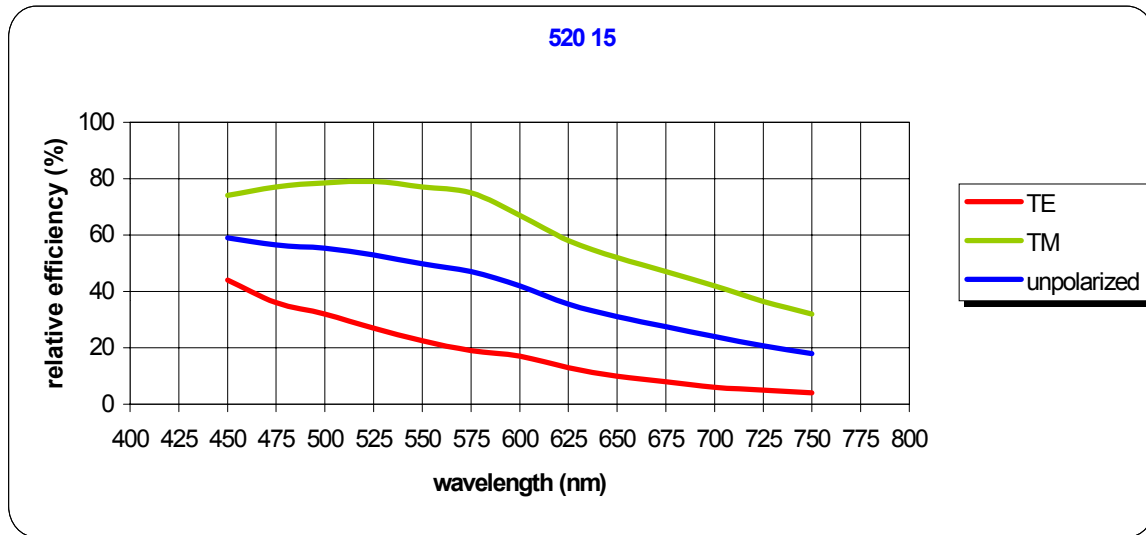
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Spectral Efficiency Curve

Reference 520 15	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2000
Spectral Range (nm)	450 - 750
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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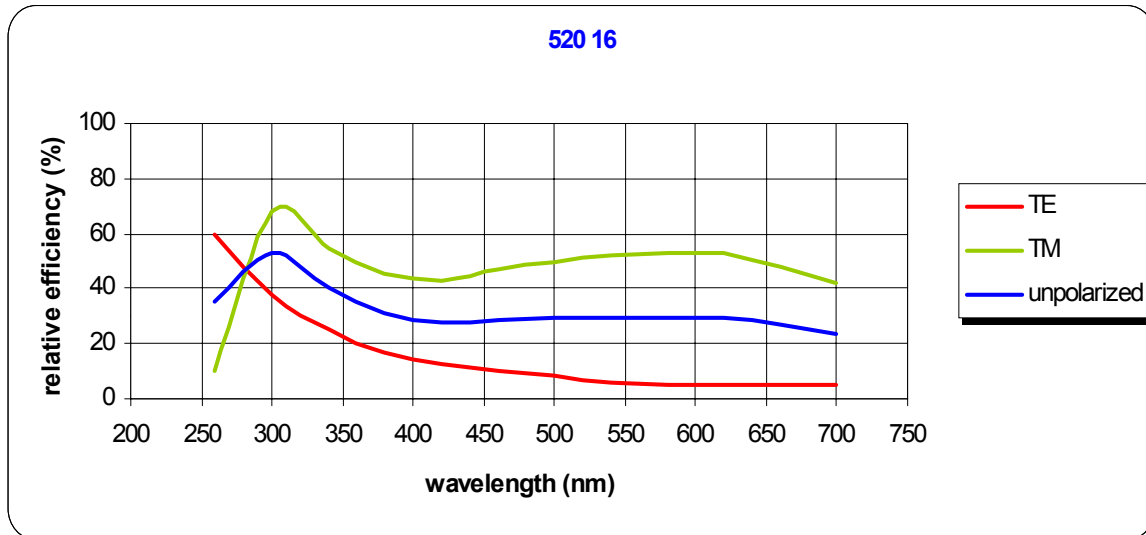
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Spectral Efficiency Curve

Reference 520 16	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2000
Spectral Range (nm)	200 - 700
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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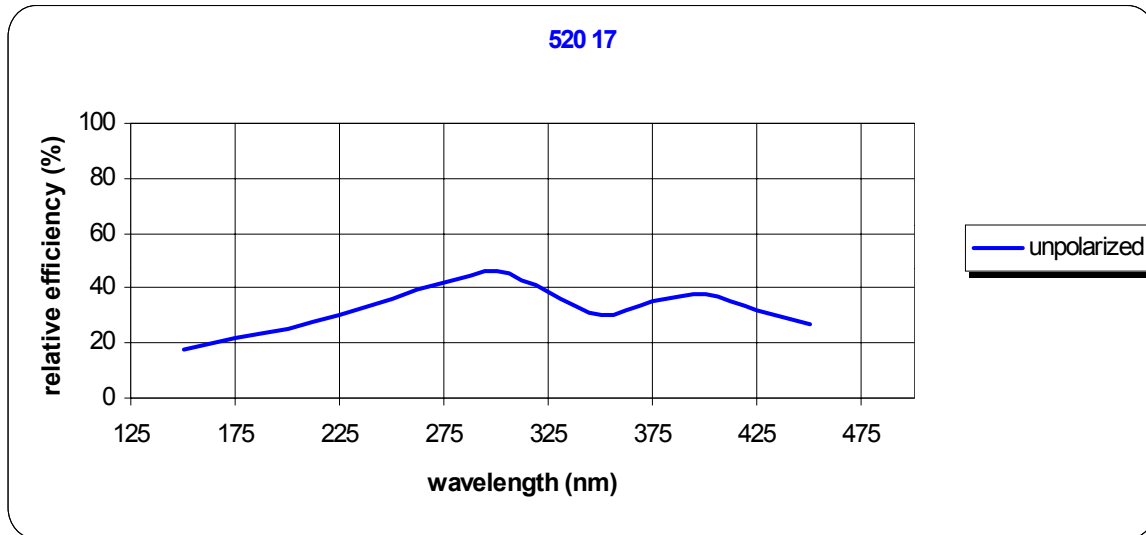
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Spectral Efficiency Curve

Reference 520 17	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	2000
Spectral Range (nm)	150 - 450
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

