

Instrument Design Development Centre Indian Institute of Technology Delhi

Date: 30-05-2014

Sub: NOTICE FOR INVITING QUOTATIONS (NIQ) FOR Diffractive Optical Element/Computer Generated Hologram with two encoded wavefronts of desired shapes

Instrument Design Development Centre, IIT New Delhi requires Diffractive Optical Element/ Computer Generated Hologram with two encoded wavefronts for desired shapes. Broad specifications of the same are described below. Broad specifications of the same are described below. Kindly send Technical and commercial bids for the same in **separate sealed envelopes**. Your bids must reach the address given below on or before **24-06-2014**.

Specifications of Components:

S. No.	Name of item	Specifications	Qty.
1	Diffractive Optical Element /Computer Generated Hologram with two encoded wavefronts for desired shapes	<ol style="list-style-type: none"> 1. Binary Phase only Diffractive optical element (DOE) with two wavefronts encoded with strips of approximately 100 microns 2. One wavefront to be used as null element for a aspheric surface 3. Radius of curvature of the spherical wavefront is approximately 208 mm. 4. Another wavefront will be spherical wavefront which will work as reference 5. DOE will be used for the 632.8 nm wavelength 6. The features of spherical and aspheric wavefronts should be written approximately 30 mm diameter. 7. The DOE must also have alignment structures (grating) written outside the aspheric and spherical structure zone 8. The total size of the DOE is approximately 50 mm 9. Substrate: Suprasil of 1.50±.02 mm thick 10. Substrate quality: ~ $\lambda/4$ figure error ($\lambda= 632$ nm) 11. The exact data for aspheric wavefront are spherical wavefronts are attached with the NIQ. 	One

Terms and conditions covering submission of quotations:

- Supply all technical specifications and model number.
- Kindly quote the rates for F.O.B New Delhi prices.
- Validity of the quotation should be at least for a period of three months.
- Clearly indicate whether the prices are inclusive of all taxes. Otherwise indicate all taxes separately.
- Letter from manufacturer to be attached for authenticity of dealership/agency.
- In case of proprietary item, the principals must submit a letter declaring it clearly as a proprietary item.
- Payment terms: Payment against delivery (Wire Transfer after receipt of item) OR site draft.
- IIT Delhi reserves rights of acceptance or rejection of any or all quotations.
- Quotations should be sent to

Dr. Gufran Sayeed Khan
WS-140, IDDC, IIT Delhi
Hauz Khas, New Delhi -110016, India

Coefficients of aspherical polynomial:

A	445.189	x^2y^{13}	-3.30E-21
y^1	7.00E-09	x^2y^{14}	-9.95E-18
y^2	4.748777	x^3	-0.0005
y^3	-1.76E-09	x^3y^1	-1.73E-09
y^4	-0.00562	x^3y^2	5.02E-06
y^5	9.41E-11	x^3y^3	8.82E-11
y^6	-4.32E-06	x^3y^4	-1.18E-08
y^7	-2.09E-12	x^3y^5	-1.86E-12
y^8	-1.39E-08	x^3y^6	2.15E-10
y^9	2.33E-14	x^3y^7	2.03E-14
y^{10}	2.05E-11	x^3y^8	-1.87E-12
y^{11}	-1.38E-16	x^3y^9	-1.19E-16
y^{12}	-2.34E-13	x^3y^{10}	7.92E-15
y^{13}	4.18E-19	x^3y^{11}	3.58E-19
y^{14}	6.92E-16	x^3y^{12}	-1.57E-17
y^{15}	-5.04E-22	x^3y^{13}	-4.34E-22
y^{16}	-1.23E-18	x^4	-0.00561
x^1	1.88E-05	x^4y^1	-8.93E-11
x^1y^1	1.32E-08	x^4y^2	-1.29E-05
x^1y^2	-0.0005	x^4y^3	1.71E-12
x^1y^3	-8.97E-10	x^4y^4	-8.35E-08
x^1y^4	2.51E-06	x^4y^5	1.73E-14
x^1y^5	2.50E-11	x^4y^6	2.07E-10
x^1y^6	-3.92E-09	x^4y^7	-5.28E-16
x^1y^7	-3.66E-13	x^4y^8	-3.53E-12
x^1y^8	5.36E-11	x^4y^9	3.51E-18
x^1y^9	3.03E-15	x^4y^{10}	1.46E-14
x^1y^{10}	-3.74E-13	x^4y^{11}	-7.30E-21
x^1y^{11}	-1.44E-17	x^4y^{12}	-3.46E-17
x^1y^{12}	1.32E-15	x^5	2.51E-06
x^1y^{13}	3.66E-20	x^5y^1	7.17E-11
x^1y^{14}	-2.25E-18	x^5y^2	-1.17E-08
x^1y^{15}	-3.86E-23	x^5y^3	-2.72E-12
x^2	4.74733	x^5y^4	3.21E-10
x^2y^1	8.41E-10	x^5y^5	4.22E-14
x^2y^2	-0.01123	x^5y^6	-3.75E-12
x^2y^3	4.50E-11	x^5y^7	-3.23E-16
x^2y^4	-1.30E-05	x^5y^8	1.99E-14
x^2y^5	-3.48E-12	x^5y^9	1.20E-18
x^2y^6	-5.57E-08	x^5y^{10}	-4.74E-17
x^2y^7	6.79E-14	x^5y^{11}	-1.74E-21
x^2y^8	1.04E-10	x^6	-4.32E-06
x^2y^9	-5.76E-16	x^6y^1	2.46E-12
x^2y^{10}	-1.41E-12	x^6y^2	-5.57E-08
x^2y^{11}	2.25E-18	x^6y^3	-5.66E-14
x^2y^{12}	4.89E-15	x^6y^4	2.07E-10