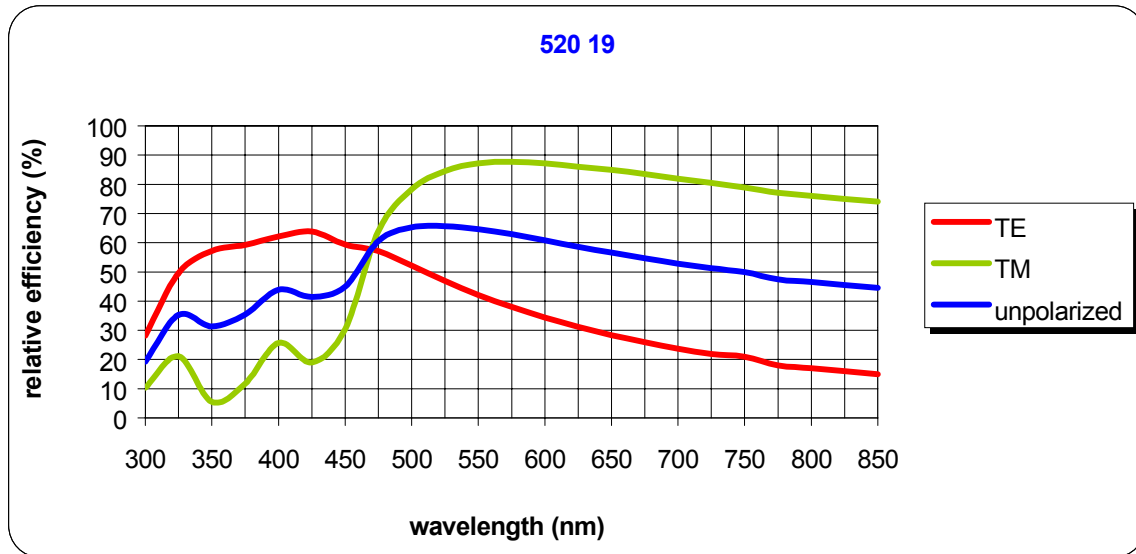


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Spectral Efficiency Curve

Reference 520 19	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	450 – 850
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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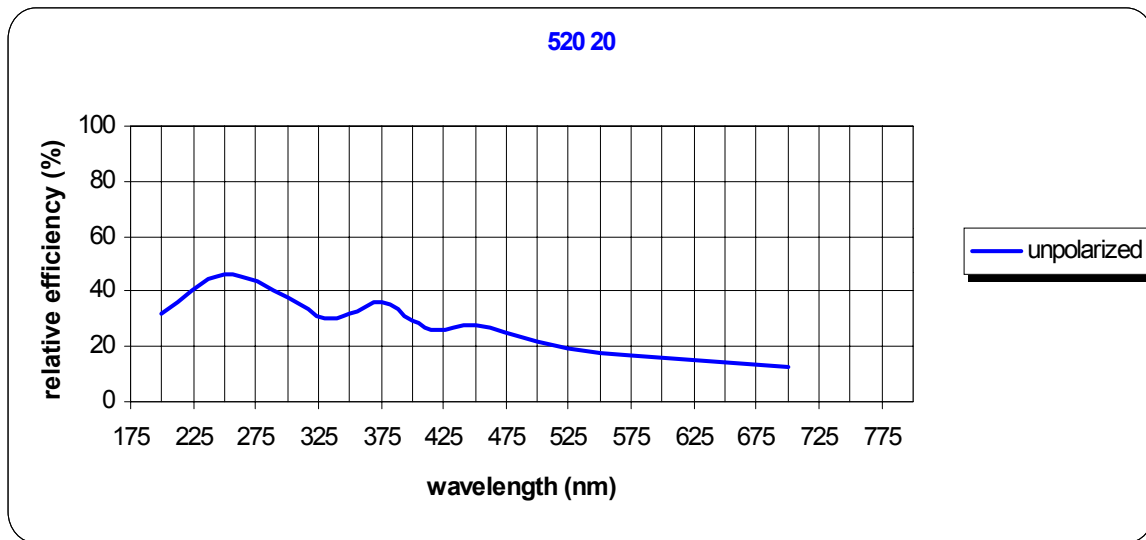
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 520 20	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	200 - 700
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

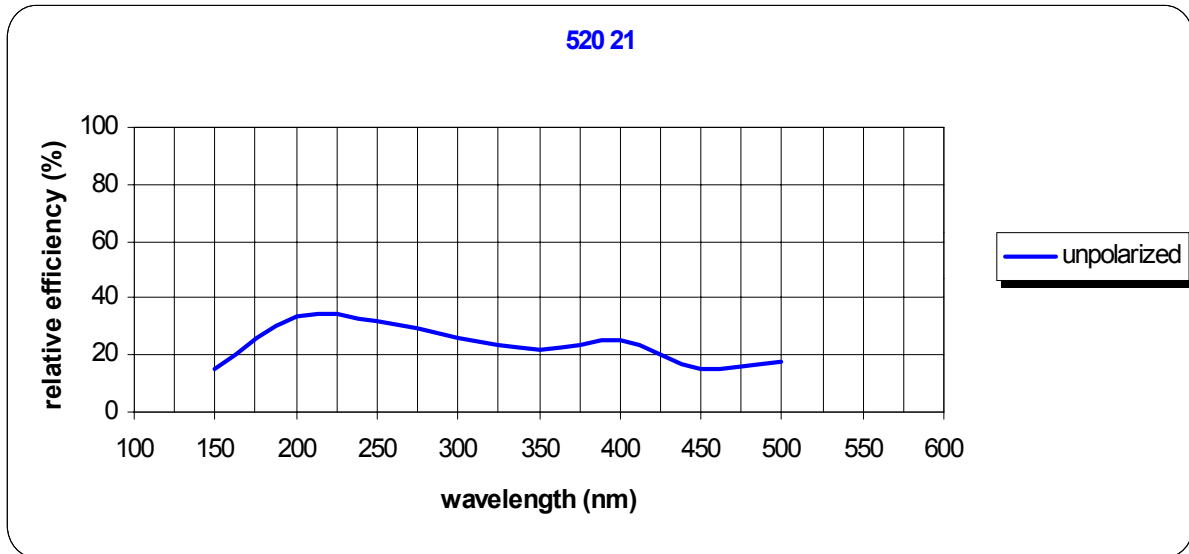


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Spectral Efficiency Curve

Reference 520 21	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1800
Spectral Range (nm)	150 - 450
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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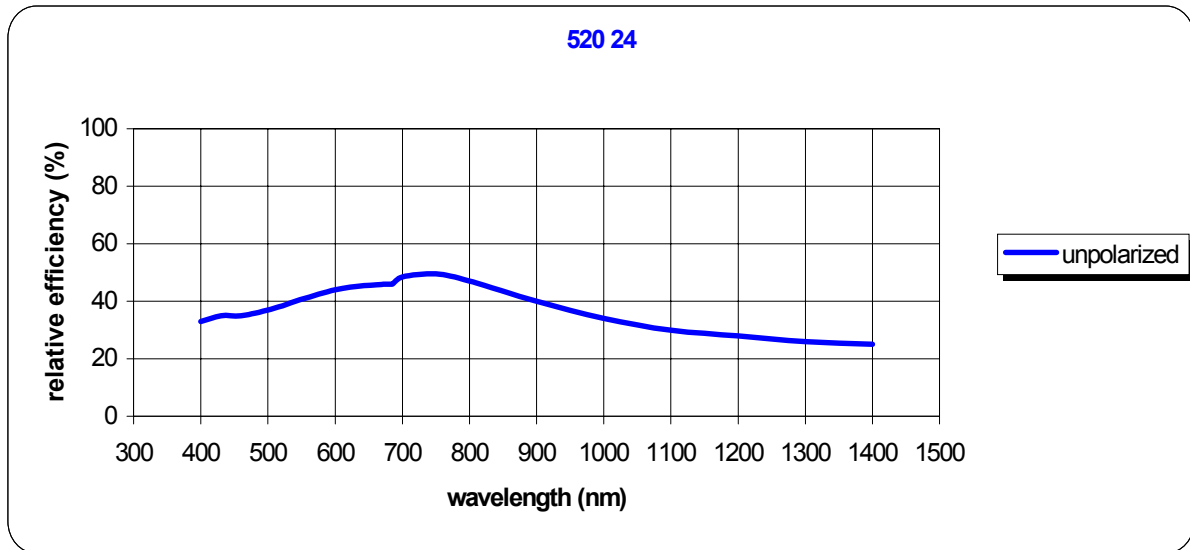
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Japan: +81 (0)3 6206 4721
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Spectral Efficiency Curve

Reference 520 24	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	400 - 1300
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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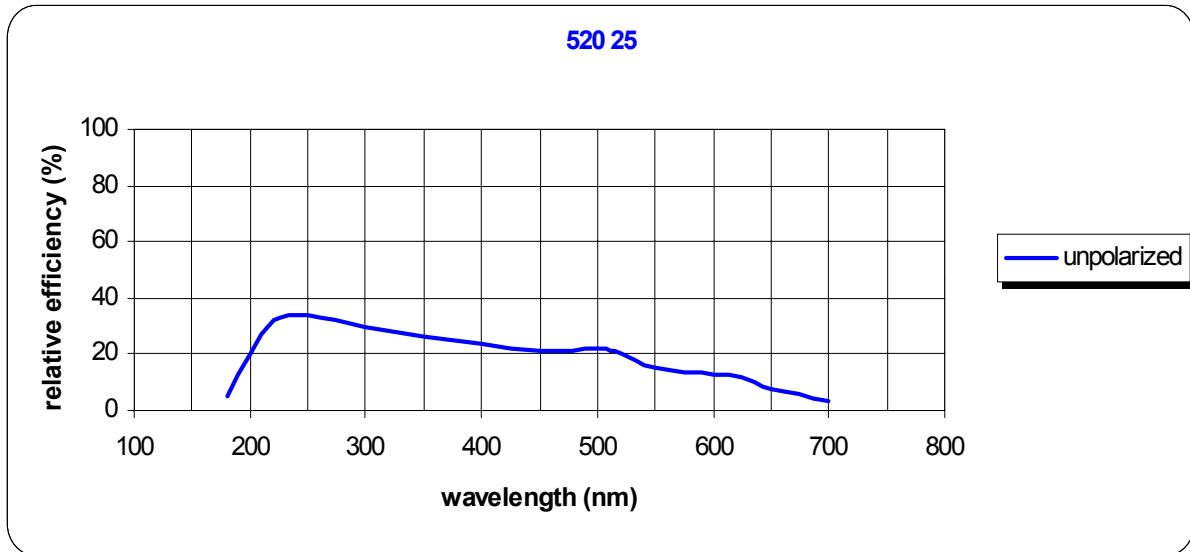
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 520 25	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	190 – 700
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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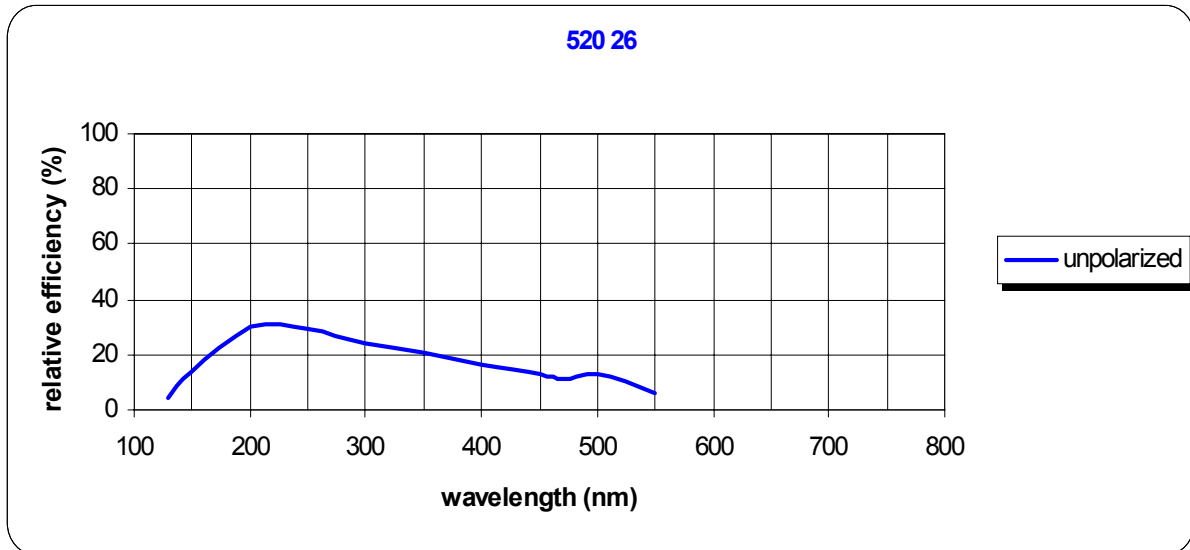
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 520 26	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	1200
Spectral Range (nm)	150 – 450
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

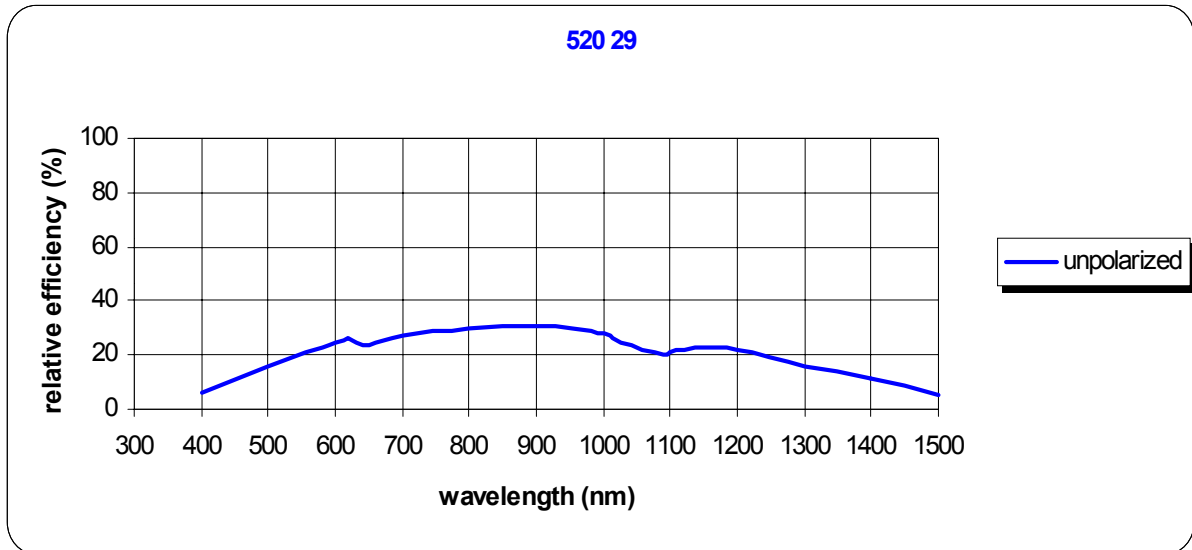


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Spectral Efficiency Curve

Reference 520 29	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	400 – 1300
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

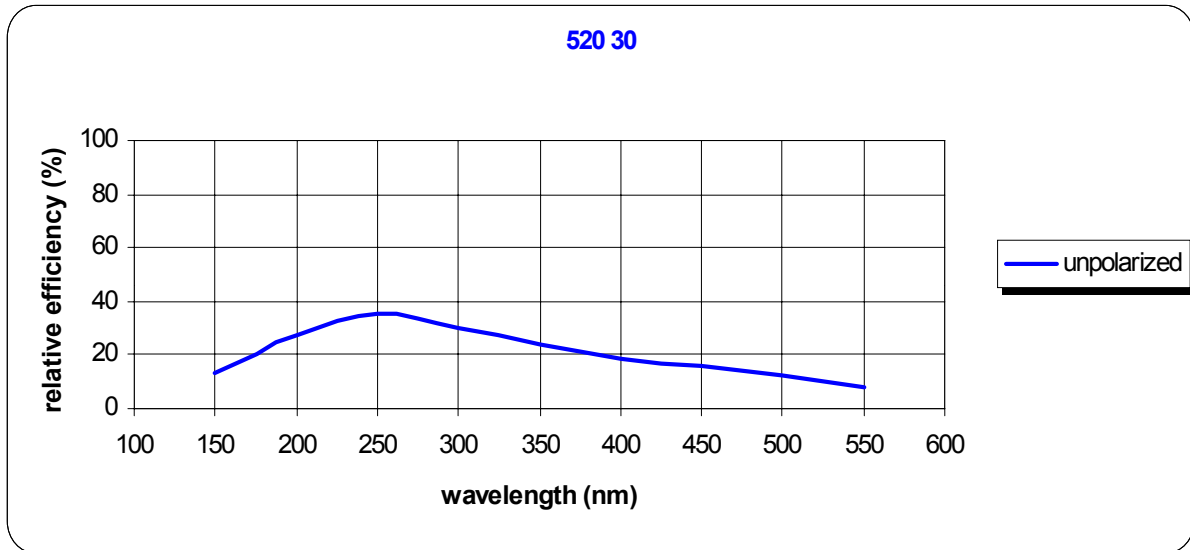


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Spectral Efficiency Curve

Reference 520 30	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	600
Spectral Range (nm)	150 – 450
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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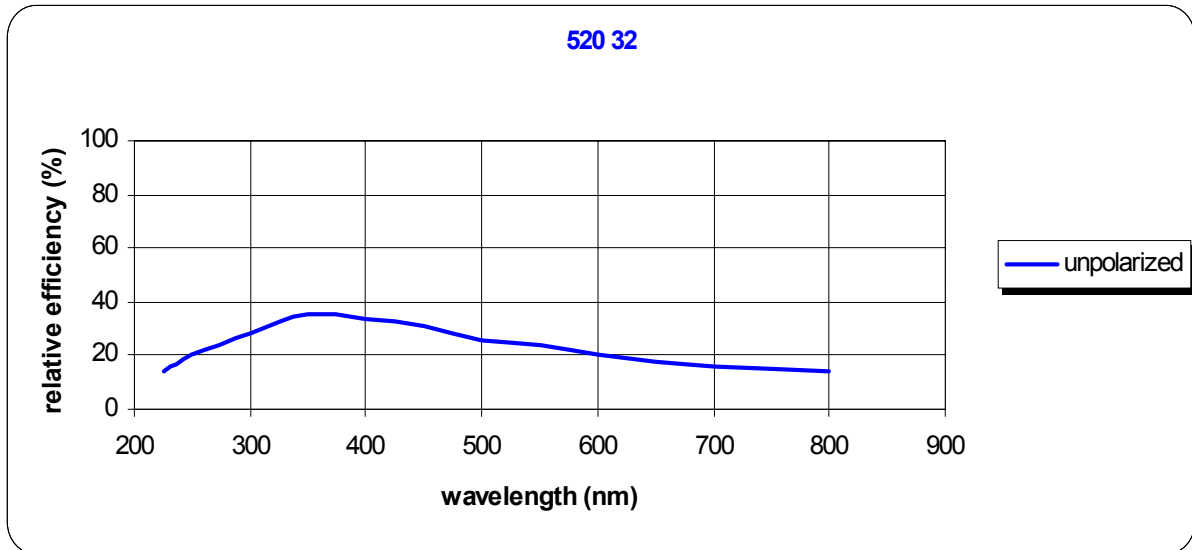
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Germany: +49 (0) 6251 8475 20
Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 520 32	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	250 – 800
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.