x^6y^5	2.94E-16	$x^{11}y^5$	-3.10E-21
x^6y^6	-4.71E-12	x^{12}	-2.34E-13
x^6y^7	5.56E-19	$x^{12}y^1$	-6.00E-19
x^6y^8	2.44E-14	$x^{12}y^2$	4.89E-15
x^6y^9	-4.81E-21	$x^{12}y^3$	3.89E-21
x^6y^{10}	-6.95E-17	$x^{12}y^4$	-3.46E-17
x^7	-3.91E-09	x^{13}	1.32E-15
x^7y^1	-1.38E-12	$x^{13}y^1$	2.23E-19
x^7y^2	2.14E-10	$x^{13}y^2$	-1.58E-17
x^7y^3	3.85E-14	$x^{13}y^3$	-1.35E-21
x^7y^4	-3.73E-12	x^{14}	6.93E-16
x^7y^5	-4.14E-16	$x^{14}y^1$	7.38E-22
x^7y^6	2.65E-14	$x^{14}y^2$	-9.95E-18
x^7y^7	1.99E-18	x^{15}	-2.24E-18
x^7y^8	-7.90E-17	$x^{15}y^1$	-2.58E-22
x^7y^9	-3.54E-21	x^{16}	-1.24E-18
x^8	-1.39E-08		
x^8y^1	-3.05E-14		
x^8y^2	1.04E-10		
x^8y^3	5.74E-16		
x^8y^4	-3.53E-12		
x^8y^5	-2.88E-18		
x^8y^6	2.44E-14		
x^8y^7	3.21E-21		
x^8y^8	-8.70E-17		
x^9	5.34E-11		
x^9y^1	1.40E-14		
x^9y^2	-1.87E-12		
x^9y^3	-2.75E-16		
x^9y^4	1.97E-14		
x^9y^5	1.85E-18		
x^9y^6	-7.87E-17		
x^9y^7	-4.20E-21		
x^{10}	2.06E-11		
$x^{10}y^1$	1.92E-16		
$x^{10}y^2$	-1.41E-12		
$x^{10}y^3$	-2.48E-18		
$x^{10}y^4$	1.46E-14		
$x^{10}y^5$	6.84E-21		
$x^{10}y^6$	-6.95E-17		
x^{11}	-3.73E-13		
$x^{11}y^1$	-7.78E-17		
$x^{11}y^2$	7.93E-15		
$x^{11}y^3$	9.74E-19		
$x^{11}y^4$	-4.70E-17		

Coefficients of spherical polynomial:

A	400.0538	x^2y^{13}	1.11E-21
y^1	-6.65E-09	x^2y^{14}	2.74E-21
y^2	3.79215	x^3	3.05E-09
y^3	6.26E-10	x^3y^1	-3.95E-10
y^4	-2.18E-05	x^3y^2	-1.60E-10
y^5	-1.99E-11	x^3y^3	1.16E-11
y^6	-7.50E-11	x^3y^4	3.46E-12
y^7	2.78E-13	x^3y^5	-6.54E-14
y^8	5.98E-12	x^3y^6	-2.96E-14
y^9	-1.75E-15	x^3y^7	-9.76E-16
y^{10}	-6.02E-14	x^3y^8	6.86E-17
y^{11}	3.32E-18	x^3y^9	1.38E-17
y^{12}	3.37E-16	x^3y^{10}	2.50E-19
y^{13}	1.08E-20	x^3y^{11}	-6.01E-20
y^{14}	-9.85E-19	x^3y^{12}	-9.76E-22
y^{15}	-3.87E-23	x^3y^{13}	8.94E-23
y^{16}	1.17E-21	x^4	-2.18E-05
x^1	-27.6145	x^4y^1	-5.84E-11
x^1y^1	1.99E-09	x^4y^2	3.95E-11
x^1y^2	-3.86E-10	x^4y^3	2.76E-12
x^1y^3	-1.22E-12	x^4y^4	1.30E-11
x^1y^4	5.83E-12	x^4y^5	-5.43E-14
x^1y^5	-3.40E-12	x^4y^6	-1.28E-13
x^1y^6	-7.91E-13	x^4y^7	4.92E-16
x^1y^7	9.23E-14	x^4y^8	7.60E-16
x^1y^8	1.44E-14	x^4y^9	-2.08E-18
x^1y^9	-1.05E-15	x^4y^{10}	-2.64E-18
x^1y^{10}	-1.12E-16	x^4y^{11}	3.34E-21
x^1y^{11}	6.09E-18	x^4y^{12}	4.10E-21
x^1y^{12}	4.01E-19	x^5	-2.21E-10
x^1y^{13}	-1.76E-20	x^5y^1	1.88E-11
x^1y^{14}	-5.47E-22	x^5y^2	5.67E-12
x^1y^{15}	2.04E-23	x^5y^3	-5.17E-13
x^2	3.79215	x^5y^4	-1.08E-13
x^2y^1	1.38E-09	x^5y^5	4.60E-15
x^2y^2	-4.37E-05	x^5y^6	9.00E-16
x^2y^3	-9.70E-11	x^5y^7	-1.10E-17
x^2y^4	3.89E-10	x^5y^8	-3.13E-18
x^2y^5	2.65E-12	x^5y^9	-3.65E-20
x^2y^6	6.96E-12	x^5y^{10}	3.55E-21
x^2y^7	-3.50E-14	x^5y^{11}	1.44E-22
x^2y^8	-8.19E-14	x^6	-5.55E-10
x^2y^9	2.39E-16	x^6y^1	1.09E-12
x^2y^{10}	5.55E-16	x^6y^2	1.88E-11
x^2y^{11}	-8.17E-19	x^6y^3	-3.35E-14
x^2y^{12}	-1.95E-18	x^6y^4	-2.42E-13

x^6y^5	4.63E-16	x^9y^6	1.48E-20
x^6y^6	1.49E-15	x^9y^7	-5.41E-22
x^6y^7	-2.65E-18	x^{10}	-1.55E-13
x^6y^8	-4.46E-18	$x^{10}y^1$	5.67E-17
x^6y^9	5.30E-21	$x^{10}y^2$	1.66E-15
x^6y^{10}	5.44E-21	$x^{10}y^3$	-5.16E-19
x^7	5.26E-12	$x^{10}y^4$	-9.40E-18
x^7y^1	-3.86E-13	$x^{10}y^5$	2.24E-21
x^7y^2	-8.16E-14	$x^{10}y^6$	1.69E-20
x^7y^3	8.69E-15	x^{11}	4.57E-16
x^7y^4	1.14E-15	$x^{11}y^1$	-2.33E-17
x^7y^5	-6.50E-17	$x^{11}y^2$	-1.91E-18
x^7y^6	-6.67E-18	$x^{11}y^3$	2.63E-19
x^7y^7	1.75E-19	$x^{11}y^4$	7.67E-21
x^7y^8	1.27E-20	$x^{11}y^5$	-6.80E-22
x^7y^9	-8.86E-23	x^{12}	8.86E-16
x^8	1.51E-11	$x^{12}y^1$	-1.60E-19
x^8y^1	-1.06E-14	$x^{12}y^2$	-5.66E-18
x^8y^2	-2.45E-13	$x^{12}y^3$	4.84E-22
x^8y^3	1.94E-16	$x^{12}y^4$	1.54E-20
x^8y^4	2.19E-15	x^{13}	-1.62E-18
x^8y^5	-1.72E-18	$x^{13}y^1$	6.81E-20
x^8y^6	-8.30E-18	$x^{13}y^2$	2.50E-21
x^8y^7	4.83E-21	$x^{13}y^3$	-3.83E-22
x^8y^8	1.11E-20	x^{14}	-2.64E-18
x^9	-6.63E-14	$x^{14}y^1$	1.87E-22
x^9y^1	4.09E-15	$x^{14}y^2$	7.61E-21
x^9y^2	5.67E-16	x^{15}	2.32E-21
x^9y^3	-6.92E-17	$x^{15}y^1$	-7.96E-23
x^9y^4	-4.99E-18	x^{16}	3.21E-21
x^9y^5	3.56E-19		