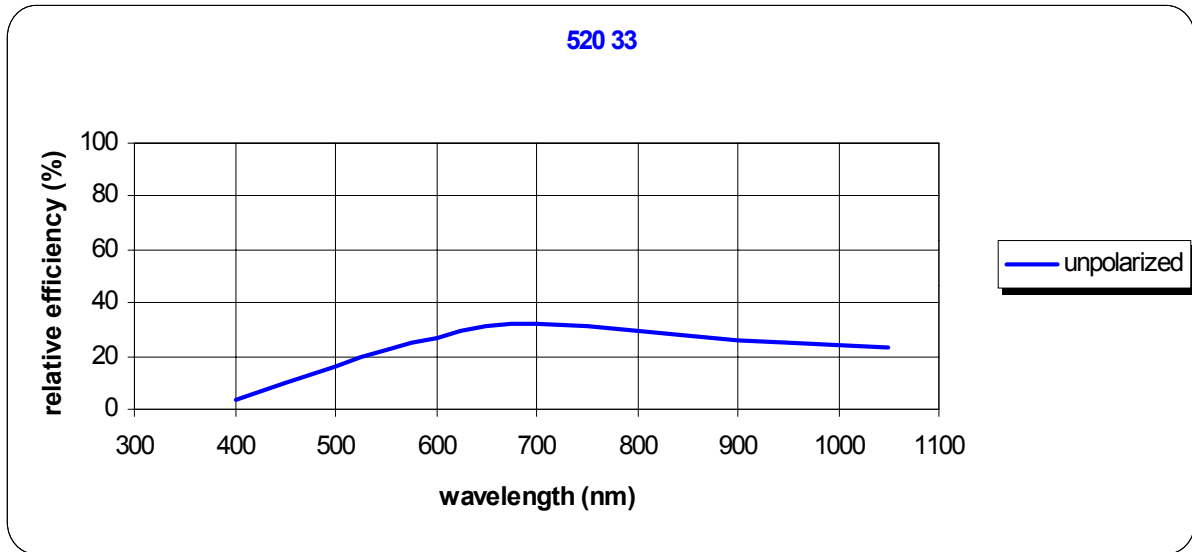


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Spectral Efficiency Curve

Reference 520 33	
Grating Type	Plane Holographic Grating
Groove Density (gr/mm)	150
Spectral Range (nm)	400 – 1200
Blaze Wavelength (nm)	
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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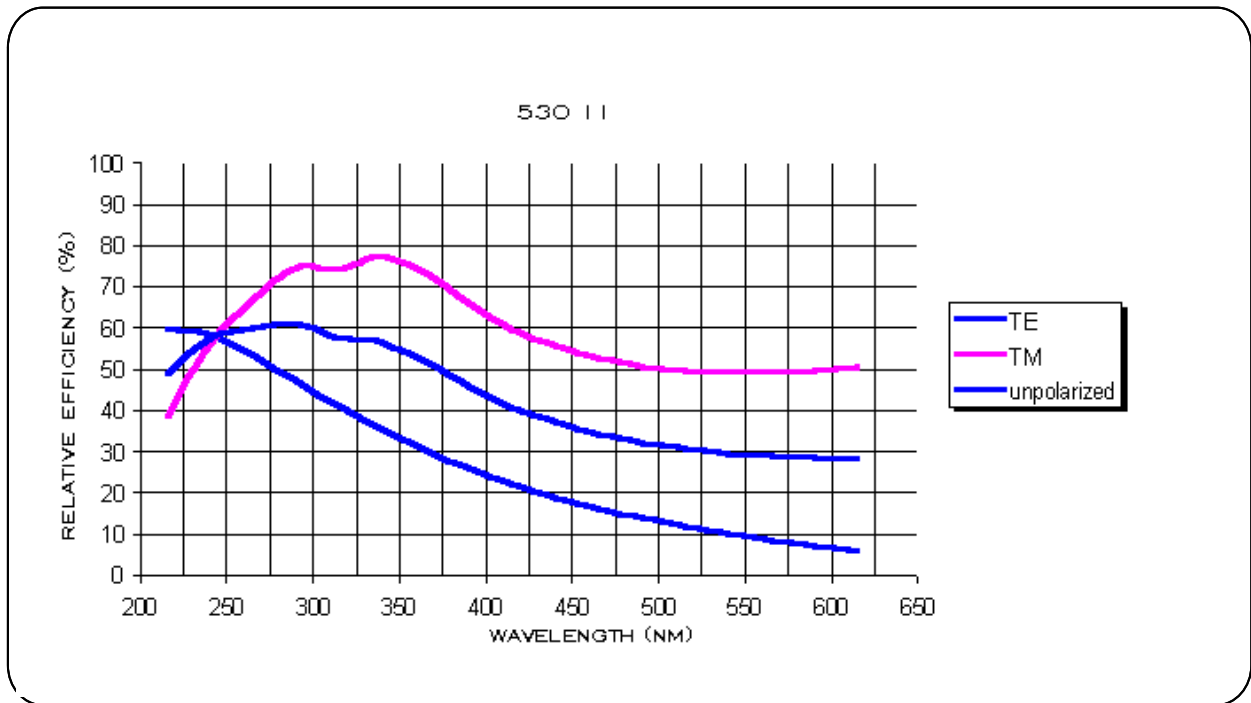
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 11	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	2400
Spectral Range (nm)	240 - 750
Blaze Wavelength (nm)	330
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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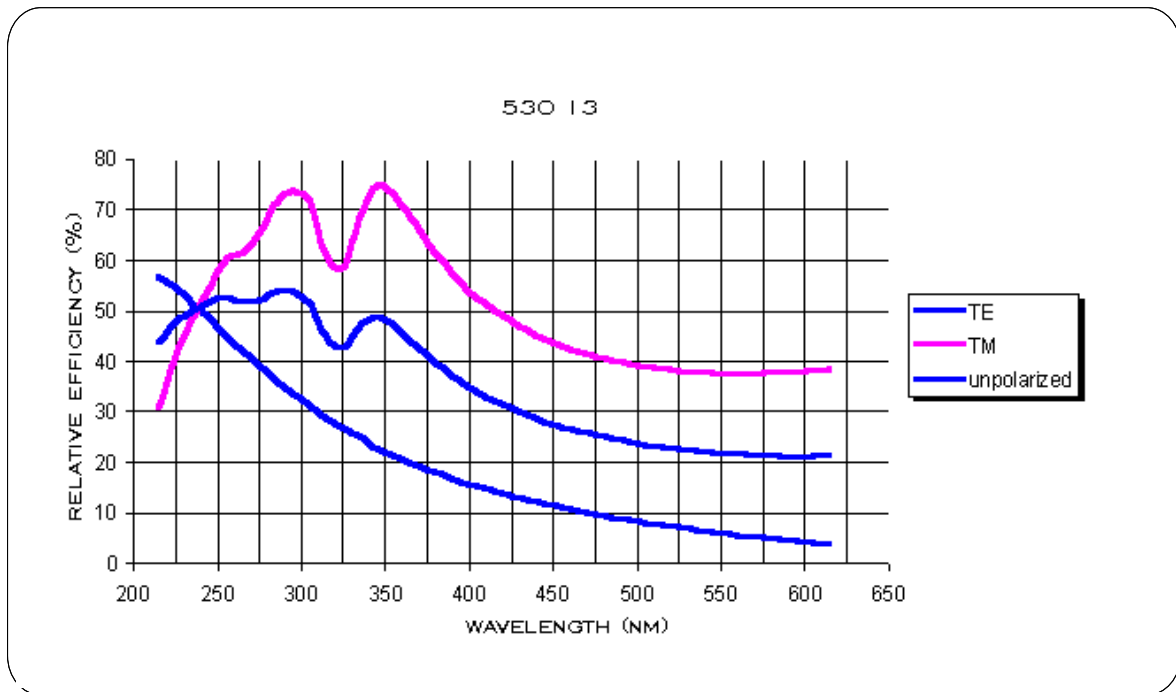
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 13	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	2400
Spectral Range (nm)	190 - 700
Blaze Wavelength (nm)	250
Blaze Angle (deg)	17.5
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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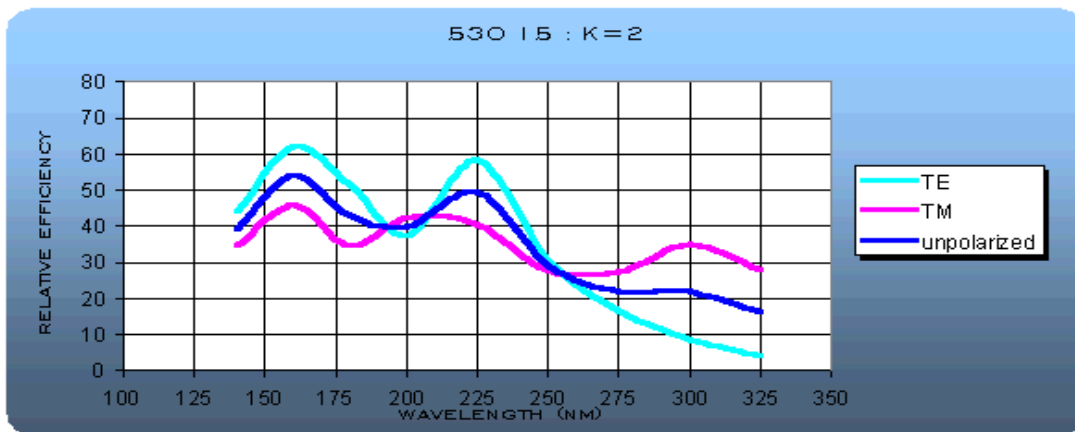
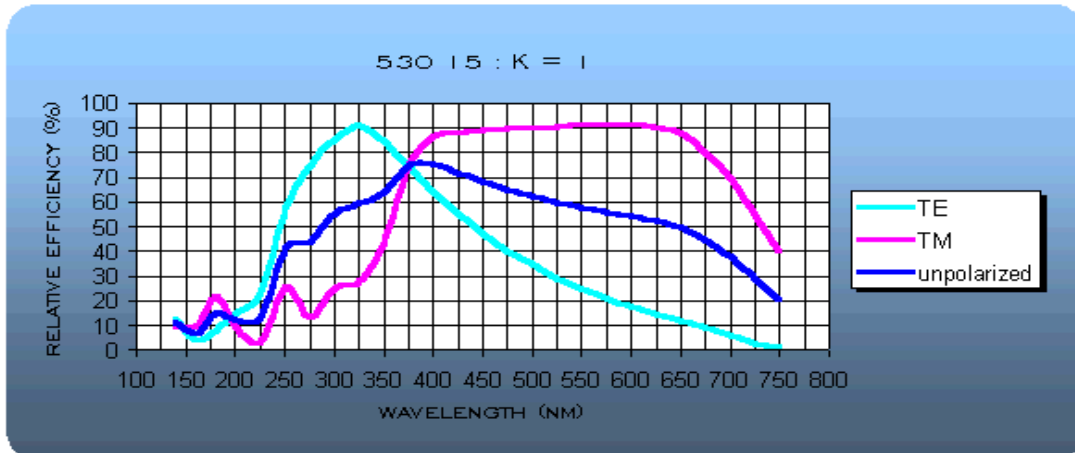
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 15	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	2400
Spectral Range (nm)	240 - 750
Blaze Wavelength (nm)	330
Blaze Angle (deg)	
Configuration	Quasi-littrow



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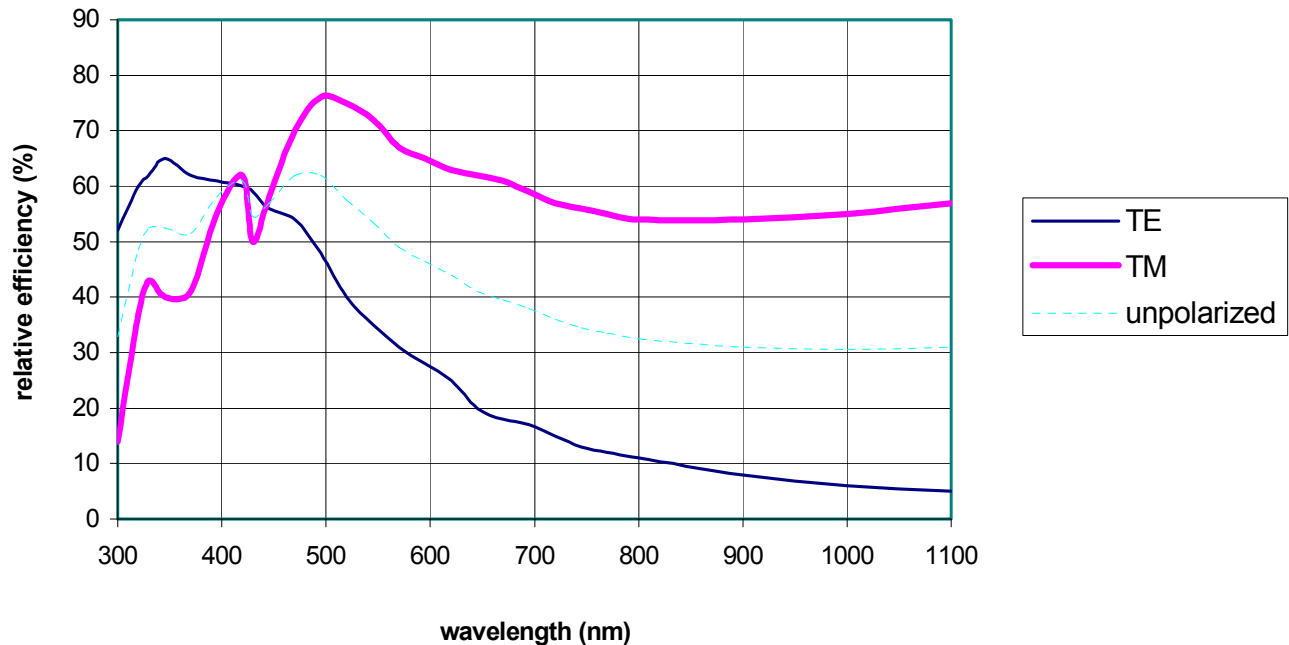
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 19	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1800
Spectral Range (nm)	300 - 1100
Blaze Wavelength (nm)	500
Blaze Angle (deg)	26.45°
Configuration	Quasi-littrow

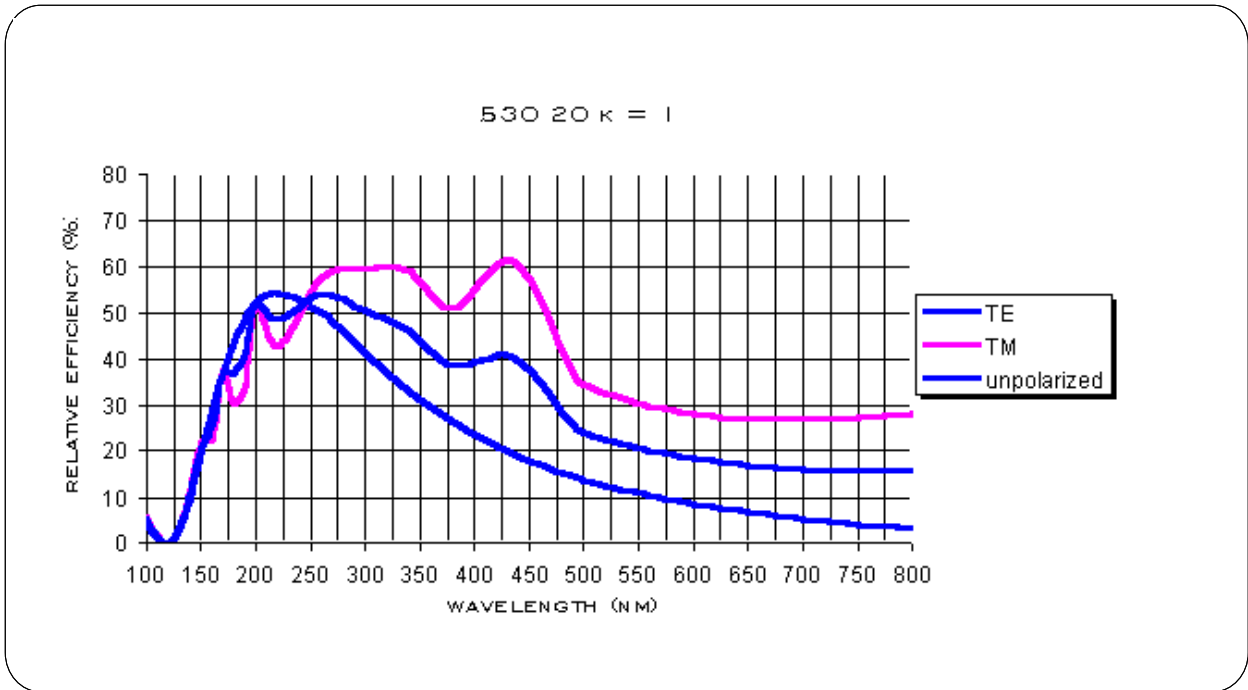


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 20	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1800
Spectral Range (nm)	190 - 700
Blaze Wavelength (nm)	250
Blaze Angle (deg)	
Configuration	Quasi-littrow

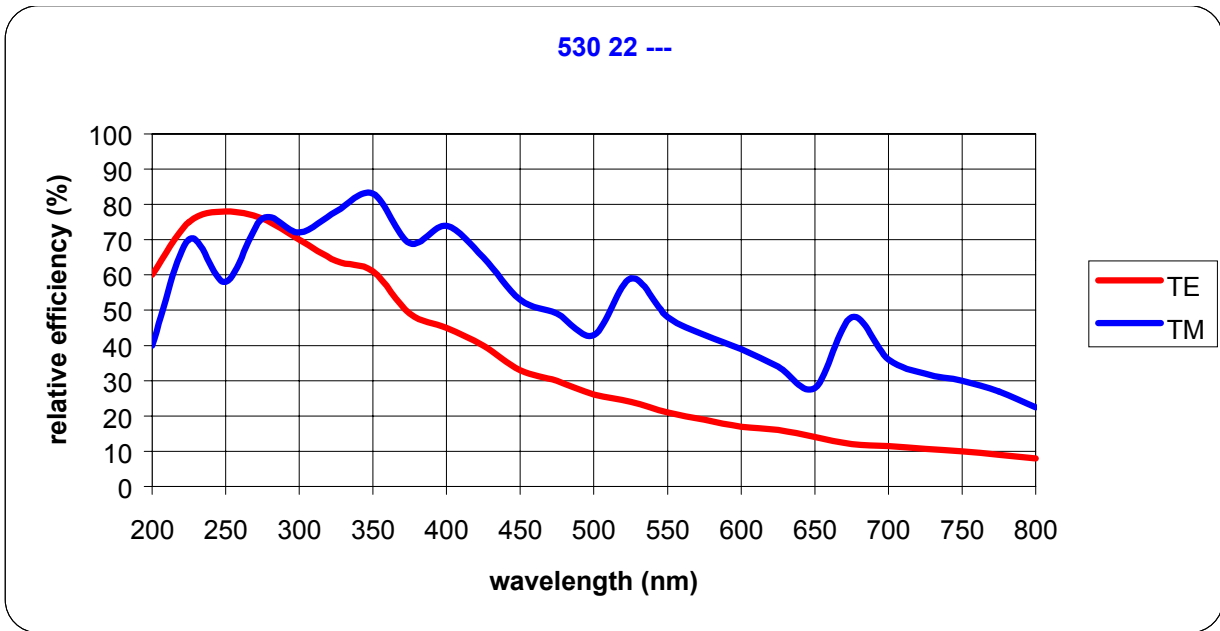


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 22	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	190-800
Blaze Wavelength (nm)	330
Blaze Angle (deg)	11.4°
Configuration	Quasi-littrow

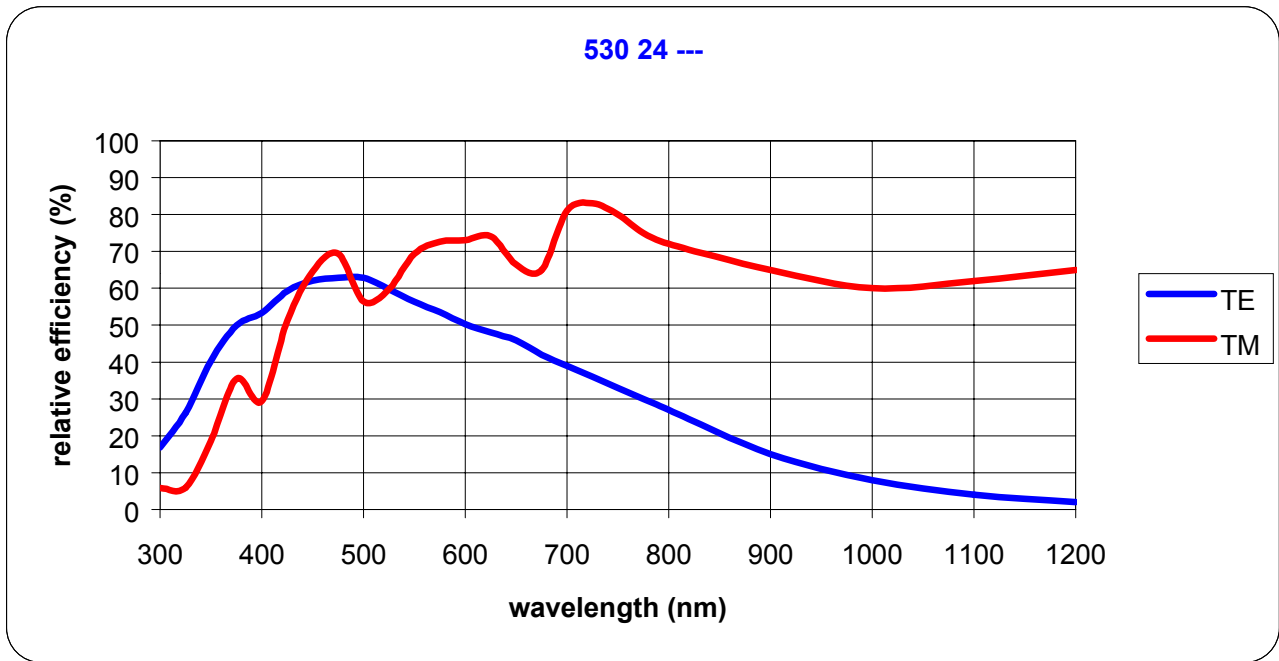


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 24	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	300-1200
Blaze Wavelength (nm)	500
Blaze Angle (deg)	17.45°
Configuration	Quasi-littrow

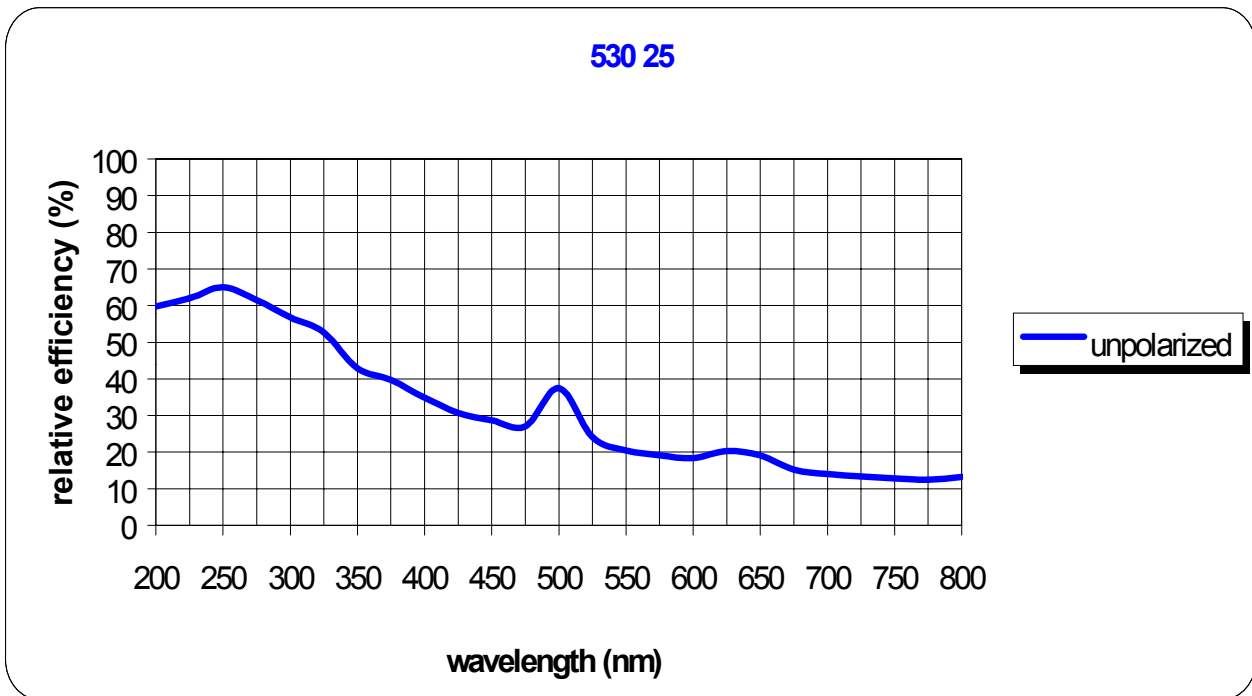


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 25	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	
Blaze Wavelength (nm)	250
Blaze Angle (deg)	8°37'
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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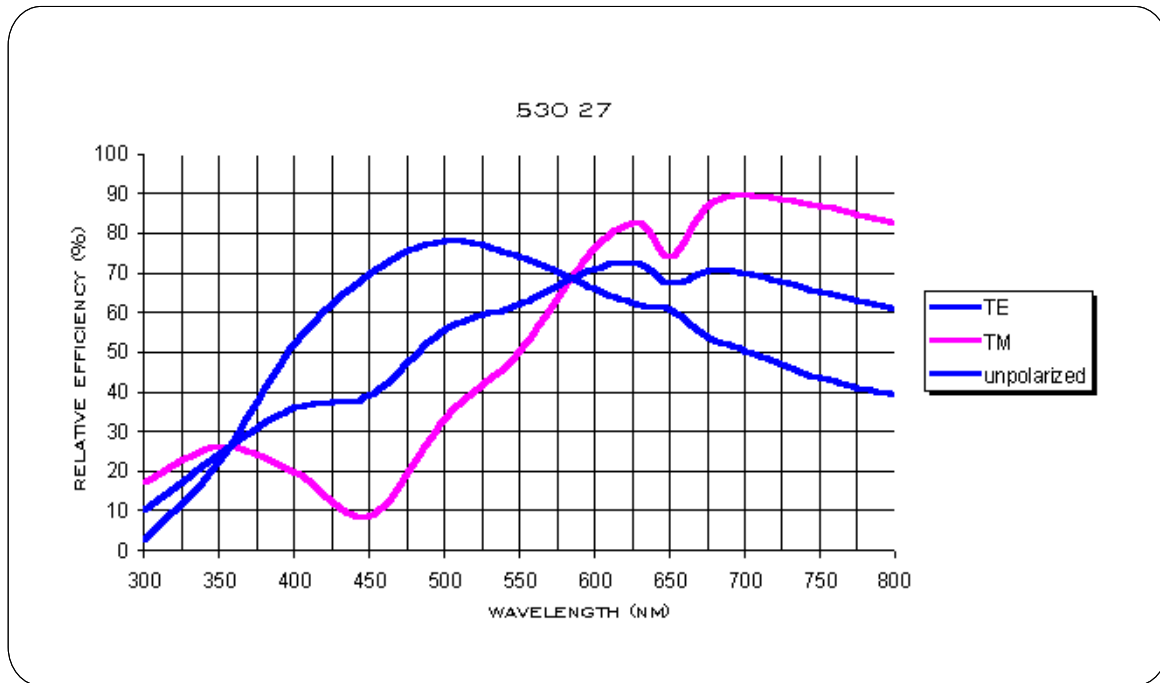
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Spectral Efficiency Curve

Reference 530 27	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	400 - 1300
Blaze Wavelength (nm)	630
Blaze Angle (deg)	
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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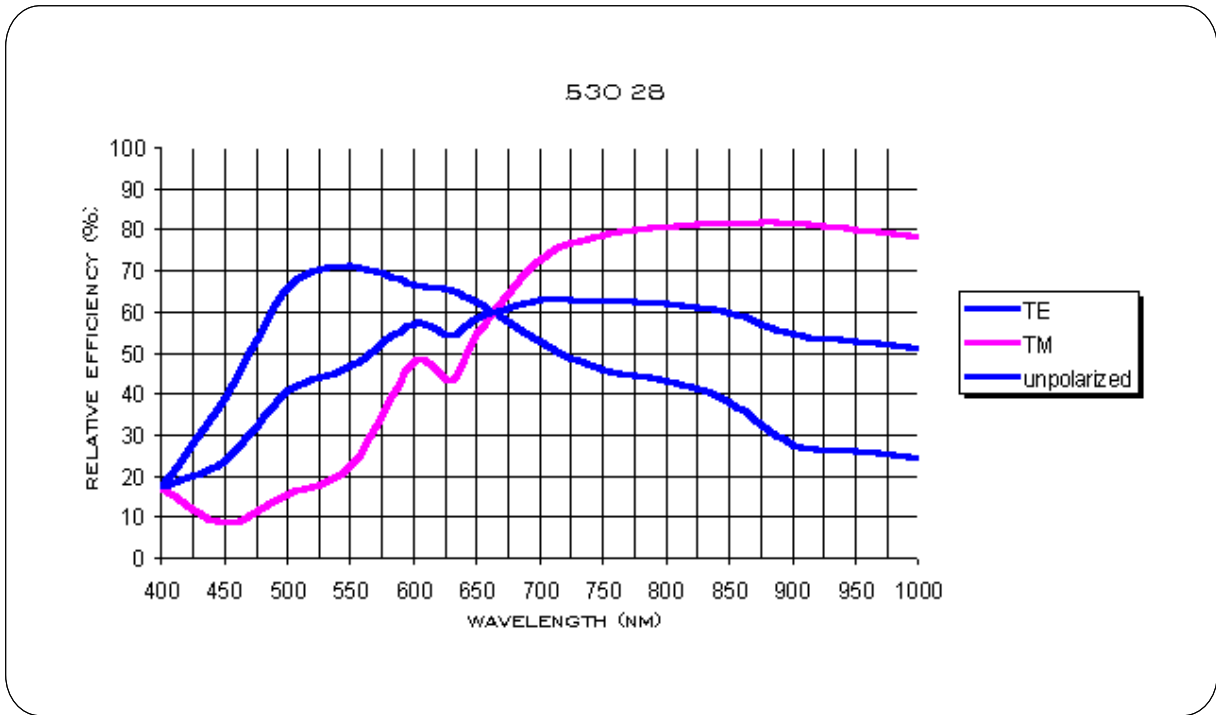
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China: +86 (0)21 6289 6060

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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 28	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	500 - 1500
Blaze Wavelength (nm)	750
Blaze Angle (deg)	
Configuration	Quasi-littrow

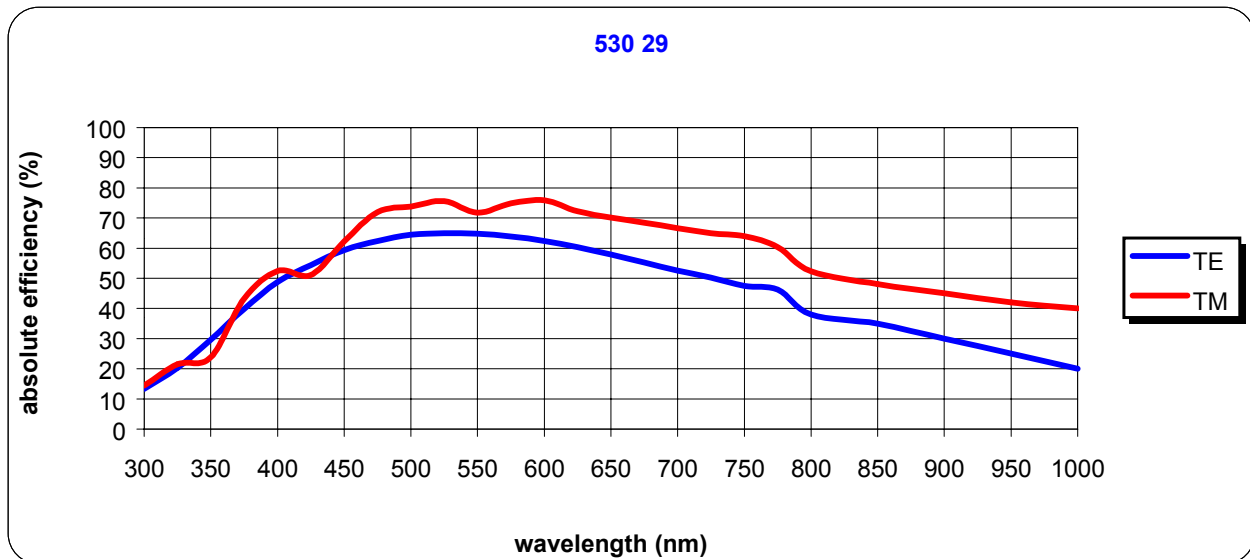


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 29	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	600
Spectral Range (nm)	
Blaze Wavelength (nm)	500
Blaze Angle (deg)	8.6°
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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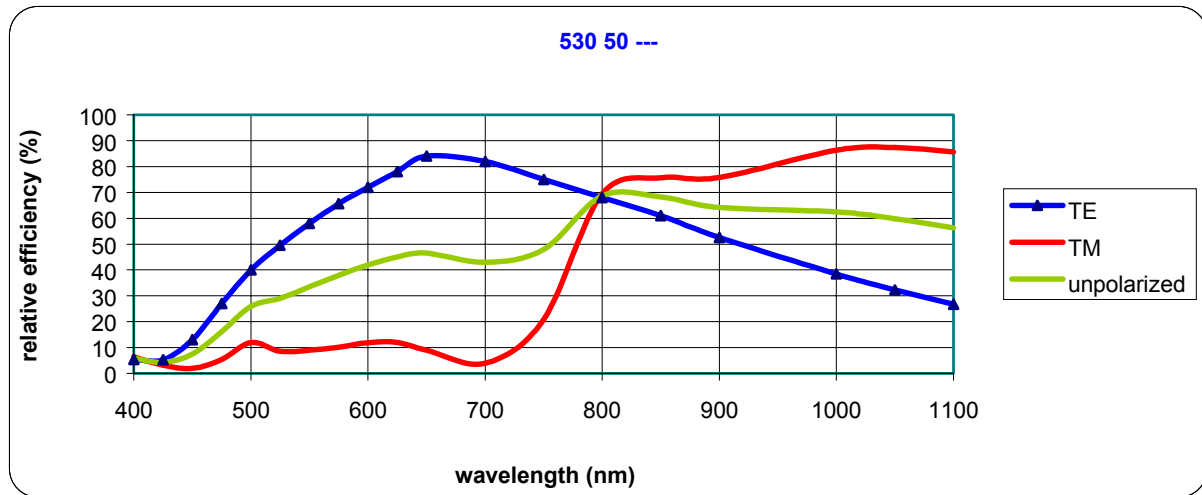
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Japan: +81 (0)3 6206 4721
Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 50	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	1200
Spectral Range (nm)	400-1100
Blaze Wavelength (nm)	900
Blaze Angle (deg)	32.6°
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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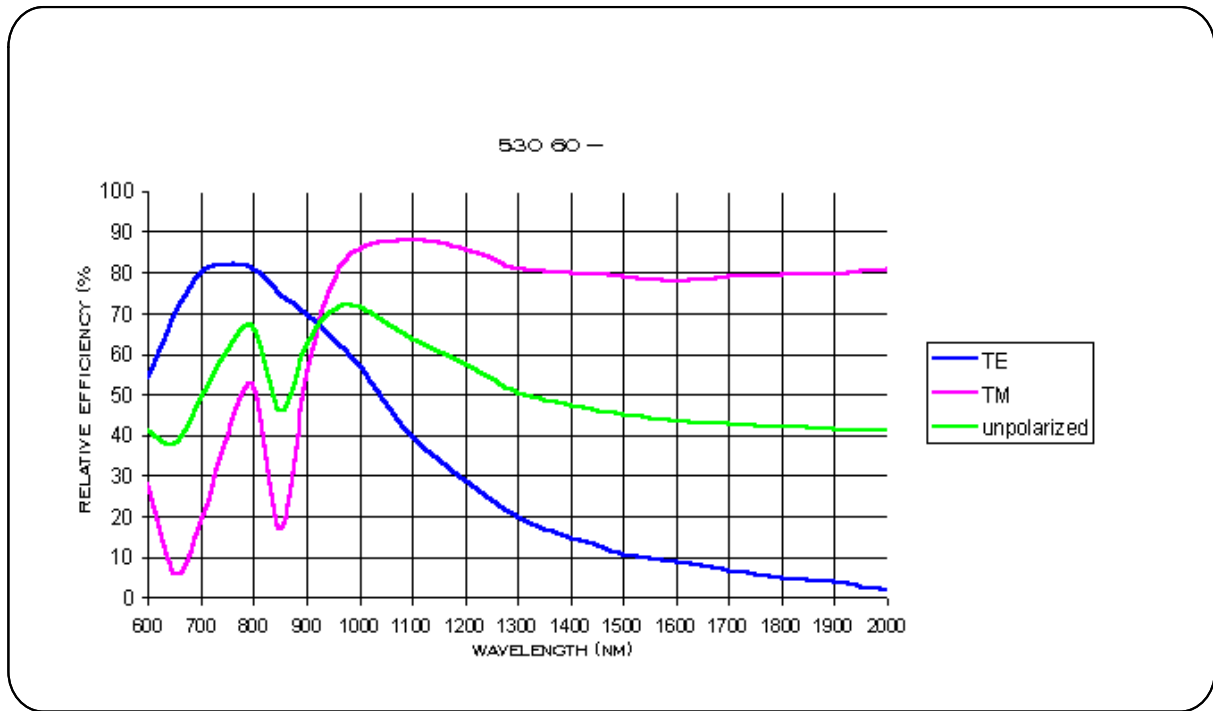
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Other: +1 732 494 8660

Spectral Efficiency Curve

Reference 530 60	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	900
Spectral Range (nm)	700 - 1700
Blaze Wavelength (nm)	950
Blaze Angle (deg)	
Configuration	Quasi-littrow

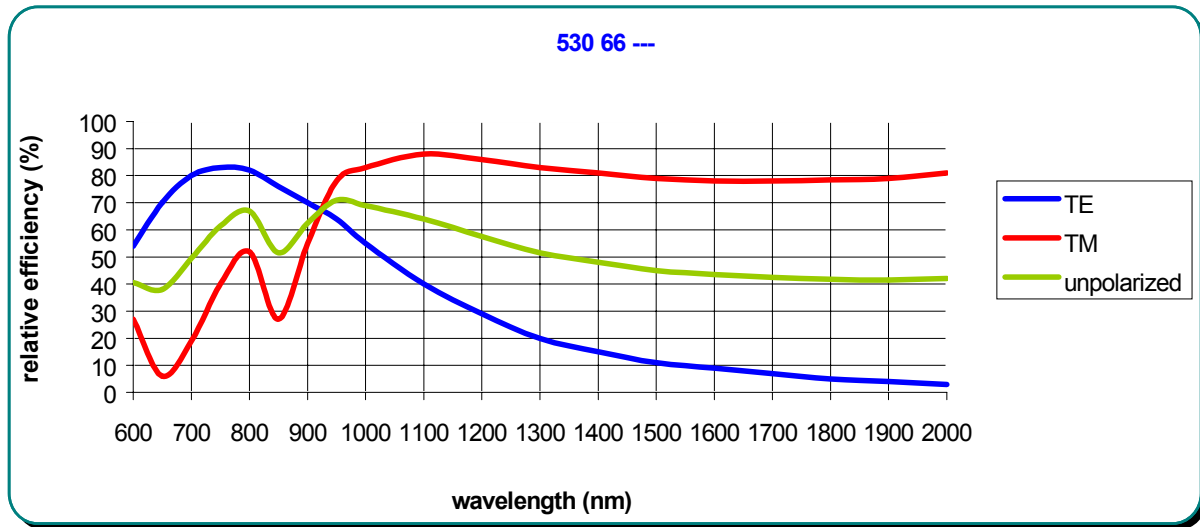


This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



Spectral Efficiency Curve

Reference 530 66	
Grating Type	Plane Holographic Grating Blazed By Ion Etching
Groove Density (gr/mm)	900
Spectral Range (nm)	600-1800
Blaze Wavelength (nm)	850
Blaze Angle (deg)	24°
Configuration	Quasi-littrow



This efficiency curve should be used as reference only and does not imply any guarantee on actual performance. Actual performance of the grating will depend on several variables including the usage geometry and the coating. Efficiency curves labeled as "Theoretical" are calculated estimates of performance based on groove profile.



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